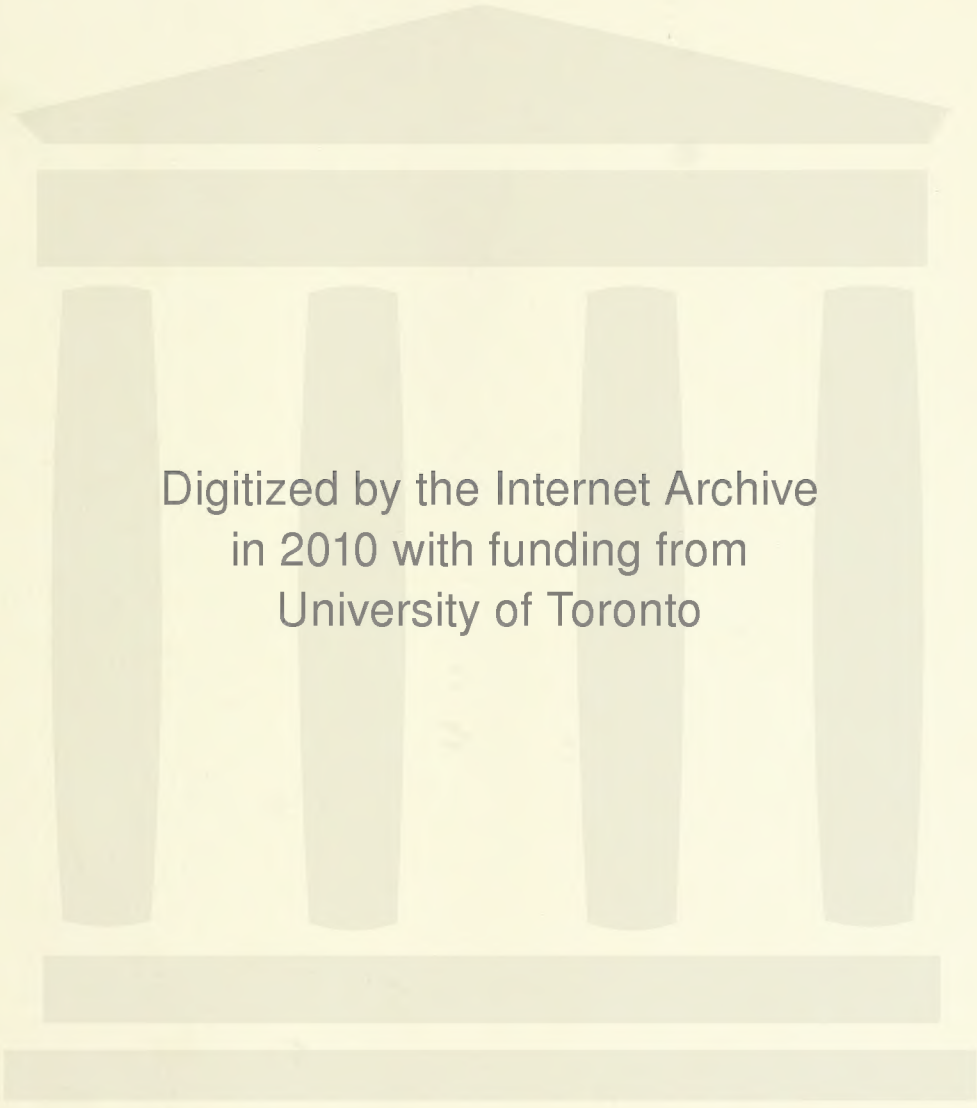
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WHY IS NASAL CATARRH SO PREVALENT IN THE UNITED STATES?*

BY WOLFF FREUDENTHAL, M. D.,
New York.

It is a well established principle that we must find the cause of a disease if we would treat it correctly, though still not feasible in many instances, in this age of preventive medicine. So we justly ask: "What is catarrh of the nose?"

The layman, and many medical men, call almost everything pathological within the nose catarrh which, for most of them, is synonymous with "cold." The word catarrh, as you well know, is derived from the Greek κατά ῥέω, to flow downward. In fact, up to the seventeenth century, physicians believed that the fluid came down from the ventricles of the cerebrum, and that catarrh was nothing else than a cerebral diarrhea. Our views have since undergone some changes, but even nowadays there is by no means a unanimity of opinion.

In order to bring this question nearer to our understanding, I may be permitted to divide nasal catarrh into two classes, viz., nasal catarrhs of an infectious nature and idiopathic catarrhs. To the first category belong all cases from an acute infectious coryza leading to or associated with accessory sinus diseases, up to affections of the brain (meningitis, cerebral abscess, etc). It seems natural to believe that the older physicians were called in only to the more serious infections when the pus really broke through and was discharged from the nose. The brain was actually relieved of its pressure, and the idea of the "catarrh" coming from the brain was not so remote. We shall not, however, discuss the infectious cases to-night. But in order not to be misunderstood, we will say at once that there does exist such a condition as an infectious coryza, which is propagated from one member of a family to another. You can all recall many such experiences during an epidemic of grippe. These cases form a small proportion only, when compared with the great mass of idiopathic catarrhs of the everyday type. The word "idiopathic" is used only for want of a better one. In this class we often see a discharge from the nose, setting in acutely, but without any fever and without any of the symptoms of infection.

We then confine the meaning of nasal catarrh to that condition known to be accompanied by a discharge either from the nose anteriorly or flowing down through the retropharynx into the deeper portions. The discharge is due to a pathological condition of the mucosa, and does not depend upon a deflected septum, polypi, or the like, which belong to a distinct class. We therefore have to deal with a simple rhinitis (not of vasomotor origin) which, as one can easily imagine, is often, or, perhaps, always, connected with a postnasal affection of the same kind.

For a long time the belief has prevailed that Americans were especially disposed to catarrh, the contributing causes being sought in the marked humidity of the atmosphere, especially along the coast, the sudden changes in the temperature, and in the dusty and unclean streets. Even Moreli Mackenzie, after traveling in this country, attributed the presence of postnasal catarrh in the United States chiefly to the large amount of dust and to the habit of fast eating and drinking, and his ideas have been disseminated by the textbooks abroad and in this country. There is dust in other parts of the globe; there are dirty streets elsewhere, although our metropolis occupies quite a prominent place in this respect; there are fast livers all over the world; and yet nowhere else is to be found such a multitude of persons suffering from catarrh. What is the reason for this? What is the real cause of this peculiarity?

Apparently there is too much fluid present, which shows itself in the running of the nose, etc., and it is only natural that the question arises, Where does that surplus fluid come from? It was Bosworth who first tried to prove that this "apparent excessive secretion is really a diminished secretion." The argument he brought forth is very good. If a certain amount of serum, say one pint, is secreted by a normal nose, it disappears by evaporation without the patient being conscious of it, the water being taken up largely by the inspired current of air. "In diseased conditions the amount of serous exudation is not infrequently diminished *as the result of hypertrophy*, and therefore the mucous secretion, not being diluted with the large amount of serum, becomes thickly inspissated." We agree with Bosworth that the serous discharge is diminished, not on account of a hypertrophy as he believes, but for other reasons to be discussed presently. The inspissated secretions, according to my opinion, act like foreign bodies in the nose, as well as in the retropharynx, irritating the Schneiderian nerve tracts and thus causing a flow of serum from the nose, and at other times causing a flow of saliva from the throat and mouth. This is increased by the effort of the patient to get rid of the dried

*Read before the Brooklyn Medical Association, October 8, 1913, and the Eastern Medical Society, November 14, 1913.

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masses, so that there is a constant irritation in the nose or throat, or both, with quite a number of secondary affections, and we have the picture of a chronic nasal or pharyngeal catarrh.

We have just spoken of a diminished exudation as the root of all these troubles, and shall have to answer the question, What is the cause of this lack of fluid? Is it not strange that in this city where we are surrounded by water on every side, where we have the ocean washing our shores, that we should suffer from a lack of moisture?

The explanation is to be found in our present mode of living. We do not spend our time in or on the surrounding waters. We live for nine to twelve months of every year inclosed in the overheated, badly ventilated rooms of apartments ranging from those of elegance to those in tenements. We work in overheated office buildings or in sweatshops, often called by some other name. As a rule, the rooms are tightly closed against the invasion of fresh air. If we speak of climatic influence, and there certainly is such an influence, it is the climate of our rooms, of the caves which we inhabit, which we must study. It is immaterial what is the temperature, the degree of moisture, or the winds at Sandy Hook. The four million of our inhabitants do not live there, and it does not matter to them whether or not in the harbor of New York there is a great deal of moisture. In our rooms there is positively not over much humidity, but, on the contrary, too little. This is due to the manner in which our houses are heated.

Many years ago, when the writer first came to this country as a physician, he often noticed that in winter he could not breathe well indoors, and that this was more pronounced when he visited certain so called apartment houses. The air was really oppressive. He was consulted repeatedly by his German patients for similar complaints. When questioned, the more intelligent voiced exactly these same sensations. Finally, the writer commenced to investigate the air in the rooms of his own house, in the hospitals, theatres, etc., and the results obtained after several years of such investigation were extremely surprising. They were reported in a paper published in the *Journal of the American Medical Association* for November 9, 1895. The relative humidity, which ought to have a minimum of forty per cent. of the saturation, never attained that lowest normal point. Even in the best equipped places in New York city it usually came down to thirty per cent., twenty-five per cent., or even less. Such was the case during the winter months. How very detrimental this is will be clearer if compared with the same conditions in summer, when a relative humidity of eighty-five, ninety, or ninety-five per cent. is not uncommon in this vicinity, and this, when the temperature reaches 90° to 100° F. It must here be remembered again that the higher the temperature of the air the more moisture it can absorb, and that, for example, ninety per cent. relative humidity at 100° F. is vastly more than ninety per cent. relative humidity at 32° F. Imagine people who lived here through the summer months and inhaled that suffocatingly moist air having to breathe in winter an atmosphere which contains hardly any moisture. On several occasions, when the outer temperature was about zero, the hygrometer in my office sank to fifteen per cent.!

With our centralized system of heating, the air is generally heated in the cellar and at the same time robbed of most, if not all, of its moisture. In this condition it is transmitted to our rooms, where it absorbs all the moisture there present. The result is that we inhale air whose humidity is abnormally reduced. I have already given many examples and proofs of this, and will add only those made at Bedford Sanatorium in 1903. This sanatorium, situated in a suburb of New York, a few hundred feet above the village of Bedford Hills, meets with all the requirements of modern hygiene. It has large wards with high ceilings, numerous and large windows, excellent ventilation, etc.; but central heating. Even here the percentage of humidity in the air remains, for the most part, far below normal, as you may readily understand from a study of the tables appended to my former article.[1]

It may be of interest to mention that the relative humidity was measured in the wards and at the same time in an adjacent tent, in which patients slept, even during severe weather in winter. For comparison's sake, measurements for eight days are given here:

		Temperature		Relative humidity	
February.	Hour.	Ward.	Tent.	Ward.	Tent.
1st	4 p. m.	60° F.	36° F.	40 per cent.	96 per cent.
2nd	8 a. m.	66° F.	35° F.	38 per cent.	93 per cent.
2nd	12 m.	66° F.	38° F.	39 per cent.	92 per cent.
2nd	4 p. m.	68° F.	40° F.	39 per cent.	90 per cent.
3rd	8 a. m.	68° F.	36° F.	32 per cent.	75 per cent.
3rd	12 m.	68° F.	50° F.	32 per cent.	45 per cent.
3rd	4 p. m.	67° F.	47° F.	32 per cent.	45 per cent.
4th	8 a. m.	65° F.	38° F.	37 per cent.	95 per cent.
4th	12 m.	66° F.	40° F.	43 per cent.	95 per cent.
4th	4 p. m.	66° F.	40° F.	40 per cent.	95 per cent.
5th	8 a. m.	66° F.	28° F.	35 per cent.	53 per cent.
5th	12 m.	57° F.	30° F.	31 per cent.	43 per cent.
5th	4 p. m.	58° F.	30° F.	32 per cent.	45 per cent.
6th	8 a. m.	64° F.	30° F.	29 per cent.	59 per cent.
6th	12 m.	57° F.	30° F.	30 per cent.	40 per cent.
6th	4 p. m.	63° F.	35° F.	29 per cent.	44 per cent.
7th	8 a. m.	70° F.	30° F.	35 per cent.	62 per cent.
7th	12 m.	66° F.	34° F.	25 per cent.	45 per cent.
7th	4 p. m.	64° F.	36° F.	23 per cent.	39 per cent.
8th	8 a. m.	66° F.	30° F.	36 per cent.	70 per cent.
8th	12 m.	64° F.	35° F.	40 per cent.	96 per cent.

Further measurements which I will not detail have also shown a marked difference in the moisture of the wards and in the tent. It amounted, on the average, to about thirty per cent. The difference was greater on rainy or very cold days, when the windows had to be kept closed most of the time, and less on clear, warm days. When, owing to the prevailing scarcity of coal, they were obliged, for a time, to do without heating, the difference in the quantity of moisture in the wards and tent was reduced to a minimum. These are the conditions in an absolutely hygienically equipped sanatorium. But how much worse it is in our dwellings, and especially in the sweatshops and homes of the poor!

The influence which this abnormally dry air has on the mucous membrane of the nose, throat, etc., I have shown in the article mentioned above, and will quote only one paragraph from it: It is . . . proved that dry air, if inhaled, will become saturated in the nose and nasopharynx,—that is to say, the drier the air we inhale, the more moisture will be given off by the nose and nasopharynx. The

[1] W. Freudenthal: Is Atrophic Rhinitis always Autochthonous? *Annals of Otology*, June, 1903.

work of these organs will be so much greater with every particle of air we inhale. How long the mucous membrane of these parts will be able to furnish the necessary water supply will only, therefore, be a question of time. Consequently, we will, sooner or later, reach that point where the mucous membranes of these parts will be as dry as a well in summer. This will occur, for example, in very cold weather, only temporarily in perfectly healthy persons, or permanently, as we see it in so many thousands of cases, in pathological conditions.

Thus a dry rhinitis and rhinopharyngitis develops, and I could experimentally produce the same conditions in any one of you, under like surroundings. This state of the nasal mucosa makes it often appear as though the patient had a coryza. For example, if he goes out in winter, his nose will discharge because the mucosa is unable to absorb moisture from the atmosphere, as its surface is either dried up or covered with scabs. On the other hand, every mechanical irritation will produce running of the nose or sneezing much more easily than in normal conditions, since the great protection of the nose, the epithelium, is gone. These symptoms often lead to a wrong diagnosis, and the patient is treated for an acute cold when he has nothing but a chronic rhinitis, for which just the contrary treatment is indicated.

As most of us are exposed to this excessively dry atmosphere for the greater part of the time, it is evident that the lack of humidity is the greatest factor in producing nasal and postnasal catarrh, with all its sequelæ. To the last mentioned class belong, among others, the granulations or vegetations in the vault of the pharynx, etc.,—this only apropos.

But there are other etiological factors to be mentioned here, dust, for example, and that may include all other mechanical or chemical irritations and repeated attacks of acute coryza, due to a "cold."

Dust.—I hope you will be convinced from the foregoing remarks that dust does not play that important rôle in the etiology of catarrh which was attributed to it by many writers thirty years ago. But just walk down our avenues on a windy day, and you will be convinced that it has some very pernicious effects. The dust developed in our city from the dry sweeping of the streets, from the tearing down of buildings, from the upheaval of roads, from the automobiles, from the dumping of ashes into uncovered ashcarts, etc., etc., all these remind one of a government of the middle ages and not of a civilized city of the twentieth century. A period of long drought in our dustladen town is a calamity in winter or summer. Rain and snow are blessings that not only clear our streets, but our upper air tracts as well. Dust plays some role in producing catarrhal conditions of the nose; added to the lack of humidity, it becomes an important etiological factor. We omit here the other ill effects dust has on the organism.

Colds.—Is there really such a thing as the catching of a cold without an infection? I am firmly convinced that there is. In spite of the fact that the word "cold" has been and still is so very much abused by physicians and laymen, I cannot believe that every coryza is of an infectious or contagious nature, and I shall never give my consent to the demand that every person who sneezes should be isolated and treated like a person dangerous to the community. That is what some overzealous medical men are advocating. True, there is an infectious coryza, especially of grippal origin. If one child in a family is stricken with influenza, you will isolate it whether it sneezes or not. In such a case the coryza is only the forerunner or herald of a general infection. On the other hand, take the following imaginary example. You suddenly expose several persons, who were overheated, to a low temperature and a strong current of air. One person will start in to sneeze; another will have an acute otitis; a third, an irritation of the bladder; a fourth, diarrhea; and in the fifth may develop a facial paralysis. Will any sensible person conclude that these five persons were affected simultaneously by the same bacillus in such different ways? And yet that is what some men try to make us believe. Is it not more credible that an exposure to the inclemency of the weather struck every one of these five persons at his *locus minoris resistentiæ*? Can any one convince you that a man who commences to sneeze after walking barefoot through his room caught an infection? Indeed not. These cases are as plain as they can be, but not so their treatment.

Let me insert here a little humoral pathology for your consideration. It is not always the quantity of garments worn nor the lack of them, nor is it always the strength of a draught nor the current of air that counts in the production of these colds. Of much greater importance is the condition your entire organism is in at the time of exposure. For example, while bathing, rowing, running, etc., a person is in a state of constant and laborious activity, thereby setting in play those processes by which animal heat is generated. This causes a vasomotor reaction that will protect the organism for quite some time, and in such a state you may expose yourself much more than when little heat had been produced, and that without harm.

THERAPY.

The therapy of these affections lies in their prevention. To prevent a coryza and other "colds" means restoration of the function of the skin to its normal physiological action. The skin is the one organ above all that ought to protect us against all thermal and climatic influences, but in this age it has been, so to speak, put out of commission. Our garments are so manifold that in many instances they do not allow the air to penetrate to our skin, and the latter loses its function; consequently, a little change in temperature, a little rain or draught will upset the equilibrium of most persons, and they will present a coryza or some other form of "cold." The fear of "catching cold" is so paramount with many persons that they consider themselves wise in wearing too many garments, as a means of protection. When winter arrives, whether it be a cold season or not, people, whether healthy or not, wear fur coats; they wear skirts and underskirts, then vests, coats and overcoats, sweaters, and sometimes rubber coats, to be sure that they are dressed "airtight" or "waterproof."

The same fear prevails in regard to fresh air. Many people do not dare to go out if the wind

blows, or if, perchance, it rains. The children are not sent out until their fond mammas, nurses, or *Fräuleins* are convinced that no rain or snow is likely to fall; and if a child so reared is accidentally caught in a shower and takes cold, the mother reproaches herself for carelessness, not realizing that it is the whole system of former coddling that is to blame.

People speak of the hardening effect of cold baths. Very true; I recommend them myself. But we can be exposed to a cold bath or a cold douche for only a few minutes, while we might use the fresh air for hours of each day. By bringing the fresh air in contact with the body, the process of hardening will be much more effective than by the use of cold baths alone.

There are many other points to be considered and the writer would like to direct attention to an article on the nature of the so called "colds," published by him in 1899[2]. It is impossible to discuss its contents here.

CONCLUSIONS.

1. In order to lessen the great prevalence of catarrh, our systems of heating should be changed so as to allow much more moisture to evaporate in each living room. That is especially important in schools or meeting halls of every kind—churches, theatres, concert or lecture rooms, and assembly rooms of every kind. A pail of water in front of the heater is ineffective. We have to employ other means in order to overcome the deficient humidity indoors.

2. In order to prevent colds we have to limit the amount of garments worn.

3. Exposure to draughts, rain, snow, and all inclemencies of the weather ought to be practised by the youth, in order to prevent the most preventable of all diseases—colds.

1003 MADISON AVENUE.

TREATMENT OF POLIOMYELITIS BY OPERATIVE MEASURES.

The Results Illustrated by a Case.

By GWILYM G DAVIS, M. D., M. R. C. S. ENG.,
Philadelphia,
Professor of Orthopedic Surgery, University of Pennsylvania.

The literature of medicine and surgery has become so voluminous that it is difficult for a person to keep informed as to its status even in a single subject. This being true, it is obviously impossible for those engaged in the practice of general medicine and surgery to be acquainted with the advances made in all the various special departments. This is especially so in the domain of treatment, which often changes radically in short periods of time. The general practitioner of a few decades ago, whether of surgery or medicine, was qualified to give the best advice because the field was comparatively restricted, but at the present time it is extremely difficult to cover a wide field with any degree of thoroughness, and unless the greatest care is taken, the practical handling and treatment of cases is apt to suffer. Orthopedics as a specialty has arisen during the period of my own experience, yet it already has a large literature and easily commands one's entire time and attention.

One of the subjects in which progress has been most marked is that of infantile paralysis or acute poliomyelitis. Much has been learned about its etiology and natural history, but it is especially to its treatment that we desire to call attention. Not many years ago the treatment of the affection consisted of electricity, massage, and braces; rarely, a tendon was divided. Of recent years, however, operative surgery has opened a new field of aid for these paralytics, and it is because a good example of what can be done for them by operative means came to my notice that it was considered worth while to present the patient to the college as an illustration of what can be done for this class of cases. As a rule, at present, operative measures are reserved as a late procedure and resorted to only when further improvement or restoration of muscular power is not to be expected. For the first two or three years after the onset of the paralysis the improvement in function of the paralyzed parts is progressive, but it finally comes so nearly or quite to a standstill that radical measures of treatment are justifiable. I strongly suspect, as we become more experienced and better informed as to what can be done and what results can be achieved by operative procedures, that they will be resorted to earlier than is now considered advisable. Apparatus is used during what may be called the period of reconstruction, only as a temporary measure. In some of the paralyses recovery ensues while the apparatus is worn. In such cases operations are not needed, but, eventually, in many cases one is confronted with the necessity of either the patient wearing an apparatus indefinitely or of so arranging the limb anatomically that it can fulfil its purpose without apparatus.

The problems are intricate and involved and are usually met by operations on the bones and joints which limit and restrict their movements, or operations on the tendons and muscles which tend to restore the balance of the affected parts. Each individual case is a puzzle in itself and has its own special indications. It is for this reason that apparatus can no longer be prescribed with the freedom, and I might almost say, thoughtlessness, that it was a few years ago. A child should not be condemned to wear a brace unless it is necessary. We are looking to the future of the child, and an unnecessary brace is a decided detriment to its mental development. It advertises to the world that the child is a cripple. This is one reason why the modern orthopedic surgeon no longer desires to apply braces, but rather seeks to avoid them and operative surgery aids him in so doing. It takes, however, often a long time to determine the value of an operative procedure, and it is wise to look back occasionally and see the ultimate result of what has been done. The case here presented is only one of many, but it was an exceedingly troublesome one, entailing endless care on both the parents and surgeon.

CASE. The patient, a boy, now thirteen years old, was paralyzed at the age of one year. The parts involved were the lower part of the trunk and left lower extremity. The

[2] W. Freudenthal: Über das Wesen der sogenannten Erkältungs-



Osteotomy and arthrodesis

paralysis was extreme. The back was partly affected, also the region of the hip, and almost all muscles of the thigh with the exception of the biceps or external hamstring and one or two of the muscles moving the foot. The limb was suspended flaillike from the trunk and flexed and collapsed as soon as pressure came upon it. There was extreme outward rotation of the foot, and as he grew older a knock knee developed. He wore braces for seven years. By these it was endeavored to prevent the foot from everting or twisting in the shoe and the toes from dropping and catching while walking. The loss of the quadriceps femoris was met by the use of elastic bands, and a hip band served to correct the external rotation. It was thought best not to use a brace for the back, as in these cases of extensive paralysis freedom of the trunk is often essential for the purpose of maintaining the balance.

The boy was very active and during the period of wearing the braces they were a constant source of annoyance, trouble and expense. He was, as is not infrequently the case in paralytics, both active and rough, and his braces were in continual need of repair, being bent or broken a large part of the time. The use of braces was finally so unsatisfactory that it was decided to see whether by operative means sufficient support could be provided so that they could be dispensed with.

The first operation was an osteotomy of the femur. This allowed the knee of the affected side to extend more fully and corrected the knock knee condition which was marked. This operation was done in December, 1910. In the following March an arthrodesis, or fixation of the ankle joint, was done to fix the flail foot; the biceps femoris tendon was loosened from its attachment on the fibula and inserted into the top of the patella; and while the foot was strongly inverted, the fascia lata was slit in a longitudinal direction and sewn fast with silk sutures behind the greater trochanter. He wore a brace for a while until the various operative wounds had well healed, then discarded it, and his walking has improved ever since.

The fixation of the ankle eliminated movement at that joint, also to a considerable extent at the joint between the astragalus and os calcis. The midtarsal joint in front of the ankle not being interfered with, allowed the anterior part of the foot to droop somewhat, but not enough to allow the toes to catch in walking. The lateral movement of the foot was also eliminated to a sufficient extent to remedy the tendency to valgus. The transplanted biceps muscle can be seen to contract perfectly and holds the knee back in walking, so that it does not tend to collapse when weight is put upon it. The holding of the thigh in a position of internal rotation by fastening the fascia lata to the posterior edge of the greater trochanter corrected the outward turning of the foot in walking. This operation (devised by the writer[1]) was performed with silk buried sutures. Some of these eventually worked their way out through a sinus; hence the scarring which is present. Now, however, chromicized catgut is used and no trouble is experienced on that score. The result of the various operative procedures is that the boy no longer needs braces and can now get along without apparatus. The foot is held in approximately the normal position, and it is not necessary for him to put his hand on his thigh and push his knee back in walking, as was the case previously. He now goes to school, and his course of treatment is ended instead of being carried on indefinitely as would have been the case had no operative procedures been attempted. His walking is much better than it was, and it is still improving.

1814 Spruce Street.

THE SELLA TURCICA IN SOME EPILEPTICS.*

By L. Pierce Clark, M. D.,
New York.

and E. W. Caldwell, M. D.,
New York.

Cranial asymmetries and osseous deformities in epileptics have long since been an object of intensive study by many able investigators. A thickening of the skull, general or in special parts, has been carefully studied by American writers, such as Peterson, Sachs, Fisher, Prout, and Clark. In some instances the skull thickenings are very limited in area, making the exostoses described as osteosclerosis by Binzwanger. Some young epileptics present a markedly thickened skull, but usually the thickness and density appear markedly increased after the twenty-fifth year and become very marked after the fortieth year. The calvarium of the epileptic is heavier than that of the normal individual of the same age. These facts and others bearing upon cranial thickenings and asymmetries formed a striking part of the literature of epilepsy. Bourneville, Sollier, and Féré in particular, contributed careful and detailed studies. Müller, in an examination of the heads of forty-three epileptics, found but four that he considered normal. Almost invariably abnormal states of the meninges were noted in the deformities of the skull. These, too, have been written on at length. Therefore it will be at once apparent that when we attempt to estimate the importance of the special cranial deformities and variations in epileptics we enter on a particularly difficult task. This is especially true when one selects so small a part of the base of the skull as the osseous formation of the sella turcica, a part of the skull which, until most recent years, has attracted but little attention. Comparative studies of this region in health and disease in the human being are still to be made. We are soon to face, however, the problem more definitely and solve its bearings on epileptic states. The issue will be, not so much upon the significance of the relationship which sella deformities may have to the cerebral content itself, as the bearing the variation has upon the possible alteration of function of the posterior



Fig. 1.—Stereo pair of normal head. Note change in appearance of clinoidal processes due to shifting of the tube.

lobes of the pituitary bodies, and the role this defect or alteration of function may have upon convulsive disorders of epileptics in particular.

The very considerable variations of the bony formation of the sella turcica in epileptics was first called to my attention by Doctor Caldwell, who has made a number of x ray examinations in the routine study of my cases. I believe his notice was particularly directed to this peculiarity of the sella in epileptics by Doctor Johnston, of Pittsburgh, who has not yet published his full study of the subject. We take occasion at this time to call the critical attention of the society to this bony variation without ascribing any special clinical importance to the variation or sella overgrowth.

In point of fact, posterior lobe abstracts have been long since used in the therapeutics of epilepsy independent of any special indication other than the strong feeling that some deficiency of the ductless glands lay at the foundation of the disease. Two years ago I gave the posterior lobe extract in two cases, the x ray pictures of which are to be shown here to-night. The administration was followed by no permanent results. In one case the attacks which had occurred daily, ceased for several days at two different periods of its administration, but otherwise no results followed. The remedy was given both by the mouth and intramuscularly. The blood pressure was increased in both cases for two or three hours after giving. It may be argued that both of these methods of administration of this drug are but crude means of correcting a deficiency of the gland, and that pituitary implantation ought to be tried. It is a significant fact, however much one believes that ductless gland insufficiency is at the bottom of epilepsy, no large class of observers have brought forward as yet any very convincing clinical evidence that therapy based upon this supposition has been found valuable. No doubt chemists trained in the careful footsteps of Abderhalden may do something to clear the present expectant situation. In the meantime, the older, well tried principles of therapeutics of epilepsy must remain our main dependence of treatment.

The work on the sella and its variations in health and disease are too familiar to you all to warrant my detailing it here. The splendid monograph upon dyspituitarism by Cushing deals so exclusively with the alterations of the gland structure that there is but little mention of what may happen to its bony envelope. He admits, however, that x ray studies of the pituitary fossa, to which attention was first called by Oppenheim, in 1899, have provided most useful adjuncts to the investigation of hypophyseal disease. Studies along this line by Fuchs, Erdheim, Giordani, Jaugeas, Köhler, Fisher, and Schüller are concerned with atrophy, and not



Fig. 2.—Typical overgrowth of sella turcica; female, age forty-two years; epilepsy began at fifteen years of age.



Fig. 3.—No evidence of overgrowth of clinoidal processes; sella turcica shallow; male, aged twenty-one years; epilepsy began at seventeen years of age; psychic attacks every three or four months.



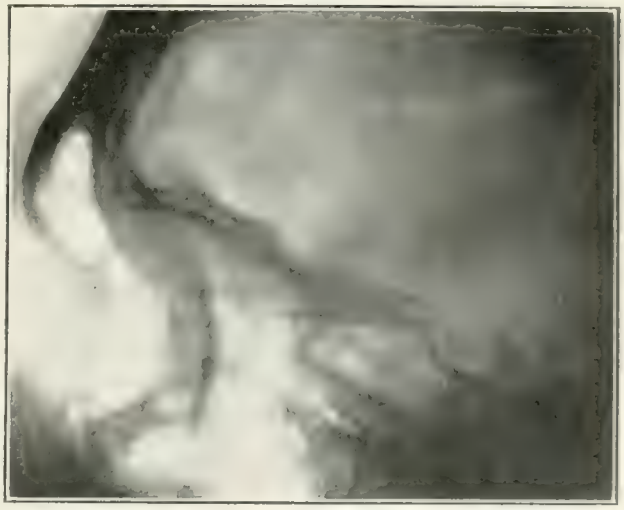
FIG. 4.—Typical overgrowth of sella turcica; male, aged twenty-four years; grand mal attacks occurring on an average of once a week.

with hypertrophy or overgrowth, which does not especially clear our subject. Cushing, however, states that sella deformations are merely of accessory value to the symptomatic manifestations, for we must realize that both extreme hyperpituitarism and extreme hypopituitarism may exist with but little if any alteration in the shadow cast by the bony encasement of the gland, which was well shown in two of his own cases which prove the correctness of his contentions.

Three types of the pathologically deformed and enlarged sellas have been distinguished and classified by Cushing. The one with which we are immediately concerned is associated with thickening of the clinoid processes and dorsum sellæ. Here the enlargement is accompanied by thickening of the walls, but, inasmuch as Cushing states this type is confined to the acromegalics and gigantics, he believes the bony thickenings are merely a feature of the osseous tendency to overgrowth which, obviously, throws no light on the condition which we shall show in some epileptics. It may be said in passing that the ordinary size of the sella in x ray plates is about ten to twelve mm. anteroposteriorly, fourteen to fifteen mm. transversely, and eight mm. in depth, although a slight magnification occurs on the x ray plate. Cushing especially emphasizes the great importance of securing not only stereoscopic x ray pictures, but also many exposures from many angles should be taken to make sure of the particular sella deformity with which one may be dealing. The same author, still speaking of pituitary disease, states that very small fossas may exist, though extensive gland disease ultimately may be found present.

It is Cushing's impression that single plate exposures should be made by focussing directly over the hypophysis, perpendicular to the sagittal plane, whereas stereoscopic exposures should be made from the side and above, so that one may look down into the fossa.

Before closing these few random remarks upon the sella formation, it may be said that the types of epileptic attacks in many of our cases have shown none of the uncinate fit type, and therefore the attacks have no bearing upon the usual forms of dyspituitarism as laid down by Cushing and others. It may be said that undue excitability of the cerebral cortex may be a sequence of posterior lobe insufficiency; if so, our cases might still be included, although they present no signal symptoms that would lead one to class them as exceptional to ordinary epilepsy of so called idiopathic type. In taking this latter view one must remember that six cases of Cushing's series had general epileptiform seizures without recognizable uncinate factors. All his six cases, however, with but one notable exception, had other symptoms pointing to dyspituitarism, thus robbing idiopathic epilepsy of any close attachment to a form of pituitary disease as we have come to know it. Cushing concludes, however, that the two may have more than a coincidental connection, inasmuch as thirteen of his whole series had epileptiform tendencies. One acquainted, however, with the possibility of convulsive phe-



no peculiarities with the exception of a slight shallowness; occurring in an epileptic aged twenty-one years; slow pulse, low blood pressure, 90 to 100; grand mal attacks since fourteen years of age, occurring about once a month.

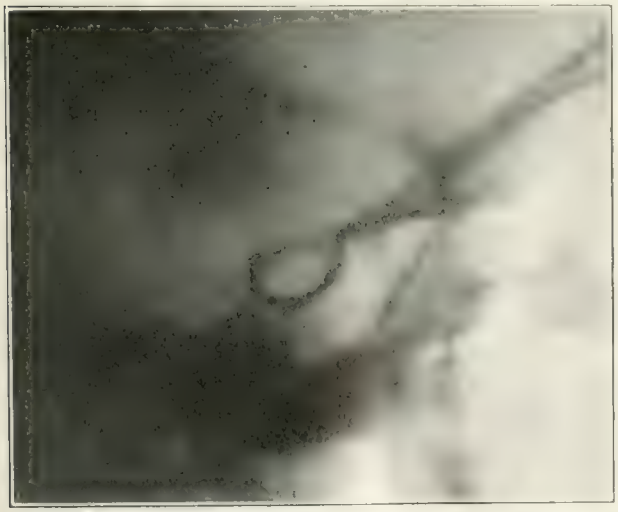


FIG. 5.—Typical overgrowth [illegible] male, [illegible] twenty-five years; epilepsy began at [illegible] grand mal and petit mal attacks occurring [illegible] once a week.

nomena following in the wake of such widely variant and bizarre cerebral disease as they do, is not so greatly impressed with the association of the two diseases as one otherwise might be.

Finally, one may say that the circulatory disorders in epilepsy shown frequently in slow pulse, vasomotor stasis in the extremities, and, in my experience, an invariably low blood pressure when arteriosclerosis is not advanced, the tendency to obesity and a ravenous appetite may make one pause before excluding the *possibility* that there may be *some* association between epilepsy and a marked disturbance of the pituitary body, and that it may yet be established that pituitary disease is sometimes found to have a more or less bearing upon certain types of epilepsy in some of its broader and more general manifestations. Certain it is that in so mysterious a disease as epilepsy we have need of the widest possible study of its causation.

84 East Fifty-sixth Street.
480 Park Avenue.

ALCOHOLISM IN RELATION TO THE HEREDITY OF EPILEPSY, CONSUMPTION, AND OTHER NERVOUS DISEASES.*

By Thomas J. Mays, M. D.,
Philadelphia.

In these piping times of infection and contagion, when every disease is supposed to give reverent thanks for its existence to a specific microbe, and when heredity as a cause of disease is relegated to a decadent background, and is condescendingly referred to as a possible factor in the genesis of a few diseases, it may seem to be a bold and presumptuous undertaking for one to come forward with the proposition, that heredity is a more powerful factor in the propagation of our chronic diseases than any other cause.

This statement is not intended to imply that disease is transmitted bodily from parent to child, but merely that the forces which are generated by the disease of the parent, impart an abnormal tendency and impose a greater susceptibility to the same disease in the offspring. Every individual is probably burdened with some diseased heredity, which predestines him to move to the grave in a direction varying from that taken by another laden with a different form of heredity. Thus some suffer from a rheumatic tendency, some from an insane diathesis, some from a consumption trend, and others from a cancerous burden, showing that heredity has a manifold relation to disease.

Heredity has been defined by the younger Darwin as "racial memory," or it may be said that heredity is the function which transmits normal and abnormal impressions from one generation to the next: and the mechanism of this function lies mainly in the brain and nerve system—the one organ that is specially adapted for the reception and registration of impressions, whether normal or abnormal. On account of the great sensitiveness of this structure "racial memory" must not only become cumulative, more powerful and persistent in every succeeding generation, but the diseases which are engendered by it must increase or decrease proportionately with the increase and decrease of abnormal impressions which are made upon them by their environment. These deductions explain why mental and nervous disorders are practically absent in the lower stages of social life, and why these diseases increase *pari passu* with the growth and the development of our highly complex civilization.

Moreover, it appears that the mechanism which forms the basis of abnormal heredity has the power of changing one form of disease into another from one generation to the next. Thus, for example, alcoholism in the parent may appear in the immediate offspring as consumption, epilepsy, or feeblemindedness, and *vice versa*. Let those who have any doubts on this point cast a retrospect over the histories of consumption in which there is an absence of a family trait of that disease, and it will frequently be found that either an immediate or not very remote relative was addicted to alcoholic excess, or suffering from some other neurotic condition.

In view of this transmutation process it is aside of the mark to conclude, because the disease that is found in the offspring is not present in the parent, that there is no hereditary influence at work. The affection in the child in such instances is the morbid equivalent of that of the parent, and may be called indirect heredity. Of such metamorphosis between cause and effect we have many examples in medical literature. Thus, Maudsley says, "when the morbid neurosis is active and gets distinct morbid expression, it may manifest itself as paroxysmal neuralgia, epilepsy, mental derangement, or in diabetes and phthisis." (*Pathology of Mind*, p. 113). Van der Kolk states the fact that phthisis and insanity are known frequently to alternate or coexist in the same family, and suggests whether we might not admit the existence of a phthisis excentrica, whose first cause might be sought in an irritated condition of the higher nerve centres in the medulla oblongata (Atrophy of the Brain, *Sydenham Publications*, xii, p. 170).

Case I. Female, aged sixteen years. Insane and epileptic for eight years. Her eight paternal grand uncles and great aunts died of phthisis, and her paternal grandfather was epileptic and neurotic. (Mosher.)

Case II. Male, aged forty-eight years, a dipsomaniac, whose mother and two maternal aunts died of consumption. His maternal grandfather drank to excess. (Crothers.)

Case III. Male, aged forty-two years, addicted to alcoholic excess. His mother and two sisters died of consumption, and *her* grandfather used spirits to excess for years. One paternal uncle died from the effects of excessive drink, and another from consumption. Another paternal uncle died from phthisis after drinking hard for years. (Crothers.)

Case IV. Female, adult, suffered from consumption. Her brother and sister died of the same disease. Her father and a number of her relatives were alcoholics. (Grasset.)

Case V. Male, drank to excess after middle life and died aged sixty-one years. His wife was a strong, healthy

woman and lived to be eighty years old. They had eight sons. Six died of consumption under the age of forty-five years, one was accidentally killed, and another died from the excessive use of spirits. One daughter died of consumption, and the other in childbirth; and both left four children; two became inebriates, and two were eccentric and died of consumption. Of the children of the eight sons only ten grew up to manhood; four died from excessive drink, three of the six remaining died of consumption, and two others died as nervous invalids in middle life; the last one, a physician of eminence, had become an inebriate, and was the only surviving member of the whole family. (Crothers.)

CASE VI. Z., who early fell a victim to drink, married a vigorous healthy woman, with whom he had three sons and three daughters. Two of the sons contracted the drink habit, and two of the daughters died of consumption. The other daughter married a farmer who was healthy and of good heredity. After the birth of their eleventh child the father died of remittent fever. Of these eleven children—five daughters and six sons—all the daughters and two sons died of consumption, two of alcoholism, and two escaped both diseases. (Schenck.)

Von Bunge constructed a percentage table concerning the prevalence of consumption and nervous diseases and psychoses in the children of families, in which the fathers used alcohol abstemiously, moderately, immoderately, and excessively. In one hundred and forty-nine families the fathers used alcohol abstemiously, and there existed among their children 8.7 and four per cent. of consumption, and nervous and psychic diseases respectively. In one hundred and sixty-nine families, in which alcohol was used moderately by the fathers, the children were afflicted 10.7 and 6.5 per cent. of both diseases respectively. In sixty-seven families in which alcohol was immoderately consumed by the fathers, the children had 16.4 and six per cent. of both diseases respectively. And in sixty families in which the fathers drank excessively, the children suffered to the extent of 21.7 and twenty-five per cent. of both diseases respectively. In other words, the children of alcoholic fathers are from two hundred to two hundred and sixty-five per cent. more liable to consumption; and from three hundred to six hundred per cent. more prone to nervous and psychic diseases, than those born of abstemious fathers (*Virchow's Archiv,* clxxv, p. 185).

CASE VII. C., aged twenty-six years, an epileptic, temperate all his life; his father and mother were healthy, but he had four epileptic brothers, three of whom were insane. His maternal great grandfather was an alcoholic, while his maternal great grandfather was healthy. His maternal grandfather was an alcoholic, and her maternal grandmother was healthy. His paternal grandfather was healthy, but his paternal grandmother was an epileptic. The father had one brother who was an epileptic, but had three sisters who were healthy, yet four children of the latter had four epileptic children. (Sinkler.)

In connection with this it is of special interest to refer to the collection of 348 family histories made by Dr. David F. Weeks, which he published under the title of *The Inheritance of Epilepsy,* and which shows the intimate relationship between epilepsy and a number of chronic disorders. Of the members of these families thirteen, or 3.75 per cent. were affected with insanity; one hundred and five, or 33.47 per cent., with feeblemindedness; seventy-seven, or 22.22 per cent., with epilepsy; ninety-four, or 27.16 per cent., with alcoholism; and fifty-seven, or 16.47 per cent., with pulmonary consumption. The first four diseases admittedly belong to the neurotic class. That pulmonary consumption is not less a member of that class is abundantly shown in the evidence which is presented in this paper, and which may be corroborated from many other sources.

Similar evidence is also comprised in the *Nineteenth Annual Report of Craig Colony for Epileptics in New York State* for the year 1912. It is shown there that of the two hundred and twenty-seven cases which were admitted during the year, heredity existed in one hundred and forty-two, and was distributed as follows: Epilepsy, forty-three times, or thirty per cent.; alcoholism, forty-six times, or thirty-two per cent.; pulmonary consumption, thirty times, or twenty-one per cent.; insanity, eleven times, or seven per cent.; migraine, ten times, or seven per cent.; feeblemindedness, three times, or two per cent.

Leaving out of consideration cancer, rheumatism, Bright's disease, blindness, etc., which are also mentioned in the list of hereditary influences, but only to a very slight degree, we have epilepsy, insanity, migraine, and feeblemindedness as undoubted hereditary factors in the causation of epilepsy: all four of which existed sixty-seven times, or to the extent of forty-three per cent.; while on the other hand alcoholism and pulmonary consumption are given as hereditary causes of epilepsy seventy-six times, or to the extent of forty-nine per cent. In other words, these figures indicate that the latter are more powerful hereditary causes of epilepsy by six per cent. than the former.

Moreover in the same report are given the causes of the deaths that occurred during the year, the total of which was one hundred and thirty-six. The only causes which can be ascribed to diseases of the brain and nervous system are exhaustion from epilepsy, twenty-six; apoplexy, four; and softening of the brain, two; a total of thirty-two, or sixteen per cent. of the whole; while pneumonia, pulmonary consumption, and pulmonary edema are charged with sixty-six deaths, or forty-eight per cent. of all the causes of death.

The same preponderance of deaths from pulmonary as against brain and nervous diseases was also found on the post mortem table according to this report. Thus out of the fifty-one bodies on which autopsies were held, in only fourteen, or twenty per cent., was death found due to apoplexy, pachymeningitis, atrophy, softening, cyst, glioma of the brain, and microcephalus; while in thirty-seven, or fifty-four per cent., death was laid to the door of pneumonia, pulmonary consumption, edema, congestion, and pleurisy.

From what has been said so far it is clear that if one idea stands out more prominently than another, it is that the fabric of alcoholism and pulmonary consumption is more frequently transmuted into epilepsy and other nervous disorders, by that mechanism which we know as heredity, than is true of all other so called nervous disorders. This process may require more time than is allotted to two successive generations, as is the case with epilepsy frequently, but its final impress tends in the same direction.

In conclusion, the data given above naturally lead to an inquiry into the general pathology of epilepsy in relation to heredity. Is this disease dependent on a structural lesion, or is it a functional

disorder without any visible morbid change? These are questions of practical moment. For if epilepsy is dependent on organic defect, it would tend to become more permanent in successive generations, and more difficult of eradication, than if it was of functional character. Obviously on these points we must not speak with too much positiveness, for apparently there are very few morbid evidences which mark the pathology of this affection. Yet, judging this disease from an exterior standpoint, i. e., from its behavior and manifestations, it does not seem possible that it is the result of structural nerve change. If this is true it will be hard to account for the fact that in comparatively few minutes the most violent paroxysms are completely reversed, and the patient is in apparent health again. Such a sudden metamorphosis would hardly be possible if the disease were due to organic change; nor could we account for the sudden and permanent disappearance of epilepsy without known cause in persons subject to it for many years. It would seem then that the sudden and voluntary disappearance of epilepsy, and the absence of any discoverable morbid lesion, are strong indications that the disease is largely dependent on functional and transitory loss of coordination of the nerve centres in the medulla oblongata. Such a view is also of great significance from a therapeutic view, since it gives us hope for believing that this apparently stubborn disease is, after all, not so difficult of relief and eradication as one might be led to infer.

1829 Spruce Street.

THE TREATMENT OF TRAUMATIC RUPTURE OF THE URETHRA.

By Charles Greene Cumston, M. D.,
Geneva, Switzerland.

The walls of the urethra are composed of two structures, the one internal—the mucosa, the other external formed by the musculosa. However, this simplicity in structure does not exist in all the portions of the canal. In the prostatic portion the muscular layer is dissociated by the glands of the prostate, and in the spongy portion this same layer is penetrated by a network of bloodvessels which transform it into an erectile tissue. These variations in structure explain the various interpretations given by different writers relative to urethral lesions, but in practice and purely from the anatomical point of view only three types of rupture can be conceived, namely, complete, incomplete, and interstitial. In the latter only one of the structures is involved, either the mucosa or the musculosa, so that the integrity of the canal persists. If the mucosa is the seat of the lesion there will be hemorrhage from the urethra, while if the musculosa alone is involved there will be a hematoma of the perineum.

In complete and incomplete rupture both structures are involved, but in varying degrees. In complete rupture there is section of the canal in its entire circumference, while in the incomplete form a bridge of tissue exists uniting the anterior and posterior urethra at the point of traumatism. I shall not consider interstitial rupture as it is usually localized in the penis; and its treatment is far simpler than that of the other types which form the subject of this paper, which require immediate surgical interference necessitated by the serious symptoms present.

In complete rupture the lesion involves the entire circumference of the urethra so that the canal is divided into two trunks, one anterior, the other posterior. The latter is retracted on account of the elasticity of its tissues, so that the space separating the two ends of the canal may attain as much as from two to four centimetres. Such ruptures are particularly the result of a fall astride on some hard object or of a fracture of the pelvis, and occur most frequently in the bulbous or membranous portions of the urethra. Following the rupture of the walls, blood first escapes by the meatus, then fills the urethral canal with the ultimate formation of clots which obstruct its lumen, giving rise to temporary retention.

While this is in progress the blood slowly infiltrates the surrounding structures, forming vast collections and thus causing detachments of the structures composing the various anatomical layers of the perineum. Then later on, when the patient tries to micturate, the urine in its turn penetrates these foci, bringing about inflammatory processes, urinary abscess and fistulæ.

When one incises the foci of contusion in the perineum, the ends of the urethra will be found separated, irregularly torn, the mucosa crumpled up and retracted so as almost completely to obstruct the lumen of the urethra. Between the two trunks formed by the section of the canal there exists a cavity filled with clots, sometimes prolonged to a considerable distance toward the scrotum and ischiorectal fossæ, by detachment of the structures.

From the influence of the traumatism it may happen that the two ends of the ruptured canal will be deviated from the median axis that they normally occupy, and it is just this abnormal situation that may explain the difficulties and unsuccessful attempts at catheterization which are so frequent in cases of this kind. Fortunately, these severe cases are not frequent, and in the majority the lesion is incomplete, that is to say, the rupture involves only one half or less of the urethral circumference, and as there exists a tongue of tissue uniting the ruptured canal, retraction of the two ends is prevented.

It is also by means of this bridge of healthy mucosa that a prudent passage of the catheter with its tip pressed against the upper urethral wall will allow the surgeon to introduce the instrument into the bladder. Now, although in incomplete rupture catheterization is usually successful, such a result is absolutely impossible in complete rupture and necessitates some surgical interference. The merits of the varying technic advised and employed we will now discuss.

The use of the catheter in these cases is dangerous, and Kauffmann's statistics are conclusive on this point. Out of forty-four cases of urethral rupture, catheterism was accomplished in twenty-two, or fifty per cent. Of these patients, nineteen recovered and three died, or a mortality of 14.3 per cent. In the twenty-two other cases the temporary catheter could not be retained on account of intercurrent complications, viz.: Three cases of infiltration of urine; nine cases of perineal abscess;

ten cases of vast phlegmonous abscess; fatal complications in five patients. However, in cases which appear slight, if an incomplete rupture is supposed to exist, the surgeon may attempt catheterism on the condition that it is conducted with great prudence and not persisted in if careful efforts prove of no avail. But how is it possible to know if one is dealing with one of these fortunate cases in which the catheter easily passes the seat of the rupture and enters the bladder? Clearly there is no sign of any certainty to guide one, unless it be that the trauma is slight, and given this uncertainty, it seems to me far better practice at once to resort to perineal section and do an external urethrotomy by which the focus of rupture can be immediately exposed.

The next question is, What shall be done after the rupture has been exposed? Should urethrorrhaphy be performed, or is it better simply to introduce the temporary catheter and plug the wound with gauze? Primary suture of the urethra and closing of the perineum would seem *a priori* the better method, because by closing the break in the continuity of the canal urinary infiltration should be avoided and the resulting cicatrix should be regular. However, it is only with the greatest difficulty that a good approximation can be obtained, and what is more usual, one finds the locus irregular and filled with clots and serum, while the ends of the urethra, particularly the posterior, are difficult to find in the midst of the lacerated tissues and the detached soft structures. Then, too, the urethral mucosa is in shreds and puckered up, making it difficult to recognize. In rupture of the posterior urethra especially, the posterior end is far up, back of the pubis, and to detect it retrograde catheterization must generally be resorted to.

The difficulties are not over when the two ends of the urethra have been found. In the cases of rupture which we are considering, complete section of the urethra has usually occurred, and the space between the two ends of the canal is considerable and the posterior—the membranous urethra—is quite solidly fixed in place and difficult to mobilize sufficiently to bring it in contact with the anterior end. Then, again, in fractures of the pelvis complicated with urethral rupture the violence of the trauma is usually very considerable, and in these cases the dislocation or diastasis of the joints or fracture of the pelvic bones produces a deviation of the posterior end of the urethra added to the lesions produced by the contusion.

Thus, to the difficulties arising from the distance separating the two ends of the urethra and the deviation of the posterior end, are added lesions resulting from the contusion, and in these sloughing tissues sutures have little chance of successfully holding the soft parts in place, as their vitality is greatly reduced. It is true that a careful evening of the urethral ends and excision of the useless portions can be done, but it is a difficult matter to distinguish between dead and living walls, so that there is danger of resecting so much of the canal that approximation of the ends may become impossible.

In order that the sutures shall hold, one must have an aseptic urethra and urine, and all will admit that a urethra pure of bacteria is a *rara avis*. Rupture is more frequent in adults, and in them the canal has often been the seat of various forms of urethritis, above all gonorrheal, and sometimes the upper urinary tract is not free from infection. Then, too, the urethra is normally inhabited by certain bacteria whose virulence becomes increased by the fact of the trauma. Bacteria may also be introduced if catheterization has first been attempted without due aseptic precautions. The temporary catheter itself provokes by its presence alone a special form of urethritis. It irritates the canal and a discharge of pus results, and what is more, the catheter permits a certain amount of urine to flow alongside between it and the walls of the urethra, so that sutures rarely hold under these circumstances and there is danger of infiltration of urine into the perineum. The difficulties encountered in suturing the urethra and soft structures are quite enough to permit one to foresee that the results will be far from brilliant, and usually within a few days one or two stitches will have given way, an infiltration takes place at this point, the temperature goes up and a periurethral abscess develops. This has to be opened up.

Perineal fistulæ persist for a long time, and suppuration goes on protractedly in the irregular tracts created around the urethra. Cicatrization is delayed, and fibrous nodules and infiltrations develop which cause stricture of the urethra. Often the result of the sutures appears excellent; the perineum is supple, but this does not prove that the urethral sutures have held. In a total of thirty-five cases collected by Nogués, Pasteau, and Iselin there were only two cases of primary union by first intention. In all the other cases, either while the temporary catheter was in place or after it had been removed, urine escaped by the perineal wound, showing that there was more or less giving way of the sutures.

In the *Birmingham Medical Review* for December, 1891, Gilbert Barling records a case of ruptured urethra in the membranous portion. The two ends were separated to the extent of an inch and a half, but were brought together and sutured over a temporary catheter. Eighteen days later the patient died from pneumonia, and autopsy showed that the urethral sutures had given way. Savariaud's case was that of a child eight years of age in whom symptoms of infection developed after suture of the urethra, so that the perineal wound had to be opened up to allow the urine to escape.

The ultimate results are difficult to appreciate, as these patients are usually lost sight of. In six cases of immediate urethral suture recorded by Pasteau and Iselin there was found after several years a very tight stricture in one patient, in two moderately tight strictures, and in three patients normal urethræ. These six cases were those where the sutures held. It would seem that urethral suture is indicated in incomplete ruptures where the upper wall has remained intact, and where the temporary catheter has been introduced a complete approximation may be secured. I am more or less an advocate of suprapubic drainage in these cases, as this does away with any possibility of urinary infiltration and prevents the urine from coming in contact with the sutures.

As to urethral suture without closure of the perineal wound, it may be said that the same rule applies to this method as for total suture of the urethra and perineum. The immediate results of the former are excellent, because the perineum being open, free drainage results and retention, abscess formation or fistulæ do not arise. Therefore this technic seems appropriate in cases where the tissues are infected and where there is much contusion. But even in these cases I doubt greatly if the urethral sutures will always hold, because they are in contact with an infected focus which, although well drained, is nevertheless a seat of infection. Retention does not occur, but the perineal wound continues to suppurate for a long time.

The method of suturing both ends of the ruptured urethra to the skin with secondary repair of the canal as devised by Pasteau and Iselin appears to me a difficult technic to apply to a complete urethral rupture, particularly on account of the retraction of the posterior end and the difficulty in bringing it down to the cutaneous opening in the perineum. In cases of resection of urethral stricture where the tissues are healthy this technic might apply, but we have a still better one, that of the urethral buttonhole, which I described in a paper published in the *Annals of Surgery*, May, 1913.

Let us now examine what advantages are offered by secondary union of the urethra and perineum after external urethrotomy and the use of the temporary catheter. This procedure is simple, consisting in an external urethrotomy and the introduction of a temporary catheter, and consequently does not, like the other methods, require so much surgical skill. This is undoubtedly a point in its favor, inasmuch as we are dealing with cases requiring immediate treatment, which implies the simplest and most rapid technic. It also does away with all possibility of septic retention, as free perineal drainage is assured by the large wound; and in complete urethral rupture it is, according to my way of thinking, the only rational treatment. The violence of the trauma, with or without fracture of the pelvis, the extent of damage done to the soft parts, the difficulty in finding the posterior end of the urethra, even if this can be accomplished, and above all the low vitality of the injured soft parts which are on the road to gangrene, are all conditions which seem to me incompatible with primary suture or fistulization of the urethra at the cutaneous surface. It is to be noted that consecutive strictures are no tighter than those following other procedures, and a prophylactic dilatation well carried out will compete the treatment, after which the patient is carefully instructed in the art of passing the sound himself.

To conclude, it may be said that in all cases of traumatic urethral rupture perineal incision should at once be resorted to without attempting urethral catheterism. External urethrotomy with the introduction of the temporary catheter is the only rational treatment in complete rupture with infection and contusion of the soft parts. In incomplete rupture, when there is not much contusion of the tissues, and infection is absent, immediate suture of the urethra and soft parts of the perineum is to be attempted, with derivation of the urine by suprapubic cystostomy or a urethrostomy in the membranous urethra.

WHY ELECTROTHERAPY DOES NOT CURE.*

By Albert C. Geyser, M. D.,
New York,
Professor of Physiological Therapeutics, Fordham University Medical College; Lecturer on Electrotherapy and Radiotherapy, New York Polyclinic School and Hospital.

We are confronted with two essentials. First, what is electrotherapy? Second, why does it fail to cure?

WHAT IS ELECTROTHERAPY?

In history we read about the stone age, the iron age, the steam age, while we are essentially living in the electric age. Since all the wheels of our industries are set in motion by electricity, since time and space have been annihilated by this agent, it would seem strange, indeed, had not the ingenuity of mankind turned to this agent also, for the relief and possible cure of disease. In fact, the very contrary is the truth. Altogether too much is expected and only too frequently the showy instruments and startling electrical manifestations overshadow the therapeutic possibilities. Honestly mistaken but deluded, the enthusiast under a spell of autosuggestion lauds this agent to the exclusion of all else.

A few unexpectedly good results cause the tyro, with reckless abandon, to proclaim his cures by electrotherapy as bordering on the marvelous. Yet with all this, it must be admitted that electricity in some form or other applied to living tissue is bound to produce some effect. When 2,000 volts are used with seven amperes for some seconds, life is extinct. This we term electrocution. When all animation has been suspended by suffocation or an overdose of an anesthetic, by passing the direct current interrupted ten times a second with only five to six milliamperes through the patient's brain and spinal cord, resusitation or reanimation frequently takes place. The application is the same but the dose different. It only requires five to ten milliamperes to bring to life again, while it takes 1,000 times that amount to kill.

Between these two extremes, electrocution on the one hand, and reanimation on the other, lies the great field of electrotherapy.

I will not take up your time in a futile attempt to explain what electricity is, but rather try to bring to your notice the therapeutics of it. If we carefully regulate a patient's diet as to his particular needs in health or disease, we are using dietotherapy. If drugs are administered with a view of affecting some change in the economy, we term that drug therapy. If a patient requires the various effects of water upon his system, we make use of hydrotherapy. By the same analogy, if we apply some one or more of the various electric modalities, we are attempting electrotherapy. In this way, we have come to recognize such therapeutic procedures as massotherapy, serotherapy, climatotherapy,

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thermotherapy, vibrotherapy, psychotherapy and a host of others. The existence of *all* of these various therapeutic measures is a *sure* indication that there is among them all not one that can be relied upon as a curative agent to the exclusion of one or more of the others.

Once in a great while, some acute manifestation may be apparently subdued with one of these therapeutic measures. As a rule, each one is just one link in our therapeutic chain, and only too frequently it happens that the chain is neither strong nor long enough. Let us, then, view electrotherapy as just one link in the chain. It may be true that this one link is stronger than any one other link, yet it is but one link. The indication for, or the choice of, one or more of these measures depends entirely upon the particular reaction we wish to bring about. If a patient is suffering pain from the passage of a renal calculus, and pain is the only disturbing factor, morphine is the remedy; therefore drug therapy. If a patient is suffering pain in the supraorbital or any other nerve as a result of toxemia, who would think of morphine? Any one of several electric modalities will inhibit the local pain manifestation, but drug therapy and hydrotherapy are essential for their eliminating effects, while dietotherapy will correct and prevent the condition. Here electrotherapy alone would be a failure. In cases of motor paralysis, either of central or peripheral origin, we are confronted with a loss of a physiological function. It is an admitted fact that we know of no other agent than some form of electric current that can equal the artificial performance of this lost physiological function. Electrotherapy, therefore, is indicated merely to prevent the resulting atrophy which would occur from nonuse, but electrotherapy alone would be a failure.

From these illustrations, it will be seen that we have occasions where electricity in some form is the proper therapeutic procedure and so establish the first essential, the necessity for, or the logical use of electricity in medicine, which is electrotherapy.

WHY ELECTROTHERAPY FAILS TO CURE.

The second proposition, why electrotherapy fails to cure, is somewhat more complex. As has been stated, electrotherapy of and by itself is seldom enough to establish a cure, even though indicated in any given case.

We recognize in electrotherapy thirty or more modalities, each one produced in a specific manner, and each one capable of producing upon the body specific reactions. This at first thought seems confusing, hence the difficulty in selecting the proper modality under given conditions. As an analogy let us take the crude drugs, opium and mercury. From the one crude drug opium we have no less than forty-one derivatives. Mercury furnishes us with twenty-nine specific preparations.

To say that opium or mercury is indicated is far from practising therapeutics. Where the chloride of mercury is indicated, the bichloride may be contraindicated. Where the tincture of opium may be indicated, morphine is certainly contraindicated. Again, the dose of either must vary even under similar circumstances in different individuals. Exactly in the same manner, and with the same care with which a certain drug is selected and the dose regulated, so must the particular electric modality be selected and graded as to dose and length of time of application. Either the inability to possess the various modalities or the noncompliance with the rule of selecting the proper modality are prime reasons why electrotherapy fails to cure. It becomes apparent at once that he who would use electrotherapy must be in possession of all the means for creating all of the various modalities. He must be familiar with the physical and physiological properties of these means. Above all, he must know the reactions produced by each modality under all the varying circumstances of disease conditions. Unless all of these essentials are present, electrotherapy is a makeshift and failure to cure is the result.

SELECTION OF THE INDICATED MODALITY.

How shall we arrive at a proper selection? Let us take a case of neuralgia to the electrotherapist for the local treatment. The electrotherapist does not treat tic douloureux, sciatica, supraorbital or brachial neuralgia. On the contrary, he sees before him a patient who presents the symptoms of pain in some nerve. He has no stereotyped treatments for the disease, but selects his modality according to the reaction desired in that particular patient. In considering *neuralgia* as a pathological entity about to be treated, it is perhaps better from the very beginning to adhere strictly to that term. By so doing, we escape at once all the various controversies concerning this disease. We are dealing with a pain in or about a certain, more or less localized nerve trunk and its immediate branches. While a true neuritis differs in its etiology from neuralgia, clinically, in many cases, we encounter great difficulty in differentiating the two. In the application of electrotherapeutics, the results are as satisfactory in the one as in the other, so long as we are dealing primarily with the local treatment of the painful area. If we consider in general all of the various therapeutic measures, we are forced to the inevitable conclusion that we are possessed of only two kinds or groups of agents; they are either sedatives or irritants. In the use of electrotherapy we are fortunate in possessing so many different modalities that we are in a position to choose for our local application either a sedative or irritative measure. The failure in the differentiation of these modalities, and the improper selection of suitable conditions for them, is the one great source of disappointment in our therapeutic results. We will consider our electrotherapeutic modalities, then, under two headings: The irritative or revulsive method, and the sedative, irritability reducing method.

THE IRRITATIVE OR REVULSIVE METHOD.

Under this heading belong all of those electric modalities which are capable of causing more or less energetic stimulation upon the skin surface, especially in the terminal filaments of the nerve endings. The faradic high tension current applied by means of the tinsel brush discharge is the one in common use. Of course, it must be admitted that the higher tension currents, such as the

static sparks, static wave current, or the high frequency discharges are better in efficiency as they are higher in tension. In fact, the most efficient of all these irritative measures are the short sparks drawn from a metallic conductor from some source of high tension apparatus. There is no doubt that all of these methods very frequently show most brilliant results in neuralgia, especially of the upper and lower extremities. It is equally true that all of these methods have utterly failed. There must be an underlying principle as to why they have given such brilliant results at one time, only to be utterly disappointing at another.

We are familiar with what we mean by counterirritants and counterirritation. It is a superficial and artificially produced inflammation, in order to exercise a good effect upon some adjacent or deep-seated morbid process. In medicine we have such agents as rubefacients, and vesicants. Whatever may be accomplished by such agents can be done by the above named electric modalities, with this very important difference; the applied dose and the resultant effect can be almost mathematically calculated. Properly to understand the action of counterirritation, we must appreciate the fact that when the central nervous system recognizes pain from somewhere in the economy, the moment that a greater irritation is set up at another peripheral point, the original pain ceases to be recognized. The artificial irritation is now felt instead and thereby a certain rest is established for the original pain. We must also recognize the fact that the system acquires under certain circumstances what might be described as the habit of having or interpreting pain. The more successful and the more often this habit is interfered with, the easier it is for the central nervous system to forget, as it were, the original chronic pain and to substitute the pain artificially produced by counterirritation. This new and acute pain being of a different character, is much easier to bear, may be graded to suit the individual case, and, what is of greatest importance, will cease to exert its painful influence at our pleasure. In neuralgia this might be interpreted that the counterirritation produced upon the terminal filaments caused the pain in the main trunk, which was created by some pathological irritation, to cease.

One might come to the conclusion that the original pain would subside only so long as the counterirritation exerted its influence. This we know is not the case. In fact, we know from general medicine that after the application of a mustard plaster, painting a part with iodine, or blistering over a painful point, the pain, for which one of these treatments was instituted, is permanently abated. It is a very simple matter to demonstrate after the application of some one of the electrical modalities, that there is a decided change in the pain sense appreciation of the area treated. These changes last from a few hours to as many days. Such tests show that all of the irritative or revulsive electric applications cause a long continued hypersensibility. Theoretically, we can infer that, if the terminal filaments of a certain nerve remain for hours in a state of hyperexcitability, which is appreciated by the central nervous system, the pathological irritation from the main branch may be held in abeyance for a greater or lesser time according to the reaction produced. Now, we can also formulate the rule that, in all cases of neuralgia where the skin overlying the painful area is in a hyperesthetic condition, these and all other methods of counterirritation are absolutely contraindicated. Such cases, where the pathological irritation has invaded the terminal nerve filaments can only be made worse, because the hypersensibility is markedly increased.

Another point of interest is the fact that the treatment with the faradic current can only be made with the tinsel brush and never with moist sponge electrodes. These latter electrodes allow the current to penetrate into the deeper tissues, and that is what we wish to prevent. It is our desire to cause by counterirritation of the unaffected terminal filaments a revulsive effect. The deep penetration of the current may be further prevented by using the higher tensions and having the skin surface as dry as possible. A drying powder over the surface will cause the skin to become a very poor conductor and so all of the faradic counterirritation is spent upon the surface of the skin. The rule must be observed, never to attempt to treat an acute case of neuritis or neuralgia by counterirritation. Never treat a chronic case without first testing the sensibility of the skin. Any case showing hypersensibility is a contraindication. All cases showing a normal or subnormal sensibility are suitable for this method of treatment.

THE SEDATION OR IRRITABILITY REDUCING METHOD.

We are at once confronted with the phenomenon that the pain has invaded the terminal filaments in the skin; this may be primarily or secondarily. Any agent or method of therapeutics must not only be incapable of further increasing the hypersensibility, but, on the contrary, it must possess the necessary qualifications for diminishing the same.

When an animal has been tetanized with strychnine and the positive pole of a galvanic current is placed over the peripheral end of a nerve, while the cathode rest on the spinal origin of the same nerve, we have the negative phase of electrotonus or anelectronus taking place. The galvanic current is traveling against the normal nerve current. A physiological inhibition of nerve transmission is thus produced. Interference with the transmission causes a loss of response or failure to respond to the toxemia of the strychnine, and the tetanus ceases in that particular nerve only.

When a patient complains of noises and ringing in the ears, after taking quinine, place the positive pole of the galvanic current in both ears, while the negative rests in the nape of the neck; pass the current gradually increased to the point of tolerance for ten minutes, and all noises cease for one or more hours. Place the anode over the ulnar nerve at the wrist and the cathode at the back of the neck. Pass a current of from ten to fifteen milliamperes for ten minutes and the little finger upon that hand seems almost anesthetic to needle pricks. Such demonstrations have warranted us in assuming a similar inhibition of hyperesthesia in a sensory nerve.

The question has frequently been raised whether such effects are the result of electrotonus or whether they are due to the resulting electrolysis. Scientifically it would be well if this question could be answered. Therapeutically and clinically, the fact remains and is not worth the splitting of hairs.

The older method of using small sponge electrodes and correspondingly small milliamperage has given way to the use of very large electrodes and milliamperage. Some authors have maintained that there is no difference in the strength of the current used so long as the per square area of the electrode is the same. In other words, if five milliamperes are passed through an electrode, one inch square, the local effect is the same as though fifty milliamperes were passed through ten square inches of surface. Mathematically, such a statement is correct; physiologically, it is erroneous.

A sudden interruption of these currents will at once demonstrate the difference. This galvanic current is indicated in neuritis especially when the stereotyped signs such as muscular atrophy and disturbed reflexes are present. If, for any reason, the galvanic current is not obtainable, the faradic may be used, but the closest attention to detail of technic is necessary.

Apply large, moist electrodes, beginning with a hardly perceptible current from the longest winding; after one or two minutes gradually increase the strength until appreciated by the patient. It is necessary to wait until all sensation to the current has been lost, then gradually increase again and again until the maximum current can be tolerated by the patient. It will be found that the pain conducting power of the nerve has been abolished.

Another method is the use of the static brush discharge. A suitable electrode capable of giving a blue pencil discharge without sparks is employed over the hypersensitive area, gradually approaching the area closer and closer until quite a hot spray can be tolerated. This static spray obtunds the terminal nerve filaments by the rapid bombardment.

Still another method is the employment of the high frequency current for diathermic effects. When this current is employed, we begin to lose sight of any and all electrical manifestations. Here we have a current that changes its direction perhaps several million times a second. The result of this arrested motion is heat in the parts through which it passes. Apply two metal electrodes to the shaven flanks of a rabbit, allow 1,000 milliamperes to flow for three minutes; a thermometer will give the rectal reading of 106°F. Apply one electrode in front of the ear of a patient, the other on the chin of the same side. In five minutes after passing 750 milliamperes, the mouth temperature on the opposite cheek will register 100°F. and over. From time immemorial heat has been used to alleviate pain. When we add to this application of heat the fact that the externally applied electrodes remain cold while the tissues between the electrodes can be heated four or five degrees above the normal, we have a rational explanation why the diathermic method relieves such painful conditions as tic douloureux.

Electrotherapy, therefore, must be viewed as one single link in our chain of therapeutics. Whenever this one link is made use of instead, or to the exclusion of the other indicated links, electrotherapy must fail to cure.

Electrotherapy is understood by few, misunderstood by many, and underestimated by everybody. "'Tis true! 'tis pity! And pity 'tis 'tis true!"

231 West Ninety-sixth Street.

THE DIAGNOSIS OF EARLY CLINICAL PULMONARY TUBERCULOSIS.

By Louis Shalet, M. D.,
New York,
Attending Physician, Tuberculosis Clinics, Department of Health.

This paper is written with the aim of directing attention to the radical difference between the diagnosis of pulmonary tuberculosis and that of most other infectious disease. In the latter, the question is whether the infecting agent and its consequent anatomical changes are present or not. This once established, the disease is diagnosed accordingly. The clinical symptoms accompanying it serve to direct attention to the anatomical changes, thus completing the diagnostic "picture." Not so in pulmonary tuberculosis. As is well known, the vast majority of the adult human race are infected with the tubercle bacillus, and as very many of these have macroscopic pulmonary lesions in the various stages of tissue repair as proved at autopsy, the mere demonstration of the finer physical signs of pulmonary tuberculosis is in itself (aside from a matter of record) by no means sufficient to diagnose a case as actively tuberculous, requiring treatment unless the clinical symptoms are also present. In a measure one might even compare the very fine points in physical diagnosis of pulmonary tuberculosis brought out by many observers from time to time, to the extremely delicate tests for albumin in the urine which detect as little as one in 20,000 and less. This test is altogether too sensitive for clinical use, as a great number of practically normal people would show a slight amount of albumin. It will thus be seen that beyond a certain point the more delicate the methods of physical examination of the lungs and the more hair splitting their interpretation, the more they will tend to defeat their object. Thus, the diagnosis of pulmonary tuberculosis reduces itself to the anatomical, and clinical.

The anatomical diagnosis of pulmonary tuberculosis does not concern us here, aside from the fact that it is numerically out of proportion to its clinical importance. It is a common experience in making a routine physical examination of the chest to find slight retraction, dullness, and harsh prolonged breathing at one apex, usually the right, or dullness and occasional "fleeting" râles in one base, usually the left. In all probability this indicates a quiescent tuberculous lesion of no importance in itself, because of the total absence of concomitant clinical symptoms. It will thus be seen that many of the fine points in the anatomical diagnosis of pulmonary tuberculosis, compared to the clinical symptoms of the same, are of less value than in almost any other disease, so that while one would not diagnose clinical pulmonary tuberculosis without physi-

cal signs in the lungs, there very often are such signs in the absence of clinical pulmonary tuberculosis. In fact, nearly all of the physical signs of pulmonary tuberculosis from the finer differences in breath sounds to rales and demonstration of cavity are commonly present in a clinically cured case, without necessarily interfering with the good prognosis. Incidentally, one might add that contrary to the usual teaching, rales never clear up over a definitely tuberculous lesion. Repeated careful examination of the same is fairly certain to elicit their presence, regardless of how long or how well the case has remained clinically cured. Although these may become less in number, smaller in size, and drier, they will never entirely disappear.

The overwhelming importance in the diagnosis of early pulmonary tuberculosis of the clinical symptoms over the physical signs being established, it remains to enumerate the more constant ones of the former. This is conveniently done by their natural division under the headings of systemic and respiratory symptoms. In the persistent absence of tubercle bacilli from the sputum (which may be found at any time) these symptoms, in the order of their occurrence, are as follows:

Systemic.		Respiratory.
Weakness.		Cough.
Neurasthenic manifestations.		Expectoration.
		Change of voice.
Anorexia.		Dyspnea.
Constipation; diarrhea.	sometimes	Hemoptysis.
Loss of weight.		
Pulse, blood tension, hyperidrosis, etc.		
Night sweats.		
Fever.		

It is not to be understood, however, that each early systemic symptom necessarily coincides with a correspondingly early respiratory one; on the contrary, these are often independent of each other, although as a rule the systemic symptoms are much more constantly present.

While the first symptom directing the patient's attention to his condition may often be one of those placed at the foot of the above list, such as hemoptysis, careful questioning will probably elicit the other symptoms in the order of their occurrence as laid down above; but these have developed so insidiously that their presence was not suspected, least of all by the patient.

These symptoms will now be discussed in detail and in the order of their relative importance.

Hemoptysis, occurring in early and middle life, is to be looked upon as strong presumptive evidence of pulmonary tuberculosis, unless it can be proved beyond a reasonable doubt to be due to some other well defined cause, such as chronic endocarditis with poor compensation, and the various obstructive conditions to the return circulation, malignant disease of the lung, ulcerative conditions of the upper respiratory and gastric tracts, traumatism, etc. This symptom is unique in that its appearance will sufficiently frighten the average patient to drive him to consult his physician. Important as it is when present, it may not occur at all, or not until very late in the disease. A patient cannot be too carefully questioned as to its presence at a given time of his pulmonary history. It is well to vary and repeat the question several times, asking whether the symptom followed epistaxis, a visit to the dentist, etc., as patients are apt to exaggerate signs they think important and utterly ignore those of real moment.

Cough is the next single symptom of presumptive evidence of clinical pulmonary tuberculosis; any cough, with or without expectoration. All the other clinical symptoms would have to point directly away from this disease in addition to nonbacillary sputum before clinical pulmonary tuberculosis can be excluded. Even in the absence of any definitely assignable cause, such as the various forms of bronchitis, laryngitis, etc., the cough is most likely due to anatomical pulmonary tuberculosis, important only as a matter of record. The classical cough in early pulmonary tuberculosis occurs always in the morning, often at night, and after meals, particularly after breakfast, and is recurring, "nagging," mildly paroxysmal, and out of all proportion to the pulmonary involvement or amount of sputum raised. Some cough is always present, though occasionally it amounts to no more than a persistent "clearing of the throat."

Expectoration. Positive evidence of pulmonary disease of the strongest kind is furnished when expectoration is present. It is to the lungs what any discharge is to a diseased cavity, such as discharging ear, urethra, etc. No credence is to be placed in the patient's opinion that his sputum comes from the throat, the back of his nose, etc. This may augment pulmonary expectoration, but never simulate it. Often a patient will disclaim any expectoration while "hawking" and swallowing his sputum. When enough sputum can be obtained for examination, it will be found to be swarming with tubercle bacilli.

In children, cough should be induced and a smear made of the laryngeal sputum (if possible) before it is swallowed. Whatever method is followed in concentrating and staining the sputum on the slide, it cannot replace painstaking, careful search for bacilli with the mechanical stage. The devotion of one hour for that purpose to each slide is not too much. The albumin reaction in the sputum is of value in showing the presence of active pulmonary inflammation. In doubtful cases several days' sputa should be treated by the antiformin method and the sediment injected into guineapigs under proper control. This should be done by a well trained pathologist working in a properly equipped laboratory. This is the longest but the most reliable way. Aside from the presence of tubercle bacilli, there is nothing particularly characteristic of the sputum in pulmonary tuberculosis. While much has been said about the small, cheesy masses in the sputum, any one examining large numbers of tuberculous sputa will be pretty soon struck by the fact that macroscopic appearance is a very poor guide to bacillary content.

Change of voice. But little has been written about the constant change in voice production as an early sign in clinical pulmonary tuberculosis. It is often difficult to say whether it is due to the concomitant general weakness, to the unconscious sparing of a sick lung, to the catarrhal changes in the upper respiratory tract, and in about twenty to twenty-five per cent. of the cases to early tubercu-

lous involvement of the larynx. The fact remains that one will often notice in a new patient some slight "off color" quality in the voice, or else close questioning of the patient as to whether his voice is not slightly "roughened" since he has not been feeling well, compared to say six months ago, may elicit an affirmative answer.

Dyspnea in early clinical pulmonary tuberculosis is exceedingly common and is entirely out of proportion to the amount of lung involvement. Much depends on the manner of history-taking in eliciting the presence of this symptom. It is well to ask, in an indirect manner, whether the patient tires easily, whether there is palpitation of the heart on slight exertion, and at how many flights of stairs and whether there is distinct dyspnea now compared to six months or a year ago. It is probably an expression of the general toxemia of the disease giving rise along with the dyspnea to increased frequency in pulse rate, low blood tension, etc.

Weakness. That indefinite, apparently causeless deficient muscle tone is the very earliest and most constant of the clinical symptoms of pulmonary tuberculosis. Owing to its occurring at the beginning of a great many other diseases, tuberculosis is not suspected until the appearance of more definite pulmonary symptoms. This symptom occurs so early in the history of pulmonary tuberculosis that patients cannot even approximately state when it first appeared. Persistent general weakness in early adult life (twenty to thirty years) in the absence of any easily and quickly assignable definite cause should immediately cause suspicion of tuberculosis, and the patient should be minutely interrogated as to his pulmonary history.

Neurasthenic symptoms consist in absence of the customary optimism inherent in the normal state, irritability over matters of slight moment that in health are quickly forgotten, lapses in conventional politeness, loss of interest in one's occupation. These and more signs of a nervous system "nagged" by toxemia are exceedingly frequent among the early signs of clinical pulmonary tuberculosis. If the patient's confidence can be gained at the outset he will gladly tell these things himself. Much interrogation on that point is inadvisable. Close observation of the patient's manner in answering other questions will help in ascertaining the presence of this symptom.

Anorexia is a very constant and persistent symptom in the early diagnosis of clinical pulmonary tuberculosis. The patient's statement as to when (within a week) this symptom first made its appearance may be believed. At first there is an indifference to the appeal that food in season makes to the normal person; later there may be an actual aversion to nourishment and not unlike that in seasickness, particularly to fats and meats of all kinds.

Constipation. Disturbances of the bowel are exceedingly common. In the habitually constipated this may be accentuated, so as to amount in severity to almost functional paresis of the intestine, the same reacting but sluggishly to any but drastic purgatives. In those of regular bowel habits, there is often diarrhea at the clinical onset of early pulmonary tuberculosis, though not necessarily tuberculous if the subsequent history is to be believed.

Loss of weight. In a patient with good resistance and not too heavy (a not unusual combination) the loss of weight at the early clinical onset of pulmonary tuberculosis may often be trifling, not much over five pounds. The care with which a patient habitually looks after himself, however, plays a leading role in the amount of weight he will lose before seeking medical advice and proper treatment. One who takes a normal interest in his own welfare will see his physician before the clinical symptoms get too pronounced. Persistent, if slight loss in weight in an individual not now or recently acutely ill means chronic disease of some kind. It takes time to lose weight that way, and it is well to bear in mind that the commonest cause for this symptom in young adults is incipient clinical pulmonary tuberculosis.

Pulse is nearly always at eighty or over even when at rest; it may quickly rise to ninety or 100 and more on ordinary exertion. This is the reaction of the circulatory system to the tuberculous toxines. Occurring in young adults and in the absence of definite causes for the quick pulse, it is strongly suggestive of early pulmonary tuberculosis. With the other clinical symptoms, it is pathognomonic of that disease. Under this heading might also be grouped the allied manifestations of the pulse, such as low blood tension which is due entirely to the coincident increased frequency of the pulse rate, following the well known law of the faster the pulse the lower the tension. Another common disturbance of the vasomotor system in this disease, consisting in the great tendency to flush and perspire on slight or no provocation, may also be mentioned.

Night sweats, like fever, are one of the late symptoms of early clinical pulmonary tuberculosis and are also the first to leave the patient on instituting the classical treatment. It is never present alone, but may be absent when all the other symptoms are present. It differs from perspiration as seen in other conditions by the fact that it occurs at night and that the patient, on waking up, feels chilly, weak, wet, and clammy. This point should be brought out in the history. This symptom is the one commonly associated in the lay mind with pulmonary tuberculosis.

Fever is the last symptom to appear and never occurs by itself, although it may not appear at all if the case is seen and treated early enough. In a true case of early clinical pulmonary tuberculosis the fever is slight but fairly constant, not more than 100°F., though it may sometimes go up another half degree in the later afternoon. The typical subnormal temperature in the morning with the sharp rise in the afternoon, is never seen in early clinical pulmonary tuberculosis. Whenever there is low constant fever in a young adult he should be invariably and minutely interrogated as to the presence of the other early symptoms of pulmonary disease enumerated above.

SUMMARY

From the foregoing one can readily see that the importance of the clinical symptoms, compared with the physical signs, in the early diagnosis of pul-

monary tuberculosis cannot be overestimated. In the persistent absence of both the bacilli from the sputum and the more important clinical symptoms, the case should be properly treated and watched before definitely telling the patient that he is a consumptive: somewhat along the lines of beginning the treatment of syphilis before the discovery of *Treponema pallidum* and its early demonstration when the secondary manifestations were waited for, before the patient was declared luetic. Incalculable harm has been done to innumerable men and women in pronouncing some temporary indisposition to be clinically tuberculous in nature on the strength of some of the physical signs, such as localized harsh prolonged breathing, slight dullness, etc. While most likely anatomically tuberculous, it is probably an old healed lesion from which with ordinary care there is little or nothing to fear in the future (as the subsequent history will prove) and with no bearing at all on the present indisposition. It is not realized in some quarters what it means to a patient to be told by his physician that he is tuberculous, where clinically he is not and with ordinary care never will be.

The writer knows numerous cases which have been diagnosed clinically tuberculous two, five, or more years ago, owing to localized physical signs in the lungs alone, who never showed tubercle bacilli in the sputum nor presented any of the more definite symptoms of tuberculosis, such as persistent cough, weakness, or loss of weight, even while following their vocations in the city, persons who have done well since with just as many physical signs in the lungs now as they had when first diagnosed and, it might be added, as they always will have.

The more indigent and shiftless of the improperly diagnosed cases make the rounds of the public clinics and sanatoria that will take them, to the exclusion of the clinically tuberculous who need these clinics most and for whom alone they should be reserved. These people have no objection to being regarded as victims of the "great white plague" and will even put up with the fresh air part of the treatment so long as they get good food in plenty and rest, particularly rest. They quickly lose all habit of self-support and are perfectly willing to spend their long lives at the public expense.

CONCLUSIONS.

1. No patient should be declared actively tuberculous requiring treatment on the presence of physical pulmonary signs alone.

2. In the presence of some of the physical signs of tuberculosis in the lungs, but with persistent absence of tubercle bacilli from the sputum and but few, if any, clinical symptoms, the patient should be properly treated and watched before declaring him to be actively tuberculous and to require the classical treatment.

3. A patient with the characteristic clinical symptoms of pulmonary tuberculosis, is tuberculous, and should be told so and treated as such, regardless of the meagreness of physical signs in the lungs and the absence of tubercle bacilli from the sputum.

16 East Eighty-seventh Street.

PREVENTION OF INSANITY.*

By Ralph A. Goodner, M. D.,
Anna, Illinois,
Superintendent, Anna State Hospital.

It is selfevident that a thing can better be prevented if the cause is known and studied. The excitant factors and their preponderance in causing a given type of psychosis, are becoming better understood, and that is the surest guarantee that effective steps and study will be undertaken for their amelioration and prevention. I speak particularly of the acquired, preventable cases, remembering too that inherited soil is never perhaps altogether eliminated.

We are doing much good, progressively so, in caring for the insane and defective wards of our State, but we must do more to further the prevention propaganda. The work of many earnest men and women, in bringing to the public notice conditions detrimental to mankind, is bearing fruit, and interest and information concerning sociological problems is greater than ever before.

Insanity is largely a sociological problem influenced by environment and heredity, and to this I wish to call attention and suggest some measures and the necessity for prevention.

We must take the public into our confidence, and make them understand conditions and their causes, to initiate most effective steps for their amelioration. This, I believe, has not been done as regards acquired mental disease and how to prevent it, as frankly, scientifically, and elevatingly as it might have been.

We must first teach that insanity is an effect that has a given cause, and that much of it is preventable.

I will mention particularly only syphilis and alcohol as causes of acquired types of insanity, as they alone, combined, compose approximately one third of our admissions to state hospitals for the insane. The part that alcohol and other forms of intoxication play in causing crime, poverty, and insanity is well known to the public, but not so with syphilis, which is a cause perhaps in fifteen per cent. of admissions, not to mention as many cases which are treated and end fatally outside. Then the baneful influence of syphilis extends to the offspring, producing all kinds of degenerate traits, and similarly so does the poison of alcohol, each acting through the germ cells.

It is the recognition of such facts we must teach the public, also students and advocates of eugenics. The public, it is true, is indifferent to scientific truths, but when insanity in Illinois increases rapidly enough to fill a new hospital of 1,600 beds each four years, it is time for us all to strive to lessen this frightful increase, and one way is to change the average man's conception of the cause of insanity. We cannot be effective in promoting the prevention of insanity without uplifting mankind in other ways.

Nowhere is widespread education needed more than in sex hygiene in all its phases, and the awful

*Read before the Illinois State Hospital's Medical Association, October 22, 1913.

problems growing out of a long train of disasters; the time to set aside false modesty is here.

We ought to give proper recognition and publicity to well known scientific facts in connection with the whole subject of sexual immorality, especially its relation to the production of insanity, as this phase is not so well known to the public.

We must begin to realize, and make the public realize, that heredity is not the sole directing force, and give to environment its share in causing much of our evil of all kinds, to get their best attention. Environmental influences do not increase, but only perhaps modify original endowment, so far as inheritable types go, but it has much to do with our acquirable forms.

The study of human heredity gives us the applied science of eugenics, which occupies the centre of the stage now, but with our public let us study acquired forms too.

Venereal disease is spread largely through ignorance and not intention. Here we have a promising field in which to attempt educational methods. The results of venereal disease are so appalling, so beyond the ken of the average boy or young man, that that is a reason why they should be presented most authoritatively. The idea of a disease, either syphilis or gonorrhea, being a transient, slight disorder is to be combated, and men must be told that syphilitic infection is just as easily and almost as likely to be acquired as gonorrheal. Many of our country boys, who are more ignorant of sexual diseases than their city brothers, might have resisted the pitfalls and temptations of city life and resultant disease if they had had the knowledge and warning that should have been theirs. These infections are most likely in early life, when judgment is immature and will power weak, and we cannot depend on the parent's method and capability of imparting advice in sex hygiene, as matters stand, but we must assist either directly or, through the parents, indirectly.

Many, predisposed by heredity, only need an exciting cause or stress, which may be either physical or mental, to permit the development of a psychosis Let us teach this, and warn and safeguard against infections other than venereal, and intoxications other than alcoholic. With our examinations of school children for mental and physical defects, with psychological clinics and psychopathic wards in general hospitals, the public and parents will become better informed and better realize the applicability of our advice.

Each county seat in Illinois in the near future will have a well equipped general hospital with a psychopathic ward, which can take proper care of many alcoholics and patients delirious from acute physical conditions, and prevent overburdening our hospitals for the insane. After the intensity of a psychosis is past, many of our institutional patients may be paroled, if proper care at home is taught and given.

We can, by educational methods, attend to the aftercare so essential to permanent recovery, and prevent our all too many relapses. We can combat prejudice and get earlier admissions, and thereby increase our recoveries, and instruct how to care for the insane, before and after commitment which is now so badly and almost barbarously done in the average community.

Now we cannot accomplish much by telling each other what we already know, but we must start a prevention propaganda along lines of public education and interest. I do not know of any who should be more interested in the uplift of our citizenship or in duty bound to take up this work than our officials in charities service and on the staffs of State hospitals for the insane. It should not entail much extra expense to the State and it can be done by newspaper and magazine articles, tracts, lectures, and moving pictures.

What will such a campaign of education mean to the public? Eventually it will mean that families in which cases of nervous or mental disorder have developed, or seem likely to, will, as a matter of course, take inventory of their mental health, or permit a physician or trained social worker to do so for them. In this way, the weaker, as well as the more sensitive members of a family, will be taught, or, if necessary, forced to live within the limits of their resistance to these disorders, limits which can often be determined by a skilled observer. Families in which tuberculosis has developed are taught, if they are intelligent, to observe the comparatively simple rules of right living through the tuberculosis propaganda. Why not attain similar results in the prevention of acquired types of insanity?

This article does not pretend to be in any degree exhaustive or technical, but only hopes to attract discussion and attention to a subject that I have barely touched upon. Summarizing facts I deem worthy of emphasis, I offer the following:

1. The present time is most favorable for giving increased time and interest to the propaganda of prevention of insanity when other sociological problems are attracting such attention.

2. The public is naturally indifferent to scientific truths, and whatever we offer must be forceful, brief, readable, and understandable.

3. Great stress should be placed on physical causes of insanity and how to prevent them.

4. The staffs and officials of our State hospitals should lead in this campaign of education, and because of their experience and training, they could do so most effectively.

5. Institutionalism spreads her protecting arms in caring for the insane, and institutionalism should do the same for the prevention of insanity.

ANNA STATE HOSPITAL.

MIXED CHANCRE.*

BY SAUL STEINER, M. D.,
New York,
Chief of Clinic, Genito-urinary Department, West Side Germa[illegible]
Dispensary and Hospital, and Chief Instructor, Hospital
Outpatient Department.

Of all the diseases of the genital organs, the mixed chancre, or mixed infection, as it is sometimes designated, receives the slightest mention in our textbooks. Some authors barely mention it. What is the cause? Is it because the mixed chancre is so infrequent, or is it because of the

*From the Genito-urinary Clinic of Dr. A. J. Weidenhammer at the West Side German Dispensary and Hospital.

difficult diagnosis, that the condition passes unnoticed. We believe that it is important to study its frequency, and to analyze the causes of the coincidence of two affections. At the same time we will study the forms under which the mixed chancre is found and the difficulties of its diagnosis.

DEFINITION.

Taylor says that the name mixed chancre is applied to certain hard chancres, whose appearance has been so changed by chancroidal pus, or by pus microbes and their resulting ulceration, that they resemble chancroids on the surface, while they present, more or less distinctly, the induration of the specific ulcer.

Chetwood states that mixed chancre is a combined infection of syphilis and chancroid. Rollet (*Traité des maladies vénériennes*) defines it thus: Mixed chancre is nothing else but the soft chancroid and the hard chancre in a state of superposition and coexistence. Lydston says: Any indurated sore, the secretion of which is inoculable in the true sense of the word, and which is followed by constitutional syphilis, is a mixed sore. We can then define the mixed chancre as a sore due to the inoculation (simultaneous or successive) of both viruses, chancroidal and syphilitic.

DESCRIPTION.

The mixed chancre has different aspects. Its characters vary from those of the typical soft sore to those of the typical syphilitic ulcer. The ulceration can be regular or irregular, round or like a fissure. It may be superficial or deep, its margins sharply cut and smooth, or its edges undermined. The base of the ulceration may or may not be indurated. The size is variable; it may be as large as a nickel or larger, but is ordinarily smaller. While usually painless, it may be very painful. As a rule, it begins as a typical chancroid. "The patient presents a lesion which has the characteristics of the chancroid, but after a while one notices the appearance of secondary manifestations" (Gaucher). The number of ulcerations is also variable. When multiple, one or more may have the characteristics of the syphilitic chancre, while the others preserve those of the chancroid. The induration appears very late, if at all. In cases of simultaneous infections, it appears from two to six weeks after the beginning of the sore; and, occasionally, even after the chancroid is healed. In many cases the sore has a yellow and irregular base, associated with an inflammatory condition and an indurated area surrounding the ulcer. This induration should not be confounded with the infiltration of the soft chancroid due to the action of drugs, or due to the peculiar position of the ulcer, nor with those deep ulcers which have reached the cellular tissue and which become just as hard as the typical syphilitic ulcer.

FORMS AND CONTAGION.

1. *Mixed chancre by simultaneous inoculation.* This is the most frequent according to most authors. This variety of chancre results when the carrier of the soft chancroid is in the simultaneous possession of a syphilitic contagion. In this case the patient first shows the chancroid; the syphilitic phenomena appear later. The chancroid ordinarily lasts from three to four weeks, and the chancre usually appears after the third week; the change in appearance from chancroid to chancre takes place about the third or fourth week from the onset. Mauriac describes this change as follows: "The ulceration becomes raised above the surrounding parts; at the same time its fundus fills up and is less irregular, the secretion diminishes and is less purulent. In the final stage the edges at the base present the chancroidal or elastic induration of the infected chancre, but in a less degree than when the chancre is not associated with a chancroid." Rollet also says: "It often happens that after a chancroid disappears on account of the cauterization or even spontaneously according to its normal and regular evolution, the chancre appears abruptly in the scar, and then a new disease must be considered. The mixed chancre in full development has the characters of both lesions which take part in its formation. It is indurated, sometimes prominent and elevated, but its surface is always deeply ulcerated, grayish and irregular. The edges are sharply cut or torn. It suppurates profusely." Such a transformation is typically shown in the following case seen recently at the clinic:

Joseph Q., aged twenty years; single; born in the United States. June 2, 1913, presented himself with an acquired phimosis and marked edema of the prepuce. Dorsal incision was performed and we found at one side of the frenum a lesion somewhat less than a dime in size. It was not indurated although much inflamed and very painful; the color was reddish, edges sharply cut, and irregular. Examination for spirochætæ negative; treated with pure phenol cauterization. June 28th (26 days later), the ulcer was nearly covered over with scar tissue, but the base became raised and indurated. Spirochætæ not found. Wassermann reaction negative. As the ulceration disappeared, the patient discontinued his visits. Three days later, the patient came back to consult us for "pain in the groins." He had an adenitis ready to suppurate. The sore had disappeared leaving in its place a buttonlike induration. On the chest a typical roseola could be distinguished.

Of course we are not always able to see these typical transformations, as these cases are not common. We have found more cases with chancroids which persist as such for a long time without giving any evidence of a specific lesion, until the secondaries suddenly make their appearance. As an illustration we may mention the following case:

Adolph B., aged thirty-four years; first seen January 4, 1912. Chancroid of the dorsal portion of the penis, very large, no induration whatsoever, dirty looking, sharply cut edges, suppurating freely, very painful. The sore appeared five days after intercourse. Right inguinal glands formed one large, painful mass. Examination for spirochætæ negative. Treated locally by cauterization with phenol and nitric acid. Three weeks later no sign of cicatrization. Cauterizations discontinued, and dusting powders used. January 30th, operated for suppurating bubo. February 6th (five weeks after the onset) no marked improvement. Still no induration. Wassermann reaction negative, also no spirochætæ. February 22d, roseola very distinct.

The foregoing case illustrates the opinions of Gaucher, Gougerot, Lydston, and others, who assert that the "chancroidal process inhibits the development of chancrous induration, or initial sclerosis: as a consequence, syphilis often follows an apparently typical soft sore. Slight sclerosis is very apt to be melted away, so to speak, by chancroidal infection, thus escaping attention." (Lydston, *The Surgical Diseases of the Genitourinary Tract*, 1905.)

Occasionally patients present a typical chancroid which runs its course and heals more or less rapidly, after which the roseola appears. Gaucher (Records of the Hospital Saint Louis) reports the following case:

M. B., aged twenty-five years. Patient entered the hospital on September 18, 1909, for a paraphimosis, complicating chancroids, which had lasted eight days. The chancroid of the frenum extended from the meatus for about three centimetres and persisted for three weeks. Bilateral buboes appeared, more marked on the left side. Treatment: The paraphimosis was manually reduced and wet dressings applied. September 27th, notable improvement, no edema. October 11th, microscopic examination negative. October 27th, patient had an inguinal adenitis with purely inflammatory characteristics. November 7th, patient left hospital cured. December 2d, patient presented a generalized reseola.

II. *Mixed chancre by successive inoculation.* Mixed chancres can be caused in one of two ways: 1. Syphilis is grafted on an existing chancroid. In this case the syphilitic manifestations appear very late, and even the specific sore develops long after the complete cure of the chancroid. 2. The chancroid is grafted on a syphilitic sore. In these cases, "the centre of the chancre becomes excavated, loses its special color; the base becomes irregular, yellowish, profoundly depressed, and the edges crack. The suppuration becomes profuse; the centre of the induration is more or less necrotic; sometimes totally disappearing" (Du Castel). When we consider that a chancre may sometimes be so small that the patient does not notice it, and that he subsequently indulges in intercourse, it is easy to see how in such a case a chancroid can be grafted on the already existing chancre. Then again the virus of a chancroid may remain for quite a long time under the prepuce without producing the disease. In order to produce a chancroid a door of entrance is necessary—an abraded surface. When this virus comes in contact with a chancre, a chancroid evidently will develop upon the open door presented by the syphilitic sore. A patient bearing a chancre can get a secondary chancroidal infection through unclean hands or dressings. As a matter of fact, most of the patients with mixed sores are those coming to the public dispensaries and hospitals; patients of the lower classes, poor and ignorant, who think that a "pimple" is not a matter of much consideration. Indeed, we meet patients in our clinics every day with chancres and secondary eruptions, who, upon our inquiring, state that they noticed the sore only a few days previously, though it must have been present for several weeks or even longer.

FREQUENCY.

There is a great difference of opinion among authors as to the frequency of the mixed infection. Looking over the statistics we find that Rollet, who was the first to describe it, gives five mixed chancres to one hundred pure chancroids. Fournier (*Nouveau dictionnaire de médecine et chirurgie*, 1866), in discussing the diagnosis of the chancroid, said: " . . . . one single cause of error deserves to be mentioned, without speaking of those complex and very exceptional cases, where two viruses can be superimposed upon the same ulceration. (mixed chancre)." Mauriac (*Leçons sur les maladies vénériennes*, 1883) and Audry (*Précis des maladies vénériennes*, 1910) believe that it is very rare. On the contrary, Gaucher (*Les chancres et les syphilides*, 1907), Balzer (*Maladies vénériennes*, and Gougerot (*Paris médical*, 1912) believe that the mixed chancre is quite frequent.

What is the cause of this difference of opinion? In the first place the difficulties in the diagnosis must be taken into consideration. In order to make a correct diagnosis it is necessary to observe the patient for some time—at least a few weeks. Exceptionally the beginning of the disease will show the characters of both infections. Generally we have to deal with a soft chancre and only after a few weeks do we witness the transformation of the soft sore into a typical syphilitic ulcer. When a chancre is situated in a moist locality, such as a mucous surface, it may lose its hardness and at the same time be transformed into a mucous patch. As we have already seen, the mixed chancres are much more often seen in our dispensary practice than in our private office, and these patients very often do not come regularly enough to be observed, and sometimes they quit and are not seen again. It has often happened to us that when a patient presented a suspicious sore—that is, a lesion which could not be diagnosticated as a syphilitic chancre, having the aspect of a chancroid, he refused the Wassermann test, and this of course influences the statistics.

The mixed chancre being the result of the inoculation of both viruses, it is natural to consider that its frequency will depend upon the frequency of both diseases, i. e., chancre and chancroid. Of these two conditions the chancroid presents an enormous variation in its relative frequency, while the chancre varies little. Some authors have even observed that there are times when the chancroid comes in epidemics, and there are periods when it is rarely seen. Mauriac states that: "There was a time when chancroid became so rare that we could see but one or two per week in the consultation rooms of the Hôpital du Midi. The frequency of the mixed sore, consequently, depends upon the variations in the frequency of the chancroid: the more chancroids the more mixed chancres. The frequency of the mixed chancre depends also upon the social condition of the individual. As we have said before, it is more frequent in the poor classes, where hygienic conditions are lacking. It is easily seen that a prostitute with a chancroid, who cannot afford to have medical advice, and who cannot give up her occupation, will get a chancre very easily, because the soft sore will prepare the soil for the reception of syphilis. The same thing can be said about men of the low and ignorant classes.

Women are more often the carriers of the mixed infection than men. In France the authors estimate that syphilis coexists with chancroid in one third of the cases in men, and in more than fifty per cent. in women.

In Austria, Brandweisser gives these statistics from Finger's clinic in Vienna: Women, 939 cases of chancroid, of which 616 were coexistent with

syphilis; men, 980 cases of chancroid, of which 245 had syphilis (*Archiv für Dermatologie und Syphilis*, 1908).

COMPLICATIONS.

Phimosis is a very common complication. According to Gougerot this phimosis is not an inflammatory one, but is indurated and hard. Sometimes it is an ordinary inflammatory process, which appears at the same time with the chancroid.

Bubo is also a very frequent complication. It is difficult to determine the exact time of its appearance in the case of a mixed sore. The patients usually come to the dispensaries quite late after the onset of the chancre. In cases of simultaneous inoculation the adenopathy is evident very early. More frequently it appears quite late. The glands (often only one) become large and painful, and they soften; the skin reddens and the bubo suppurates. In some cases the glands, after becoming large, painful and red, stay this way for a certain time and then retrogress, presenting the characters of typical syphilitic glands.

In other cases we can see a real mixed bubo, i. e., one gland indurated and hard, as in syphilis, and at the same time another gland, a little distant from the former, soft, painful, and suppurated.

DIAGNOSIS.

Clinically the diagnosis of mixed chancre is at times quite difficult. Sometimes only the appearance of the roseola can settle the question, but as we have seen, during the evolution of the disease, some local manifestations appear, which will permit us to suspect or confirm the diagnosis of mixed infection. Gougerot (*Paris médical*) states that all sores, which have the color of raw muscle (Mauriac), persisting for a long time, with or without infiltration, complicated by inflammation of the inguinal glands, and indurated phimosis, are mixed chancres. The bacteriological examination is much more precise. The pus examined with the ultramicroscope will sometimes reveal only the bacillus of Ducrey, but if we scratch the margins of the ulcer, we will obtain a serum rich in treponemata. The Wassermann test is also important. Of course at the beginning of the disease the result will be negative, but at later date (about four or five weeks after the onset) the Wassermann reaction becomes positive. The indurated nonsuppurative bubo is of great value in diagnosis, inasmuch as we find it in cases of mixed chancre, which look like soft chancroids, and which remain this way until the end of the disease.

CONCLUSIONS.

The mixed chancre is due to the simultaneous or successive inoculation of both viruses, syphilitic and chancroidal.

Its aspect is variable, resembling sometimes the chancroid and sometimes the chancre.

It begins ordinarily as a chancroid.

The mixed chancre is complicated by phimosis and suppurating bubo.

The induration is not constant.

The mixed chancre is more frequent than it is supposed to be. Its frequency depends upon the frequency of the chancroid.

The diagnosis is quite difficult at the beginning. Therefore each sore must be watched, and our opinion reserved.

17 Livingston Place.

ROENTGEN RAYS IN ECZEMA OF THE HANDS.

Preliminary Note on the Cure of Chronic, Recurrent, and Refractory Cases.

By Fred Wise, M. D.,
New York.
Chief of the Dermatological Clinic, Beth Israel Hospital; Attending Dermatologist, Vanderbilt Clinic, Medical Department, Columbia University.

In reading over the recently published German translation of Darier's text book on skin diseases, (*Grundriss der Dermatologie*, von J. Darier. Julius Springer, Berlin, 1913) with observations and annotations by Jadassohn, the writer was struck by a sentence with which Jadassohn elaborated Darier's views as to the treatment of certain forms of eczema. This sentence, translated, is in effect as follows: It is my impression that the use of Röntgen rays, in many cases of chronic and repeatedly relapsing eczemas of the hands and feet, gives very good results; they are easy of application and one becomes convinced that their action modifies the *terrain*, making it more resistant against external sources of irritation.

During the last six or seven years, the writer has, on numerous occasions, encountered cases of eczema of the back of the hands, which seemed to have resisted the most painstaking and carefully administered therapeutic measures, both external and internal. These cases, occurring with about equal frequency in both sexes, usually in young adults and in middle aged people, displayed a monotonous sameness in regard to certain features of the dermatosis; namely, the tendency to frequent recurrence, the resistance to ordinary modes of treatment, and the usual absence of demonstrable etiological factors.

In the majority of the cases, the eruption was limited to the back of the hands and the fingers. Usually it consisted of more or less circumscribed, highly inflamed, moist, angry looking patches of vesicular eczema. In some cases the patches would coalesce, forming larger plaques but leaving areas of healthy skin between the affected portions Rarely the entire dorsum of the hand was involved All complained of intense itching and burning sensations. Other cases would be impetiginous, showing secondary staphylococcic invasion; in these, the removal of the bandage would cause severe pain, accompanied by bleeding from the denuded areas. Cases of the type to which Pollitzer (1) recently called attention, some of which are very unyielding to treatment, are included in this category. Included also are those cases which, for want of a better name, are still designated "neurotic" eczema, by many of the older dermatologists. The so called trade eczemas, occupation eczemas, etc., which occur so commonly in photographers, bricklayers, furriers, wood workers, etc., (2) frequently present types of chronic, recurrent, exceedingly pruritic,

vesicular eruptions of the back of the hands, which are very refractory to treatment and upon which both local and general therapy seems to make but little lasting impression. That some of these types will improve, or even get well, when the external causes of irritation have been removed, is quite true. Frequently, however, such a favorable outcome does not obtain. The writer has in mind several instances in which furriers and photographers were induced to change their vocations, in the expectation that, the irritants to the hands having been eliminated, the eczemas would get well. Many cases of this class, have, however, been doomed to disappointment. The eczema may improve, or totally disappear for a while, only to return with renewed vigor, long after the exciting agents, such as furs, or fur dyes, or chemicals used in the arts, have been excluded as causative factors. Mention should also be made here of the class of cases heretofore regarded as chronic eczema of the hands, but which proved to be due to the presence of the ringworm fungus (3). Instances, undoubtedly authentic, have been encountered, in which chronic, relapsing eczema of the back of the hands would afflict people who had been free of any skin disease, until an attack of ivy poisoning seemed to have paved the way, or prepared the soil, for periodical attacks of true vesicular eczema, giving rise to the belief, among the laity, that ivy poisoning may recur without proximity to the vine.

Lastly, we come to the eczemas associated with the so called gouty and rheumatic diatheses. In this class, it rarely occurs that the disease is limited to the hands; but when it does occur in this locality, it would be difficult, indeed, to differentiate it, by its appearance, from those cases in which rheumatism and gout play no role whatever. Although attempts have been made to point out the fine distinctions between the various types of eczema called forth by external irritants, by diatheses, by dyscrasias, or by all these combined, the fact remains that many of them possess one common, salient feature—the marked tendency to relapses and recurrences.

It should not be inferred, from what has been said, that in all these patients the areas affected by the eczema were confined to the back of the hands. In some of them, there was a coincident eruption on the palms, the forearms, the feet, or other parts of the body. Particular attention, however, is called to the cases in which the eruption persisted on the back of the hands, after other areas were apparently cured, and to those in which the back of the hands were affected exclusively, throughout the entire course of the disease. It is in these cases that the writer has obtained permanent cures by means of radiotherapy, after other forms of treatment had failed to bring about lasting benefits.

There is nothing new in the employment of Röntgen rays in the various types of eczema. The majority of dermatologists, especially in recent years, have reserved the use of this valuable remedy to those cutaneous affections which do not ordinarily and readily respond to the older methods of internal and local medicinal treatment (4). This applies more especially to the cutaneous affections associated with the formation of vesicles and bullæ.

These patients were treated by the somewhat haphazard, frequently repeated, divided dose method of x ray administration. Fortunately, no bad results followed, thanks to the fact that the total quantity of rays to which the skin was exposed, was very small. Most of the cases were treated prior to 1912, when the writer employed a "soft" Piffard treatment tube, excited by a current of 2.5 to 3.5 amperes, the distance from the target varying between six and ten inches. No internal or other external treatment was given during the Röntgen ray regime. Improvement was manifest in most of the cases after a single exposure and none of the cases failed to show good results after several exposures. The number of exposures varied from three to eighteen, in different patients, at intervals of five to eight days. Eight patients (five males and three females), whose histories have been followed up, reported permanent relief, after a period varying from one to four years since the cessation of treatment.

In each of these patients, a long continued course of internal and external medication proved very discouraging; even the few who had sufficient means to suspend their work and seek a change of climate, reported indifferent results. The rapid improvement of the lesions and the sudden alleviation of the itching under radiotherapy was in marked contrast to the fruitless, older therapeutic measures.

Thanks to the work of American and European radiotherapists (5), a present day report dealing with x ray therapy of the "haphazard, divided dose" type of procedure, is of very little practical value. In a future publication, the writer hopes to be enabled to present a series of this class of cases, showing the results of treatment with the accurately measured, modern method of "massive dose" radiotherapy.

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Abstracts and Reviews.

PNEUMOCOCCUS INFECTION AND LOBAR PNEUMONIA.*

By RUFUS COLE, M. D.,

New York,

Rockefeller Institute for Medical Research.

Lobar pneumonia is so definite an entity, from the clinical point of view, that it seems hardly necessary to question the fact that it is due to a single factor, the pneumococcus. There is some doubt, however, even on this point, for it is known that this organism is a normal inhabitant of the mouth of the average healthy person, and it there-

* [illegible] the Harvey Society at the [illegible] New York, December [illegible], 1913.

fore seems that some other factor must enter for the development of pneumonia. The pneumococcus is also capable of being pathogenic to man without the production of lobar pneumonia, causing septicemia and local purulent processes. In spite of these facts it seems that this organism plays at least the deciding part in the production of lobar pneumonia. for it is typically present, it occurs in the blood of many cases, it can be made to produce similar lesions in experimental animals, and certain recent serological tests show that its presence is associated with the development of immune bodies and toxins in the blood of the infected subject.

It has been shown by animal experiment that the introduction of cultures of virulent pneumococci into the lungs through a tracheal tube will give rise to typical pulmonary lesions, though the course of the disease is usually much less severe and far briefer in these animals than in man. It has been suggested that the introduction of the organism into the smaller bronchi causes an exudation of thick mucus, which, in turn, occludes the lumen of the bronchiole, thus causing an area of diminished resistance. The existence of a local lesion in the respiratory tract is postulated by some as a prerequisite to the development of pneumonia, and the well known frequency with which traumatisms of the chest are followed by pneumonia seems to bear out this contention. Others have sought to account for the development of lobar pneumonia on the basis of an increased virulence of the strain of organism causing the infection over that of the normal inhabitant of the mouth. Still others have suggested that there is a precedent diminution of resistance to the pneumococcus on the part of the victim. Their contention is supported by the frequency of the occurrence of some acute catarrhal or other acute minor disorder of the respiratory tract, or by the previous existence of some severe debilitating disease. The most probable explanation of the relation between the pneumococcus and lobar pneumonia is that this organism is the same in the normal mouth as in the infected lung, at least in all essential respects; that it plays the most important role in the production of lobar pneumonia, being probably the true etiological factor; that its pathogenicity for man becomes such as to cause the disease through a combination of two or more of the following factors: Assumption of increased virulence; diminution in the normal resistance of the subject: presence of local respiratory lesions.

The pneumococcus is able to cause two distinct reactions in man and animals, a local reaction, which is the cause of the anatomical lesion of the lung in pneumonia, and a systemic reaction. The organism is not always confined to the lesion in the lung, but is found in the blood in a certain proportion of cases. The presence of the pneumococcus in the blood of a case of lobar pneumonia is of ill omen.

Recent studies on the chemistry of the pneumococcus have shown that this organism liberates a toxic substance which is capable of so altering the blood as to produce methemoglobin, thereby diminishing the proportion of oxyhemoglobin in the circulation. The pneumococcus, further, causes a material diminution in the amount of oxidase normally present in the blood. It also causes the production of an increased amount of glycuronic acid, which is known to be associated with the production of toxins. These observations give evidence that the pneumococcus produces a toxin during the course of pneumonia.

Against the occurrence of toxins it may be mentioned that it is impossible to cause death, or even symptoms, in normal rabbits by the injection of the blood from rabbits moribund from pneumococcus infection. This experiment is, however, altogether inconclusive and has but little weight. Artificial lysis of pneumococci gives rise to a toxin which is capable of causing the typical diminution in oxygen capacity of blood *in vitro*. Further confirmation of the belief in the production of toxins by the pneumococcus is found in the possibility of actively and passively immunizing animals. It is also possible to demonstrate agglutinins in the serums of infected animals and man.

It has been held that the phenomenon of crisis is due to the development of sufficient immune substances to overcome the action of the pneumococci. This explanation is apparently invalidated by the observation that the disease may relapse or spread to another portion of the lungs within twenty-four hours after the occurrence of a typical crisis. Serum from patients at the crisis will protect experimental animals from death from more than a surely fatal dose of pneumococci; these immune bodies are in greatest abundance within twenty-four hours before the crisis and during the first and second days following it; in a series of ten patients examined by the study of the protective power of their serums for animals, nine showed protective substances in greater or less degree at some time in the course of the disease. Even these findings, positive as they are in the demonstration of the presence of immune bodies in pneumonia, are alone sufficient to account for the phenomenon of crisis.

It has been found that as the pneumonic process continues there is a progressive increase in the numbers of leucocytes present in the pulmonary lesion. Finally these reach such an abundance that they overbalance the antiferment action of the pneumococci and by their own ferments cause a solution of the pneumococci and the fibrin. In addition to the lytic action of the leucocytic ferments, the process of bacteriolysis gives rise to substances which are in themselves destructive to the pneumococci. It is probable, therefore, that these phenomena are chiefly responsible for the local changes in the pulmonary lesions at the time of crisis. It is to be noted, however, that resolution is not always synchronous with recovery, and it is probable that still other factors, as yet unknown, are acting in the process of recovery from pneumonia.

There are four general classes of pneumococcus. Three of the classes show no morphological or cultural differences by which they can be distinguished from one another. The fourth belongs to a definite morphological group, *Pneumococcus mucosus*, which has very thick capsules and causes the production of thick mucus in animals. Agglutination experiments made with organisms of the several groups, tested against serums from organisms of the same group and from many different races, gave results

which were exactly parallel to those obtained from the protection experiments.

While the mucosus group was found not to produce any immune bodies and to give no agglutination, this character is not inherent in the organism, but resides in the fact that it possesses a very dense and resistant capsule. If this is dissolved without destruction of the organism, both protection and agglutination tests show the production of immune bodies and show mutual responses among several strains of organisms of this type.

These immunological experiments have naturally led to a study of the possibility of making use of the protective bodies produced by infection of man, and of animals, when infected by members of either the first two or of the fourth group of organisms. It has been found possible to render horses highly immune to organisms belonging to the first two large groups of organisms. Inasmuch as the several races in either group are productive of immune bodies effective against all other organisms in the corresponding group, these two groups lent themselves best to the study of curative effects of serum.

Immediately upon admission to the hospital a culture is made from the blood and sputum, or even from the infected lung if no sputum is available. The organism is identified by agglutination or protection tests, and if it is of either of the first two groups the administration of serum is begun at once. To be effective, large doses of the serum must be employed, and the earlier in the disease they are given, the more effective their administration. A first dose is given intravenously, consisting of two c. c. of the corresponding serum, to test the patient's sensitiveness to the serum. If this is not above normal, a second dose of from fifty to 100 c. c. of serum is given on the same day, also intravenously. Doses are repeated twice daily from then until there is recovery or death.

Other methods of treating pneumonia might be mentioned, but of these, two only have shown any promise. The first was developed by the late Doctor Hiss, of New York, and consisted in the injection of leucocytic extract. His results are such as to call for a more extended study of the method. The second treatment is of a purely chemotherapeutic nature, and was elaborated by Morgenroth; the agent is a copper compound of the quinine series. It has been proved curative and protective to certain animals, but, unfortunately, its use in man has not given very promising results, and in some cases it has caused a toxic amblyopia.

It has long been observed that pneumonia is more fatal in certain years and in certain regions than at other times or in different regions at the same time. Our recent demonstration of the existence of the four different classes of pneumococci, and of the marked differences in mortality from infection with the several types, suggests that these differences in severity may be due to differences in the relative prevalence of one or another type. When cases of infection with type one preponderate, the severity of the epidemic is relatively slight compared to the severity of an epidemic associated with a prepondenance of cases due to the second type of pneumococcus.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXLI.—How do you treat frostbite? (Closed.)

CXLII.—How do you treat chronic constipation? (Answers due not later than January 15, 1914.)

CXLIII.—How do you treat gallstone colic? (Answers due not later than February 16, 1914.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The Prize of $25 for the best essay submitted in answer to Question CXL was awarded to Dr. Gustavus Eliot, of New Haven, Conn., whose article appears below:

PRIZE QUESTION NO. CXL. SENILITY.

By Gustavus Eliot, M. D.,
New Haven, Conn.

Senility, or old age, is characterized by impairment of the structure and functions of the cells of which the tissues and organs of the body are composed. The treatment includes such measures and agents as will prevent and delay this impairment of structure and function. It cannot be hoped to accomplish much in restoring structure or function which has already been lost.

Abundance of fresh air is as important for the aged as for infants, in order to secure thorough oxygenation of the blood. It should, as far as possible, be associated with a mild and even temperature. Extremes of temperature, either extreme cold or extreme heat, are often fatal to the aged.

Gentle exercise is exceedingly useful. An old person should not be allowed to remain in bed all day. If his condition is not too weak to permit him to be moved into a chair, and if he is able to walk he should be encouraged to do so; at the same time he should not be allowed to exercise so much as to become greatly exhausted.

Bathing daily with tepid water followed by gentle friction with a dry towel promotes elimination of excrementitious matter, and improves the circulation.

Food which is both easily digestible and nutritious should be given at regular, and not too long, intervals. The proper interval depends somewhat upon the amount taken at each meal. If this is small, it should be repeated every two or three hours during the day, and less frequently at night. Milk is the most useful food because it can generally be taken easily and digested without difficulty. If it is not easily digested it should be pep-

tonized or partially peptonized before it is given. The juice of grapes or oranges can often be taken with relish and benefit.

If the patient is able to masticate solid food, he should have eggs, cooked lightly, baked or mashed potato, cereal, such as oatmeal or rice, thoroughly cooked, with cream, bread and butter, vegetable soups, and cream soups, made with such vegetables as potato, celery, corn, beans, peas, or tomatoes.

Whiskey or brandy is sometimes very useful in stimulating the circulation of old people. Either should be given diluted with water or milk, and when the stomach is not empty. From two to four drams may be given three times a day. If the patient has been in the habit of taking alcoholic beverages, a larger amount may be necessary to produce a beneficial effect.

Ammonium carbonate, in five grain doses, in emulsion with acacia, to which a quarter of a grain of camphor may be added, is sometimes exceedingly useful in overcoming the tendency to sluggishness of the circulation. This may be repeated every two, three, or four hours.

As a general tonic, especially as a tonic to the digestive and circulatory organs, strychnine sulphate, in doses of one thirtieth, one fortieth, or one sixtieth grain, repeated at intervals of four or six hours, will often prove of great benefit. It is better adapted for continuous or prolonged use than the ammonium carbonate, but it may be advantageously supplemented by the latter temporarily, when there are symptoms of increasing or extreme weakness.

If it is desirable to prolong life, after the patient becomes unable to swallow, strychnine may be administered hypodermically, and rectal alimentation may be employed.

Dr. Harry B. Gudgel, of Hazelton, Ind., writes:

In beginning treatment it is well to explain the condition and its complications. Insist on absolute rest from all business, and take life as easy as is consistent with the purse. A change of climate and scenery is always a benefit if the patient is able to make such a change, but in any instance spend a greater part of the time out in the open air. Graduated exercise in walking, however, should never be vigorous or tiresome. A regular and temperate life is very necessary.

In a general way a diet should be encouraged and recommended that puts the least strain on the heart, liver, and kidneys. A strictly vegetable diet appears to be the best, and beyond a reasonable doubt the strain on the circulation is much less than that of a diet of animal food or mixed food.

Milk and egg albumen are of benefit. But tea, coffee, alcohol and tobacco must be absolutely forbidden. Massage in all stages is very helpful, but especially so if the veins are sluggish. Electricity in the form of a vibratory massage is very agreeable three times daily. Daily baths are necessary to keep the skin active; common or sea salt may be added.

As an equalizer to the blood current and a support to the heart's action, potassium or sodium iodide in doses of from two to four grains, away from the meals, gives good service. The sodium salt is preferable as it does not disturb the stomach so much. Small doses of nux vomica with tincture of columba or gentian, will be valuable as a stomachic and stimulant, taken in teaspoonful doses before the meals. The use of the old quassia cup could be substituted for the bitter tonic. In women strontium iodide is to be preferred, because it does not usually produce the gastric disturbance, eruptions of the skin, nor the glandular swellings. For the nervous manifestations, Jamaica dogwood fluid extract acts well in from fifteen to twenty drops three or four times a day. The pill containing two to five grains of the solid extract may be substituted, repeated as needed.

The bowels and the kidneys must be carefully watched and frequently examined. The every other day dose of any of the better aperient waters, or the drinking of a pint of cool or hot (as pleases the patient) water a half hour before the morning meal will usually suffice. The patient should be instructed to make return calls to the physician about every ten days in order that the condition of the vital organs may be watched and the blood pressure determined. The symptomatic histories of the cases of senility that come to the physician are varied and each patient brings his own description of his illness with all its embellishments.

Spencer has defined life as "the continuous adjustment of internal relation to external relations." And some one has defined senility as "the progressive result of imperfect adjustment of internal relations to external relations." Hence the necessity of calling on a physician when the first symptoms are noticed.

Dr. N. Cimaduomo, of Brooklyn, New York, advises:

Life in the open country, walking in fresh air, walking in the open, dry air, milk diet for the first week to be gradually followed by broths. Where it is a lifelong habit, I allow good wines in small quantities at a time, but several times daily. I have had occasion to reinvigorate many men who would have died long before their time if they had not received the treatment dictated by science, experience, and discernment.

What has always given me excellent results has been that while the hygienic rules were being followed out, I made good use of the faradic current. I apply the current first on the spinal column; one electrode on the seventh cervical vertebra and the other on the sacral region. I do not leave the electrodes in the same position, but change them, pressing on the spine from time to time. After five minutes of spinal faradization I apply the positive electrode on the dorsal region and pass the negative electrode over the superior extremities and thorax for three minutes; and for three minutes longer I carry the positive electrode to the sacral region, and the negative electrode with a sponge attachment, I pass over the abdomen and inferior extremities. This faradic treatment I carry on for about fifteen or twenty days, and the results are marvelous.

To this treatment I add hypodermic injections of soluble arsenate of iron with strychnine; internally I prescribe a decoction of four grams of cin-

chona bark in 600 grams of water, to be reduced to 200 grams and to be taken in the morning with the addition of four drops of Fowler's solution.

Electric baths of moderate strength are very useful; also hypodermic injections of iodated lecithin, having the double scope of restoring the nervous system and of accelerating metabolism. Beside the faradic currents and neurotonics, we have the injections of lecithin ex ovo and the violet rays.

Dr. L. K. Hirshberg, of Baltimore, writes:

By moving a senile person to a new, fresh dietetic environment, constantly stimulating, gently and carefully, his nutrition and metabolism, much may be done for him. Proper treatment directed toward atheromatous arteries, calcium deposits, and the various atrophic alterations in the brain, heart, kidneys, liver, and other tissues—often considered nonorganic—will improve nourishment and blood supply. Massage, fresh air, mild gymnastics, and flushings with milk, buttermilk, sour milk, and Bulgarian milk are indicated.

If a man is upon the point of senile dissolution, flush him out, change his diet, cure his hidden and lesser infections, rid him of all minor accidents, and upon all else keep him active. Cholesterin, which has been just found to be stimulated to overproduction by alcohol, tobacco, caffeine, and many other things, which is in part responsible for senile atheroma and arteriosclerosis, must also be reduced and checked.

(*To be continued.*)

Therapeutic Notes.

Treatment of Hyperchlorhydria.—A. A. Stevens, in *Therapeutic Gazette* for August, 1913, lays stress on the fact that hyperchlorhydria is merely a symptom, the causes of which differ widely; the treatment should be begun, therefore, by endeavoring to remove the cause. It is, above all, necessary to scrutinize the patient's habits and also to search thoroughly the various abdominal organs for centres of irritation, for nervous influences undoubtedly underlie the gastric irritability and pain accompanying the hyperacidity, which of itself may not be sufficient to produce them. In the majority of cases the chief aim must be to prevent any direct irritation of the stomach and to allay the morbid excitability of the nerve centres.

From the dietetic standpoint, the object should be to improve general nutrition and thus lessen nervous impressionability. This is best accomplished by a liberal mixed diet of nutritious, bland, easily digestible food. Vegetables poor in cellulose are the most suitable, and these are best taken in the form of purees. Tea and coffee should be used sparingly, if at all, but the drinking of water—not in excess nor too cold—at meals is regarded by Boas as an essential part of the treatment. Excessive smoking is distinctly harmful. Fat, taken liberally in the form of butter, cream, and olive oil, usually proves acceptable and efficacious. It not only diminishes acid secretion, and causes an actual reduction of acidity by inviting regurgitation of the alkaline duodenal contents into the stomach, but also probably acts mechanically as a demulcent and protective of the stomach.

As for drug treatment, bismuth subnitrate may be given in doses of twenty grains (1.3 gram) or more, or silver nitrate in doses of one quarter grain (0.015 gram), half an hour before meals. Among the suitable alkalies, sodium bicarbonate acts promptly and has no action on the bowel, but may cause distention. Magnesia is especially useful when hyperacidity and constipation coexist. Calcium carbonate may be substituted for or combined with sodium bicarbonate where there is a tendency to diarrhea. Alkalies should be given, as a rule, in doses proportionate to the protein content of the meal. Of sedative drugs, the bromides are particularly useful where the hyperchlorhydric syndrome occurs as part of a widespread nervous erethism; in many cases strontium bromide is best borne. The value of belladonna appears to depend more upon its power to lessen vagal irritability and prevent spasmodic contractions than upon a secretory effect. It is especially serviceable in cases with symptoms of vagotony or abnormal excitability of the vagus (Eppinger and Hess). The drug may be given as the extract in doses of from one eighth to one quarter grain (0.008 to 0.015 gram) three times a day, or as atropine, 1/120 grain (0.0005 gram), two or three times a day.

Salvarsan in Sympathetic Ophthalmitis.—J. Chaillous, in *Presse médicale* for November 1, 1913, is credited with having obtained good results in two cases by the use of the new antiluetic arsenicals. In the first patient there appeared, six weeks after a wound in the limbic region of the right eye, an iridocyclitis apparently of sympathetic origin in the left eye. Under the influence of two intravenous injections of salvarsan all the symptoms disappeared, and three weeks after the onset of the sympathetic trouble the eye was again normal. In the second case sympathetic involvement of the right eye appeared a month after a perforating injury to the left, and there seemed no chance of preventing the rapid onset of complete blindness. After intravenous injections of neosalvarsan, however, the affection gradually subsided and the vision improved two tenths. On account of these results the author advises that where an eye is so injured as to be functionally useless it should be enucleated at once and an injection of salvarsan given; if enucleation is refused, or persisting vision in it renders enucleation of doubtful propriety, salvarsan should constitute the treatment. It is important that the drug be given at the earliest possible moment. Further experience alone will show whether salvarsan should be preferred to neosalvarsan in grave cases, and the latter drug reserved for the less serious forms.

Treatment of Enterogenous Intoxication.—B. L. Spitzig, in the *Ohio State Medical Journal* for September, 1913, points out that in intestinal intoxication, after nitrogenous food has been restricted to a minimum for a time, it is of great importance that the resumption of such food be accomplished gradually; otherwise, a relapse will be inevitable. The bulk of the diet, in the meantime, should consist of carbohydrates and fats. Correction of constipation, if present, is of paramount im-

portance. In cases attended with mucus production or in which the coarser foods prove irritating, nothing serves better, to enlarge and soften the stool and to start the habit of daily evacuation, than agaragar, finely ground and given in doses of from two to four drams (eight to sixteen grams) in the morning. Relief of vagotony—colonic hypertonicity, moderate bradycardia and arrhythmia, together with hyperacidity and vasomotor neurosis (Eppinger)—is procured with belladonna, five drops of the tincture, two or three times daily (bearing in mind possible idiosyncrasy). In all instances catharsis should be produced for a limited period, then gradually left off as the bowel becomes competent. Mechanical abdominal support is not infrequently of service.

In the direct treatment of the toxemia itself the author recommends the routine use of salicylates for two to four weeks; a second course is given after an interval of two weeks, and later further treatment as the condition warrants. Phenyl salicylate and acetylsalicylic acid are inferior to sodium salicylate which the author gives in doses of from five to ten grains (0.3 to 0.6 gram) thrice daily. In case of irritation there may be advantageously combined with the salicylate twice the amount of sodium bicarbonate. In cases presenting evidences of hypothyroidism thyroid substance should be substituted for the salicylate, while in borderline cases of intestinal toxemia and hypothyroidism the two remedies can be administered interchangeably, the thyroid being preferable, however, to the salicylate for the more acute symptoms.

Treatment of Asthma.—M. H. Fussell, in the *Therapeutic Gazette* for August, 1913, states that where bronchitis accompanies asthma, an abundance of fresh air and proper clothing, with a change of climate, if this be necessary and phacticable, constitute important therapeutic measures. Drugs must include, first of all, tonics:

℞ Strychninæ sulphatis, ... gr. ss (0.03 gram);
Liquoris ferri et ammonii acetatis, .5iv (120 grams).
M. Sig.: One teaspoonful every three hours.

The strychnine may also be given as nux vomica, as in the following mixture:

℞ Acidi hydrochlorici diluti, ...3ii (8 grams);
Tincturæ nucis vomicæ, ...3ss (16 grams);
Elixiris cinchonæ (N. F.), q. s. ad,
3v (120 grams).
M. Sig.: Teaspoonful every three hours.

Or, iron may be given, in the form of Blaud's pills.

For the cough, oil of eucalyptus in the form of globules is useful when there is much expectoration. Ammonium chloride, potassium citrate, and opium in one of its forms are all of value.

Frequently the heart begins to fail in cases that appear to present merely chronic bronchitis. Rest and the administration of digitalis in guarded doses are then demanded. The same rule applies to cases in which, superimposed upon emphysema, the asthmatic attacks tend to produce cardiac dilatation. When there is actual edema of the legs the patient must remain in bed until the decompensation has been overcome.

Treatment of Chronic Vaginitis.—H. Roulland is stated in *Gazette médicale belge* for May 1, 1913, to have directed attention to the fact that in the senile form of chronic vaginitis irritating injections and topical applications must be carefully avoided. Tincture of iodine, diluted, and zinc oxide, combined with lead subacetate, are the agents that should be employed in this condition. Doléris advises that a pledget of cotton dipped in the following solution be passed over the entire vaginal mucous surface:

℞ Tincturæ iodi, ...5iss (5 grams);
Glycerini .....5v (20 grams).
M.

A cylindrical tampon covered with an ointment of zinc oxide should then be inserted:

℞ Zinci oxidi, ... 5iiss (10 grams);
Petrolati, ...5vi (25 grams).
M. Fiat unguentum.

Each time the tampon is removed an injection of the following solution should be made:

℞ Liquoris plumbi subacetatis diluti....3vi (24 c. c.);
Aquæ bullitæ, ... Oii (1000 c. c.)
M.

The zinc oxide ointment and the injections should be used daily, whereas the iodized glycerin applications should be made only every two or three days.

The chronic granular vaginitis of pregnant women is an extremely refractory condition. Here the utility of zinc oxide ointments is practically limited to procuring relief from pain. Treub advises injections of a slightly astringent solution of alum, one tablespoonful in a quart (litre) of tepid water, or of a one in 4,000 solution of potassium permanganate. Doléris recommends that a diluted mercurial ointment be applied to the vagina daily on a gauze or cotton tampon:

℞ Unguenti hydrargyri, ...5ii (8 grams);
Adipis lanæ hydrosi, ...3vi (24 grams).
M.

Where complete recovery from the vaginitis has not occurred at the advent of labor, an iodine application should be at once made to the cervix, the vagina and vulva washed with soap and tepid water, and antiseptic vaginal irrigations conducted.

Treatment of Neuralgic Headache.—J. A. Lindsay, in *Clinical Journal* for June 11, 1913, advises that, in ordinary neuralgic headache, oftenest involving the trigeminus, the state of the teeth be carefully investigated. In a patient suffering from an intractable trigeminal neuralgia, and with teeth apparently perfect, it was at length noticed that one of the molars was slightly tender on being sharply tapped with a tongue depressor. Upon removal of this tooth the neuralgia disappeared.

The most successful medicinal combination for trigeminal neuralgia is, according to the author's experience, one of butyl chloral hydrate (croton chloral), gelsemium and sodium bromide. General tonics are useful, especially iron; alcohol, which should be recommended only with much circumspection, has a certain degree of utility. Local applications are not very successful, though an ointment of aconitine is worth trying. Warmth to the affected parts is useful. In all forms of headache, rest, physical and psychic, is of the first importance.

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EDITORS
CHARLES E. DE M. SAJOUS, M.D., LL.D.
CLAUDE L. WHEELER, A.B., M.D.

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INTERNAL MEDICATION AS AN AID TO RADIUM IN THE TREATMENT OF CANCER.

The leading topic of the day, the therapeutic use of radium in cancer, has brought out, since the memorable meeting at the Philadelphia College of Physicians at which Dr. Howard A. Kelly and Dr. Robert Abbe reported their clinical results, a number of authoritative communications in the lay press calculated to temper the interpretation of the actual value of the remedy by sufferers. In keeping with our own admonitions in these columns, stress was laid upon the fact that resort should be had to surgery at the earliest moment. This suggests, as a humane duty on the part of general practitioners, and in keeping with the urgent advice of Cullen and Bloodgood and other authorities, that all suspicious local conditions, chronic sores, stubborn infiltrations, epithelial accumulations, and all spots showing persistent irritation or proliferation, be studied histologically to ascertain whether degeneration into a malignant growth is at all likely. Were all such threatening tissues promptly removed, as may readily be done nowadays without the least suffering or risk, the mortality of superficial cancer would soon be reduced to surprisingly low figures. This does not, however, militate against the real value of radium, for, judging from Doctor Kelly's slides, sixty-seven per cent. of his cases of superficial cancer were cured, while thirty-three per cent. were improved; but the paucity of radium available practically defeats, at least for the time being, all efforts to extend its benefits to all sufferers, and if prompt resort to surgery were the rule, even this drawback would in great part be annulled.

The fact that so high a proportion of superficial cancers—mastoid eminence, tissues beneath the inferior maxillary, nostrils, cheek, and breast—as thirty-three per cent. should have been only improved, however, suggests that even better results from radium might be obtained if the underlying condition of the patient which renders him vulnerable to cancer received greater attention. As H. H. Janeway has well said: "While all experience shows that that there is no internal remedy, or remedies, which will surely check the progress of the disease, certainly in advanced cases, all study, whether clinical, pathological or experimental, points to the fact that there is some underlying, hidden cause which leads to that aberration in the action of tissue cells which we call cancer." What this consists of is still obscure, but ample evidence is available to show that many agents acting through the circulation have materially influenced and even, in some rare instances, cured well authenticated cases. Among these agents may be mentioned arsenic, the cacodylates, salvarsan, thyroid gland, adrenal gland, thymus, methylene blue, tellurium, selenium (the latter two in animals), sodium chondroitin sulphate, vaccines, and cytolytic sera. That these agents *tend* to influence beneficially the cancerous process seems clearly to suggest that either one of them used in conjunction with radium might raise its efficiency standard by opposing the systemic cause of the disease. Indeed, we should also compensate in a measure for the limited supply of radium available, by facilitating, through concomitant therapeusis of the body at large, the curative efficiency of small quantities of the radioactive substance used, by sensitizing, as it were, or otherwise favorably influencing the morbid field to which it is applied.

WHO MAY PRACTISE NURSING?

A person shall not practise as a nurse or hold himself or herself out as a nurse or use the terms "nurse" or "registered nurse" or other words or letters to indicate that such person is a nurse and entitled to practise as a nurse unless a certificate has been issued to such person, authorizing him or her to practise as a nurse as provided in this article.

The foregoing paragraph, which contains the crux of the intended legislation, shows that, unlis-

mayed by a setback some months ago, certain self-constituted representatives of the nurses of New York State have returned to the charge upon the Legislature in order to secure special standing and privileges for nurses trained and instructed in one definite way, and to deprive, if possible, of the ability to earn a livelihood nurses adequately informed from both physician's and patient's viewpoint, but trained somewhat differently. This is to be done by means of a slight wrench to the English language, by which the word "nurse" is henceforward to acquire a new and exclusive meaning, to be a sort of collegiate degree connoting, beside the ability to make a patient comfortable and to follow out in a faithful and intelligent manner the attending physician's instructions, a vast amount of book learning, a second hand knowledge of matters so alien to the nurse as diagnosis, therapeutics, vocal culture, and much more ornamental humbug. The average hardworking and contented nurse will, if questioned on the subject, probably disavow not only knowledge of any proposed legislation, but any need for it. The act to amend the public health law relative to the practice of nursing which it is now hoped to force through the Legislature, is the work of a small city clique of nurses who care little or nothing about the needs of people in villages or the backwoods, but are extremely anxious about their own dignity and prerogatives.

The hospital nurse, as a matter of fact, is taking herself a trifle too seriously. As pointed out by Dr. W. Gilman Thompson, whose original communication, The Overtrained Nurse, in our issue for April 28, 1908, was read with huge enjoyment by physicians generally, nursing is not, strictly speaking, a profession. A profession implies professed attainments in special knowledge as distinguished from mere skill (*Century Dictionary*); nursing is an honorable calling, nothing further, implying proficiency in certain more or less mechanical duties; it is not primarily designed to contribute to the sum of human knowledge or the advancement of science. The great and principal duty of a nurse is to make a patient comfortable in bed, something not always attained by the most bookish of nurses. Any intelligent, not necessarily "educated" woman can in a short time acquire the skill to carry out with implicit obedience the physician's directions. The graduate of the unregistered hospital or sanitarium or of the short term school, or any woman who reads conscientiously a course of instruction in nursing and practises assiduously at home what she learns, is fully competent to undertake any ordinary case of illness; skimming through primers on bacteriology, plumbing, or voice culture will not help her in the essentials of her work. Where special skill is required, as in a major surgical case, a laparotomy for example, we admit that hospital training is, if not indispensable, at least highly desirable, and for such cases the hospital trained nurse might exclusively reserve her services at a wage higher than the ordinary.

We entertain the highest respect for nurses as such, but not for nurses as politicians. There is room enough for all, and nursing must remain nursing in spite of a possible ukase from Albany. If certain exceptionally well qualified nurses can persuade physicians and patients that they deserve higher fees and special consideration, well and good. There can be no objection to postgraduate courses in nursing, with a diploma, if liked. Incompetence in nursing, however, is discoverable instantly and there is small danger of a woman imperiling the life or comfort of an invalid by ignorance or stupidity after she has undergone the usual preliminary scrutiny and questioning of the physician and the patient's relatives. Nursing is an honorable, a remunerative, a noble calling, but efforts to exalt it into a profession or to rank it with the higher branches of learning and culture are the apotheosis of the absurd.

THE PATHOGENESIS OF ANGINA PECTORIS.

In an article on the pathogenesis of angina pectoris in *Rivista critica di clinica medica* for December 6, 1913. Castelli endeavors to reconcile the different facts in the case. He does not deny all significance to the customary doctrine of coronary sclerosis, but its meaning has hitherto been steadily negative—negative, that is, in a positive sense. The meaning is there, the factor exists; but as a cause he deems it inadequate and more or less unnecessary. How then is angina pectoris explained?

The point for inquiry, which leads us to our author's conclusion, is of what, clinically, an ischemia of the myocardium is capable. Is it the explanation of the pain, of its extension in different directions, of the apprehension of sudden death? He thinks not. Myocardial weakness is a state antagonistic to that of angina pectoris. On the other hand, the hypothesis of Mackenzie, that the contractility of the myocardium, its inotropic power, is impaired, is as untenable as the causality of arteriosclerosis; for angina pectoris exists without arteriosclerosis, and the converse is also true. For greater precision, Castelli fastens his attention on the effect of blood pressure, both high and low, central and peripheral. From the total effect of these influences he discounts much, leaving hypertension in the left ventricle as the most important element. It is a big sum in subtraction. Angina pectoris does

not mean a want of muscular strength, of contractility, of conductivity or dromotropic action. It is not a spasm, as Heberden supposed. It is no such union of contrasts, but the result of "brusque hypertension in the left ventricle, both systolic and diastolic from the increased tone, together with an unregulated and disordered excitability," the so called negative bathmotropic effect, and an affection of the "primitive fascia and of the cardiac nerves."

Isolated clearly, Castelli's view must appear defective, at least in positive merit. It does not resolve the discords in the symptoms. It fails to explain, or explains inadequately the action of amyl nitrite. It takes no account of the connection between angina pectoris and other cardiac lesions, aortic aneurysm, aortic valvular disease, atheroma of the coronary arteries, increased arterial pressure in the elderly, increased peripheral resistance, myocardial degeneration, or at all events, it fails to appreciate the precise share which each of these agencies takes in the sum total. Huchard's doubtful advice that digitalis has a cardiotonic action in certain ill defined cases of angina pectoris is allowed, an admission which brings out in strong relief the dangers of digitalis, its tendency to depress conductivity when that function is weak, and to produce heart block by prolonging the diastolic pause, the negative dromotropic effect of Engelmann. Pure speculations as to angina pectoris, though valuable and interesting, are frankly unsatisfactory. So long as theory is set on one side, and clinical influences on another, both, especially the former, will be smitten with a certain sterility.

THE ACID INTOXICATIONS.

In spite of the great amount of research and the advances made in the knowledge of the processes of metabolism and of their perversions, as well as in the causation of the intoxications, little is yet known that seems to be of lasting definiteness.

The best known of the autointoxications are the acid intoxications, the acidosis. Experimentally these can be produced by feeding an alkali and ash free diet, when the sulphuric and phosphoric acids must combine with the fixed cations of the body tissues. Here also in attempting to neutralize the acid condition ammonia is withdrawn from the urea content, giving a high ammonia content, so that the amount of "acetone bodies"—acetone, diacetic acid and beta oxybutyric acid—can be gauged by it. The most important and common condition in which these acetone bodies are found is diabetes mellitus. The acetone found here is believed to be due to an incomplete oxidation of food, particularly the fats and in all likelihood also the proteids, *and* a lessening in the utilizing power for the carbohydrates. Carbohydrates act as an intermediary to the burning up of acetone into carbon dioxide and water; in other words, it is normally a catalytic agent. This principle accounts for the likelihood of the strict withdrawal of carbohydrates, in the treatment of diabetes mellitus, causing the production of the acetone bodies, and is the reason why, on the supervention of the acetone condition, that carbohydrates are given, so that even though there is a defective utilization of them, they will by sheer quantity force the utilization of some of the carbohydrate for this intermediary capacity. The sugar utilizing power is controlled by the pancreas in its role as an organ of internal secretion, this power lying in the islands of Langerhans. It is further believed that the pancreas inhibits the output of sugar so as to be within the utilizing power, and that the adrenals are acceleratory in this respect.

While the acetone bodies are commonly associated only with diabetes, they are found in other conditions in which the sugar output is not a feature. Of these the toxemia of pregnancy is the most important, and is receiving a great deal of study. Here also the ammonia content is high. The symptoms include mental torpor and somnolence, while coma, though it occurs, is not common. Other conditions, such as fasting, certain febrile conditions, carcinomatous cachexias, some psychoses, etc., show acetone, which it is believed is due to diminished carbohydrate utilization caused, however, by the diminution of all the body functions.

The acetone bodies have also been mentioned as causative toxic factors in such little understood conditions as migraine in adults and cyclic vomiting, its prototype in infancy. And while the dietary indications in the treatment of these conditions seems to point in that direction, yet the nervous or neurotic theory of causation is most commonly held.

PITUITARY EXTRACTS AND THE STOMACH.

Houssay used an extract of the posterior lobe of the pituitary of the bullock, according to *Semana Médica* for November 13, 1913, prepared by boiling one part of the gland in five parts of water, precipitating the albumin with lead acetate, treating the excess of lead with sulphuric acid, and neutralizing. One c. c. in salt solution, injected subcutaneously, promoted the contractility and secretion of the stomach, while the tone and the rhythm were regulated. The results were both experimental and clinical. On the excised stomach, it is stated, a similar effect was produced.

CANCER OF THE GASTROINTESTINAL TRACT.

Dr. William J. Mayo, of Rochester, Minn., presented a series of lantern slides of great interest at the meeting of the Eastern Medical Society on December 12, 1913, showing radiographs and illustrating the various operations which he advocated. In his remarks he emphasized the enormous value of early diagnosis and the importance, in operating, of extensive removal of lymphatic glands. Among two thousand cases of gastrointestinal cancer at St. Mary's Hospital, Rochester, he said that in seventy-three per cent. the malignant growth was situated in the stomach, in fourteen per cent. in the large intestine, exclusive of the rectum, in twelve per cent. in the rectum, and in less than one per cent. in the small intestine. He described the technic of the procedures he was accustomed to employ in the various situations, and gave some statistics of the very gratifying results, considering the conditions present. In cancer of the rectum he advised a preliminary colostomy and the complete removal of the rectum, from behind.

PARATHYROID INSUFFICIENCY AND THYROID TRANSPLANTATION.

Poggio observes in *Rivista critica di clinica medica* for December 6, 1913, that the thyroid and parathyroids are in chemical and physiological relation to each other, but he holds rather surprisingly that in tetany the administration of calcium is less satisfactory than transplantation of the parathyroid bodies, while transplantation of the thyroid alone is superior in effect to either. He brings forward two successful cases in demonstrating this new variant on the prevailing theory as to the treatment of tetany and its connection with the parathyroids. In each case the thyroid gland of a patient with Basedow's disease was transplanted into the abdominal tissues, and the point to be noticed is, that the thyroid was removed without the epithelial bodies or any other part of the parathyroids. From all this, it is manifest, according to the author, that "the chronic symptoms of parathyroid insufficiency are improved or disappear, at least in many cases, with the administration or transplantation of thyroid." This is a paradox. For ourselves we regard calcium as a valuable remedy, and the benefit derived from its use has appeared to us very plain.

Obituary.

BRIGADIER GENERAL GEORGE HENRY TORNEY, M. D.,

of Washington, D. C.

General Torney died at Washington, December 27th, after an illness of three weeks of pneumonia in his sixty-third year. He was born in Baltimore, June 1, 1850, was educated at Carroll College, New Windsor, Md., and at the University of Virginia, where he received the degree of M. D. in 1870. He was for four years assistant and passed assistant surgeon in the United States navy and in 1875 became assistant surgeon in the army; was breveted colonel in the medical corps in 1908 and became surgeon general in 1909. General Torney distinguished himself in the Spanish War and saw severe service both in Cuba and the Philippines. He rendered great service after the San Francisco fire and did exceptionally good work in the prevention of typhoid fever during the recent encampment at San Antonio, Texas. He was chairman of the war relief committee of the American Red Cross. His widow survives him.

News Items.

The Late Dr. Charles Phelps.—The medical board of St. Vincent's Hospital, New York, records with profound sorrow the death of Dr. Charles Phelps, who, for forty-three years, had been visiting and consulting surgeon to that institution. His great skill and kindly sympathy were always at the service of the sick and suffering poor, and his vast experience and wise counsel always available to his colleagues.

JOSE M. FERRER, M. D., *president.*
CHARLE. E. NAMMACK, M. D., *secretary.*

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, January 5th, Wills Hospital Ophthalmic Society, Academy of Surgery, and the Philadelphia Clinical Association; Tuesday, January 6th, Aid Association of the County Society and the Medical Examiners' Association; Wednesday, January 7th, Physicians' Motor Club and the College of Physicians; Thursday, January 8th, Polyclinic Ophthalmic Society and the Pathological Society; Friday, January 9th, Northern Medical Association and the Psychiatric Society.

The Edward N. Gibbs Memorial Prize Fund.—This fund was established by the wife and daughter of the late Edward N. Gibbs, and its income, which amounts to about $500 a year, is used in aiding investigators into the cause and treatment of diseases of the kidney. The recipient of the fund is chosen annually. About the first of February the committee will select the worker for 1914, and requests all persons who desire to work under this fund to send their applications to the committee of the Edward N. Gibbs Memorial Prize Fund, 17 West Forty-third Street, New York, together with a statement of their fitness to prosecute such investigations, stating the laboratory in which they have studied, and any researches conducted by them.

Western Surgical Association.—At the twenty-third annual meeting of this association, held in St. Louis, Mo., on Friday and Saturday, December 19th and 20th, under the presidency of Dr. Jabez N. Jackson, of Kansas City, the following officers were elected: President, Dr. Byron E. Davis, of Omaha; first vice-president, Dr. Leonard Freeman, of Omaha; second vice-president, Dr. L. W. Littig, of Denver; secretary and treasurer, Dr. Arthur T. Mann, of Minneapolis, Minn.; members of the executive committee, Dr. Jabez N. Jackson, of Kansas City; Dr. Amos Abbott, of Minneapolis; Dr. John P. Lord, of Omaha; Dr. William Grant, of Denver, and Dr. Malcolm Harris, of Denver.

A New Method of Producing X Rays.—At a dinner given on Saturday evening, December 27th, by Dr. Lewis Gregory Cole, of New York, a new method of producing x rays was demonstrated by Mr. William David Collidge, in the presence of a number of prominent physicians and physicists expert in the use of the x ray. This new method is the result of three years' experimenting in the laboratories of the General Electric Company, and it is alleged that the rays produced are much more powerful than those now in use, rendering it possible to take radiographs of the soft tissues of the body, the nerves, and the blood in the veins. Among those present at the dinner were Dr. A. Judson Quimby, chief of the x ray department of the Polyclinic Hospital, Dr. I. Seth Hirsch, of Bellevue Hospital, Dr. H. Dachler, of Toledo, Ohio, Doctor Mages, Dr. Charles Holding, Dr. L. T. LeWald, and Professor Scherer, of Cornell University.

The Hatfield Lectures at the Philadelphia College of Physicians.—An endowment of $10,000 to the College of Physicians of Philadelphia by Henry Reed Hatfield and his brother, the late Walter Hatfield, will be used to provide lectures by distinguished men to be delivered semi-annually before the fellows of the college. The endowment is made as a memorial to the father of the donors, the late Dr. Nathan Lewis Hatfield.

The Correction of Hospital and Dispensary Abuses in Philadelphia.—At a meeting of physicians representing various medical societies and institutions in Philadelphia, held on the evening of December 23d, resolutions were adopted calling upon the State legislature so to amend the law that it would constitute a misdemeanor for a person to misrepresent his financial standing in order to receive free medical treatment. It was also resolved to ask for the adoption of a measure licensing hospitals and dispensaries in order to bring their work under State control. Recognition on the part of the State legislature of the necessity for close scrutiny of hospitals before making appropriations was likewise urged. It was further agreed to establish a dispensary association for the purpose of supervising such institutions. A committee of physicians who had investigated one hundred cases given free treatment at the Hahnemann Hospital reported that seventy-five per cent. of these patients were able to pay. At the next meeting of the Philadelphia County Medical Society further action for the correction of the abuses complained of will be taken.

Personal.—Dr. William Seaman Bainbridge was the guest of honor at a dinner at the home of Dr. B. Merrill Ricketts, of Cincinnati, on the evening of December 18th. One hundred and sixty covers were laid, the majority of the guests being the leading physicians and surgeons of Cincinnati and vicinity and of northern Kentucky. After the dinner a number of those present boarded the train for St. Louis to attend the twenty-third annual meeting of the Western Surgical Association, which was held at the Planters Hotel.

At the afternoon session of the association, December 19th, Doctor Bainbridge read a paper, by invitation, on The Significance of Intraabdominal Bands, Folds, and Veils. He spoke on the subject of cancer at the afternoon session of the association, December 20th. While in St. Louis he also spoke, by invitation, on cancer before the National University of Arts and Sciences.

Dr. Seth C. Gordon, of Portland, Me., has tendered his resignation as chairman of the State Board of Trustees of Insane Hospitals. Dr. Henry W. Miller, superintendent of the Augusta State Hospital, has also resigned.

Southern Surgical and Gynecological Association.—The twenty-sixth annual meeting of this association was held in Atlanta, Ga., on Tuesday, Wednesday, and Thursday, December 16th, 17th, and 18th, under the presidency of Dr. John Y. Brown, of St. Louis, Mo. There was a large attendance, the second largest in the history of the organization, and the meeting was in every way a great success. A splendid programme was presented, among those furnishing contributions being Dr. J. A. Danna, of New Orleans; Dr. John B. Murphy, of Chicago; Dr. Charles H. Mayo, of Rochester, Minn.; Dr. J. M. T. Finney, of Baltimore; Dr. James E. Moore, of Minneapolis; Dr. J. Wesley Bovee, of Washington, D. C.; Dr. ApMorgan Vance, of Louisville, Ky.; Dr. Arthur D. Bevan, of Chicago; Dr. Rudolph Matas, of New Orleans, and Dr. Henry O. Marcy, of Boston. The address of the president was delivered at the opening session, his subject being the Diagnosis and Surgical Technic to be Employed in Handling Acute Abdominal Conditions. Dr. John Wesley Long, of Greensboro, N. C., one of the eight surviving original members, was elected president, and other officers were elected as follows: Vice-presidents, Dr. Arthur Carroll Scott, of Temple, Texas, and Dr. James F. Mitchell, of Washington, D. C.; secretary, Dr. W. D. Haggard, of Nashville, Tenn., reelected; treasurer, Dr. LeGrand Guerry, of Columbia, S. C.; council, Dr. Stuart McGuire, of Richmond, Va.; Dr. Bacon Saunders, of Fort Worth, Texas; Dr. Rudolph Matas, of New Orleans; Dr. J. M. T. Finney, of Baltimore, and Dr. John Young Brown, of St. Louis; chairman of committee of arrangements, Dr. Hubert A. Royster, of Raleigh, N. C. Asheville, N. C., was named as the next place of meeting.

Suicides in 1913.—The record of suicides in 1913 shows an increase, the number being 13,106, compared with 12,981 in 1912, and 12,242 in 1911. The proportion of suicides between men and women remains about the same, being 9,602 males and 4,504 females. Physicians, as usual, head the list among professional men, the number being 34, compared with 40 in 1912, 27 in 1911, 51 in 1910, 27 in 1909, and 42 in 1908. A significant feature of the report is the increasing number of persons who take their lives on account of ill health, 1,068 suicides during the past year being attributed to that cause. Of the total number, 4,842 shot themselves, 4,392 took poison, 1,932 hanged themselves, 984 killed themselves with gas, 349 cut their throats, 325 drowned themselves, 168 threw themselves from roofs or windows, 54 threw themselves under railroad trains, 28 stabbed themselves, 20 burned themselves, 9 employed dynamite, 1 used electricity, 1 starved, and 1 set a new agency at work by using an automobile as means of destruction. There were 213 cases of murder and suicide during the year.

Examination for Medical Assistant in the Bureau of Chemistry.—The United States Civil Service Commission announces an open competitive examination on January 12, 1914, to secure a list of eligible persons from which to fill a vacancy in the position of medical assistant, male, in the Bureau of Chemistry, Department of Agriculture, Washington, D. C., at a salary of $1,800 a year. The duties of this position will be to study the claims and representations made in conjunction with proprietary remedies, look up medical literature, assist in preparing cases, etc., under the Food and Drugs Act. A knowledge of French and German is desirable. Graduation from a medical school of recognized standing and at least three years' subsequent experience in the practice of medicine, or two years' subsequent experience in either pharmacological investigations or the actual examination of drug products with reference to the claims made by the manufacturers, are prerequisites for consideration for this position. Applicants must have reached their twenty-fifth but not their forty-fifth birthday on the date of the examination. Persons who meet the requirements and desire this examination should at once apply for application Form 304, and special form, to the United States Civil Service Commission, Washington, D. C.

The Life Extension Institute.—This organization, which has for its avowed object the lengthening of human life by the practical application of the principles of modern scientific hygiene, was incorporated in New York on December 29, 1913, with ex-President Taft as chairman of the board of directors and Colonel William C. Gorgas as consultant in sanitation and hygiene. Mr. E. E. Rittenhouse, of New York, will be president of the institute. Mr. Harold A. Ley, of Springfield, Mass., the originator of the plan, will be treasurer, and Mr. James D. Lenahan, secretary. Dr. Eugene Lyman Fisk, of New York, has been appointed medical director. A hygiene reference board has been appointed, which is composed of nearly one hundred men who are authorities on matters pertaining to health and hygiene. Professor Irving Fisher, of Yale University, is chairman of this board, and among its members are Dr. Lee K. Frankel, Dr. Burnside Foster, the Hon. Walter H. Page, United States Ambassador to England, Dr. Alexander Graham Bell, Dr. C. B. Davenport, of the Eugenics Record Office, Dr. George H. Simmons, of Chicago, Dr. William J. Mayo, of Rochester, Minn., Dr. William H. Welch, of Johns Hopkins University, Professor Russell H. Chittenden, director of the Yale Sheffield Scientific School, President David Starr Jordan, of the Carnegie Peace Foundation, Miss Mabel Boardman, of the Red Cross Society, Dr. Wickliffe Rose, of the Rockefeller Hook Worm Commission, Dr. Harvey W. Wiley, of Washington, D. C., and Dr. William H. Tolman, of the American Museum of Safety. The institute plans to make arrangements with life insurance companies, schools, industrial establishments, clubs, and individuals as well as to cooperate with hygienic agencies and movements of all kinds, including those connected with the tuberculosis movement, the social hygiene movement, the eugenics movement, the public health departments, Federal, State, and municipal, and even popular gymnastics and sports. It will establish laboratories in the larger cities for analysis of blood, urine, etc., of the persons examined. Its central office will be at 25 West Forty-fifth Street, New York.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT

November 3, 1913.

Operative Experiences with Cerebellar Tumors.—H. Oppenheim and M. Borchardt report two successful cases of removed cerebellar tumors. The first case was that of a young Russian student with a fibrosarcoma of the vermiform process, who is in a healthy condition one and a half year after the operation without recurrence. The second, a blind girl of seven years, who was restored to sight and health. Axhausen demonstrated specimens of rare disease of the upper third of the femur; cases of osteitis fibrosa seu deformans (Paget), diffuse bone syphilis, senile osteomalacia and exuberant callus formation in tabes dorsalis, all of which involved only the upper third of the femur, and were difficult of differential diagnosis.

Further Results of Experimental Syphilis Investigation.—P. Uhlenhuth and P. Mulzer show from their experiments that rabbit experiments give important insight into the pathology and therapy of syphilis. The rabbits are better adapted to this kind of work than monkeys, the latter being expensive and difficult to obtain.

Investigations in Spotted Fever.—C. Hegler and St. von Prowazek give a preliminary report on their investigations at the bedside and also with animals. The transmission of spotted fever is due to body lice; prophylaxis must intervene at this point.

Cylinders and Cylindroids.—C. Posner says that between the real hyaline cylinders and the cylindroids first described by Thomas, there are only quantitative differences; the latter also are proteid in nature and in diagnosis the nephritis must be taken into account. They are obtained from the thready masses of the nubecula. A dark field is recommended for the study of these forms, particularly of the transition forms. Beside the albuminoid cylindroids there are mucoid forms which originate in the glands of the urinary passages.

New Remedy for Uterine Contractions.—W. Lindemann reports that the new preparation, for the time being designated as 197 (Roche) is a combination of secacornin with aminen. It is, according to the investigations of the author, a very efficient emmenagogue, in its action similar to that of hypophysis extract. In hemorrhage after labor it is preferable to secale and in the puerperium it is a valuable aid in hastening involution of the uterus. Unfavorable effects upon mother and child were not observed.

Preparation of Dr. Friederich Franz Friedmann for the Treatment of Tuberculosis and Scrofula.—C. L. Schleich, Erich Müller, Hans Theilheim, Immelmann, F. Kraus, and F. F. Friedmann relate a large number of case histories from many observers with remarkable results. Kraus states that even if the best cases only have been reported, still it cannot be denied by an unprejudiced observer that something very astounding is at hand. He for his part has not seen anything like it with tuberculin. At the close Friedmann said that he offered his remedy to the German physicians, but asks, however, that they confine themselves strictly to the indications.

Surgery of the Esophagus in the Thorax.—E. Unger reports that it has repeatedly been possible to tide over patients with esophageal carcinoma for days and weeks after the operation; one patient has been permanently cured by Torek. At the present time there is no other treatment that promises results. Now the full responsibility can be shouldered and the patient advised to undergo operation no matter where the carcinoma may be.

Production of Radioactivity from Nonradioactive Elements.—Max Levy-Dorn tells of the results of his investigations of rays discovered by him which are emitted without the aid of the Röntgen tubes with high tension currents under ordinary atmospheric pressure at the cathode.

November 17, 1913.

Distribution of the Red Marrow in the Human Femur.—E. Hedinger found that there is no foundation for the prevalent notions concerning the distribution of the red marrow. We find frequently red marrow when we expect to find pure fatty marrow in the long bones in healthy persons. The pure fatty marrow is found late in life, if certain conditions, such as severe arteriosclerosis, have not made the marrow red. It is desirable to investigate other long bones beside femurs.

Blood Findings in Lymphogranulomatosis (Paltauf-Sternberg).—O. Steiger says that lymphocytosis is the initial stage of the disease. The well developed polymorphnuclear leucocytosis with normal lymphocyte count corresponds to the state of lymphogranulomatosis (the development of the granulation tissue). The appearance of eosinophilia points to a necrotic change in glandular tissue, particularly in the bone marrow (without reference to a histologically characteristic state), but more usually in the second phase of the disease. The pure lymphopenia, finally, with increased leucocyte count, is called forth by the terminal stage of the disease because the change in the glandular parenchyma to Sternberg's granulation tissue with fibroid-hyaline degeneration has made it impossible to produce lymphocytes.

Diathermic Treatment of Leprosy.—P. Unna, Jr., says that the diathermic treatment for the pains of leprosy gives excellent results. No other method can compare with it in the rapidity with which pain is subdued and severe painful attacks are curtailed. With continued treatment lasting results can be obtained and even deeply infiltrated tissues can be healed in a relatively short time, a result that could be attained with external warmth treatment only after long periods of time. The diathermia must be looked upon as an aid in all general treatment of nerve lepra.

So Called Invaginatio ileocœcalis in Infants.—Lotsch advises the practitioner not to temporize in this condition with taxis according to Hirschsprung or Heubner, but to call in the surgeon as soon as the diagnosis is made.

Clinical Experiences with Atropine Sulphuric Acid.—A. Phillippsthal concludes that the atropine sulphuric acid is an exceptionally effective remedy in asthma, in vagus neurosis, in certain

tachycardias, in the night sweats of the tuberculous, and in iodism. It seems to have no action on the diseased pathological gastric secretion. As far as its action goes it is decidedly preferable to atropine sulphate, because the disadvantageous side actions, such as dryness in the throat, increase in the pulse rate, excitability, have never been noticed with the atropine sulphuric acid. On account of these facts the local pain produced by the subcutaneous injection is of less significance.

November 21, 1913.

Method of Examining the Secretions of the Stomach and Its Substitution of Same by Secretion Curves.—Skaller proposes the following method for examining the gastric secretions: The patient swallows the duodenal sound, then immediately afterward a solution of Liebig's meat extract in water is given and then every five minutes a small quantity is aspirated and the acidity estimated by titration. This method is in no way to be a substitute for the Ewald-Boas test breakfast, but should furnish a means to control objective improvement and deterioration of the hypersecretion and makes it possible to place our experiments on an irreproachable experimental basis.

Abderhalden's Serodiagnosis in Psychiatry.—Max Theobald has shown by his experiments that there can be no doubt of the possibility of differentiating dementia præcox in many cases from certain other psychic diseases by this biological method, even though a final decision of the problem can be reached only by the optic method together with the dialysis procedure.

Practical Experiences with the Biological Pregnancy Reaction after Abderhalden.—A. Scherer asserts that Abderhalden's dialysis procedure is available for diagnostic purposes in cases of pregnancy when accurately done and the results carefully judged. It is of particular value in myoma and pregnancy, in the differential diagnosis; in the gravid retroflexed uterus, where the anatomical findings in the incipient stage do not give a definite result; in the obese, where the diagnosis of pregnancy is made with difficulty; in the beginning of pregnancy, particularly in those cases where early recognition is of great importance; in tuberculosis, etc.; in the diagnosis between extrauterine gestation and annexal tumor.

Treatment of Bronchial Asthma with Bayer's Vibroinhalation Apparatus.—O. P. Gerber asserts that this apparatus relieves on a physical basis the spasm by diminishing the increased irritability of the peripheral vagus endings in the lung. The results described are very satisfactory.

WIENER KLINISCHE WOCHENSCHRIFT.

November 13, 1913.

Abortive Treatment of Syphilis.—Wilhelm Kerl and Otto Sachs's general conclusion seems to be that it is well to excise a chancre in its early stage, and then to institute a course of salvarsan and mercury, making a Wassermann test at intervals, because occasionally a cure may be obtained, while if it fails, the attempt in no way interferes with the usual course of treatment. The observation of cases treated in this manner must extend over a period of years; one lasting only a few months is of no value. The combined treatment with salvarsan and mercury is to be preferred to treatment with either alone.

November [illegible], 1913.

Etiology of Idiopathic Atrophy of the Skin (Dermatitis atrophicans).—M. Oppenheim believes that dermatitis atrophicans is caused by an intrauterine pressure and tension which injures the elastin of the skin.

Results Obtained Thus Far from Tonsillectomy.—Siegfried Tenzer reports the condition of a number of children examined two years after a total extirpation of the tonsils. No bad results of any kind were observed, while the sore throats that had been more or less frequent before operation had wholly ceased.

Ebaga in Dermatology.—Oskar Neugebauer describes ebaga as a combination of alkalies in various concentrations with stearic and palmitic acids, with the addition of a specially prepared mineral oil. The advantages given are an extremely penetrative power which enables the admixed drugs to be quickly absorbed, so that an effect is secured at a considerable depth. It is useful when fat is contraindicated, does not become rancid, and is economical.

November [illegible], 1913.

Rabies with Meningitic Symptoms.—Jul. Goldberg and K. Oczesalski report the case of a boy, thirteen years old, who was bitten by a dog and died eighteen days later. He was taken to the Pasteur Institute the day after he was bitten, and received six injections within the next four days. On the fourth day he left the institute and arrived at home six days later, having walked a considerable part of the distance. Three days after getting home he began to complain of chills and pains in his head and limbs. The next day he vomited several times, and on the following day he was returned to the institute, where another injection was given. The usual symptoms of rabies were absent, but those of meningitis were present. The sensorium was clear. Three days later he died from paralysis of respiration. The writers maintain that this is the first case published in which symptoms of meningitis have been clinically observed in the course of rabies, the first case of rabies in which a diffuse meningitis has been found on autopsy, that the time of incubation was the shortest ever known in this disease, and that it was one in which all of the ordinary, characteristic symptoms of rabies were wanting, with the exception of a slight oculomotor paresis.

ZENTRALBLATT FÜR CHIRURGIE.

November 8, 1913.

Simple Method of Wound Treatment in the Balkan War.—Joh. G. Chrysospathes recommends liquid paraffin in the treatment, not only of wounds, but also of bedsores, from the results he obtained in 920 cases. Even bad, gaping wounds in which the bone was laid bare responded with remarkable celerity. The results were even quicker and better when two to 2.5 per cent. of iodoform was dissolved in the paraffin; more than this is not desirable. The paraffin is applied on gauze, which is usually removed with ease, but when it sticks it can be loosened with hydrogen dioxide.

ZEITSCHRIFT FÜR AUGENHEILKUNDE.

November, 1913

Treatment of Diseases of the Lacrymal Passages, with Especial Reference to Inveterate Forms.—H. Kulnt says that in these cases the lacrymal sac should be extirpated when a tuberculous or lupous dacryocystitis is present with ozena, when there are polypoid, or other great changes in its mucous membrane, when the sac is atrophic, as in old trachoma, whenever there are extensive and deep changes in the adjacent bones, and when an operation is to be performed in which the eyeball will be opened. He recommends the window resection of the duct into the middle meatus of the nose when a firm or bony stricture exists at the nasal aperture, and the canaliculi, sac, and canal are free from morbid changes. Opening of the canal and sac from the antrum of Highmore may be recommended when the antrum is diseased. In all other obstinate stenoses and diseases of the lacrymal sac, when at least one punctum and canaliculus is normal, he considers Toti's dacryocystotomy to be indicated.

ZEITSCHRIFT FÜR RÖNTGENKUNDE.

November, 1913

Röntgentherapy of Tuberculosis.—Alexander Hoerder discusses the benefits to be derived from Röntgentherapy in tuberculous diseases of the skin, lymphatic glands, bones, larynx, lungs, kidneys, bladder, and genital organs, and concludes that it is of distinct service.

PRESSE MÉDICALE.

November 26, 1913.

Cancer Protozoa and Their Culture.—F. J. Bosc states that examination of a large amount of cancer material has convinced him that all cancerous growths contain parasites. While some tumors present an abundance of examples of these organisms in various stages of development, large and small, many present only forms representing the nonsporulating cycle, while others, still more numerous, show only very small forms that are difficult to detect. In some growths the parasites strikingly resemble coccidia, in others gregarines, and in a third group, myxosporidia. The best culture medium for these organisms was found to be a mixture of incompletely coagulated blood with endothelial scrapings from the aorta, kept under anaerobic conditions. The protozoa developed through various stages, with nuclear division, morula formation, and production of fine, nucleated granular bodies exhibiting slow ameboid movements. Three successive generations of these parasites were grown. Inoculation of animals with the cancer parasites gave negative results, but similar organisms from animals affected with sheeppox, after cultivation through seven successive generations, yielded positive results when injected. These various parasites are held by the author each to have an affinity for a special type of tissue cell, which, under the resulting excitation, proliferates, loses its normal form and function, and becomes a species of servant to the parasite, to which it bears a symbiotic relationship. Assuming, as the author does, that the parasites are the actual cause of the tumors, the prophylaxis of cancer consists in keeping the skin scrupulously clean, especially after the age of forty years, when general cellular vitality begins to diminish; caring at once for inflammations of the mucous membranes of cavities opening to the exterior; avoiding contact of animal bearers of protozoan infection; using only thoroughly cooked food; and excising every new growth as soon as it appears. Over 100 illustrations of parasitic cells accompany the article.

December 3, 1913

Apparatus for Treatment of Leg Fractures.—E. Quénu and P. Mathieu recommend in recent leg fractures that cannot be well reduced and fixed by ordinary methods, and in which operative intervention is not advisable, the use of a modified Lambret apparatus. A pin is passed horizontally through the tibia, starting at a point in front of the head of the fibula, at the level of the upper portion of the tubercle, and a similar pin through the os calcis. The two pins are then connected by means of adjustable supporting rods, approximately parallel with the axis of the limb. The frame thus formed can be not only lengthened in order to overcome shortening, but also warped and otherwise modified so that lateral angulation, lateral displacement of the lower fragment, anteroposterior displacement, and rotation can all be corrected. The introduction of the pins and adjustment of the frame require only a short period of anesthesia. The points where the pins pass through the skin are covered with a ring of sterile gauze and cotton, held by a figure eight elastic bandage. The rods of the apparatus are supported on cushions, thus avoiding all pressure on the heel and calf. On the succeeding two days further correction of the position of the fragments may be advisable, preferably with the aid of radioscopy. The apparatus is removed only after about three weeks. No anesthesia is necessary for this purpose. Afterward a plaster cast may be used until consolidation is complete. The Lambret method is especially advantageous in cases of compound fracture with marked bony displacement and much wounding of the soft tissues.

REVUE DE MÉDECINE.

November, 1913.

Closed Renal Tuberculosis Resembling Bright's Disease.—J. Bret and Blanc-Perducet maintain that there should be classed among the rarer medical varieties of renal tuberculosis one in which the changes produced by the disease are chiefly interstitial, the symptoms being those of ordinary chronic Bright's disease. The original tuberculous lesion does not communicate with the pelvis and may eventually heal. Such healing, however, does not mean, as would be the case in the lung, that the disease has become innocuous, for in the kidney it is not only the tissues immediately adjacent to the caseous foci that undergo fibrosis, but those at a distance. The irregular, scattered, and heterogeneous nature of this fibrosis prevents the kidney from exactly reproducing that of the completely shrunken organ of chronic Bright's disease, but the appearance is distinctly that of a granular kidney, with adherent capsule, a moderate degree of atrophy,

and red and white mottling. One or both kidneys may be in this condition. The cases present no clue as to the cause of the renal disease except tuberculosis, show no vascular degeneration, and typically manifest uremic attacks, with nocturnal pseudoasthma. Gousset has found the tubercle bacillus itself in this type of kidney. The blood pressure generally remains low.

Causes of Osteomalacia.—S. Bonnamour and A. Badolle assert that osteomalacia is not a simple morbid entity, but one the causes of which are many and complex. Just as glycosuria may be due to various causes, so the decalcification of the bones characteristic of osteomalacia is of varying origin. One of its causes is probably acid dyscrasia, the bones becoming decalcified by the excess of acid just as they do when exposed to the action of an acid *in vitro*. This doubtless applies to cases in which phosphaturia and osteomalacia, previously present, cease when glycosuria appears, the lactic acid transformation which before disposed of an excess of sugar in the system having been replaced by elimination of the sugar with the urine. Facts are at hand proving that many cases of osteomalacia are of infectious origin. The third variety of cases is that associated with disorders of internal secretion. In some instances the ovaries are involved, but no uniform pathological picture is presented. Oophorectomy, when beneficial, very probably acts by reestablishing the phosphorus and calcium equilibrium. Of thirty-three cases studied by Hoenicke, only four were free of Basedow symptoms or other thyroid disturbance. Disordered thyroid function almost inevitably disturbs the metabolism of calcium. The parathyroids seem to exert some influence over the nutrition of the bones. Hallion and Alquier produced osteomalacia in rabbits by continuous administration of pituitary extract for two years. With regard to the adrenals, clinical use of epinephrin has frequently proved capable of arresting the disease. It certainly does not act directly by causing calcium retention, but rather by modifying the thyroid or ovarian secretions. The nervous system plays a role in every form of osteomalacia, often by reinforcing the original cause, either reflexly or through vascular alteration.

ROUSSKY VRATCH.

August 31, 1913.

Technic of Investigating Seminal Spots.—A. V. Grigorjeff has simplified and perfected the method of examination of seminal spots. The matter is of such medicolegal importance that the method is here given in detail. Small bits of material are removed from one or more of the suspected spots and placed in 0.5 to two c. c. of ten per cent. alcohol. At the expiration of one or more days, with frequent shaking, a few drops are removed from each solution, placed on slides, evaporated over the flame, and the residue is tested by the Florence reagent. If any of the solutions gives a positive reaction, the bit of cloth is removed and a few shreds are placed on a slide, and stained for one minute with a one half per cent. solution of erythrosin in ammonia. The preparation is carefully washed with a few drops of water, dried in the air, and examined under the microscope, with a drop of turpentine or xylol. The spermatozoa are stained by this method perfectly. The solution, after several days' standing, may also be centrifugated and the sediment examined for spermatozoa. In case the suspected semen is mixed with blood, the alcoholic solution of the suspected spots is treated with three or four washings with five times the volume of sulphuric ether for five to ten minutes, and the ether decanted, the decolorized fluid is evaporated on a watch crystal, and the residue is treated as above explained.

September 7, 1913.

Early Diagnosis of Pulmonary Tuberculosis.—G. Ph. Lang presents a résumé of our present knowledge of the early stages of tuberculosis. He adheres to the Behring-Römer theory that in the majority of cases pulmonary tuberculosis in the adult is secondary to tuberculosis infection of the glands in childhood, the so called status lymphaticus. The possibility of latent reinfection is shown not only by researches of Weichselbaum, Bartel, Römer, and others on the viability of tubercle bacilli in healed lesions, but also from analogy with tertiary syphilis, which manifests itself from twenty to forty years after the primary infection. As to early diagnosis, the author relies on the so called masked symptoms, the slight but persistent elevation of temperature, and the physical signs at the apices. The various tuberculin tests are of no value, while the x ray is of value only in cases in which consolidation has taken place or in deep seated lesions. Occasionally the positive finding in the sputum may be an early sign, and for this reason the examination of the sputum should invariably include the antiformin and the Much methods. The author cautions against a too enthusiastic attitude toward the diagnosis of incipient tuberculosis, an attitude which may be responsible for an inclusion of nontuberculous affections.

Connection between Gastrointestinal Affections and Pernicious Anemia, Based on Abderhalden's Reaction. Diagnosis of Gastrointestinal Affections by Means of the Abderhalden Reaction.—B. Ph. Kabanoff contributes two preliminary communications, in which he cites some experiments, showing the specific nature of the Abderhalden test when applied to diseased tissues. Thus, in four cases of pernicious anemia the stomach gave a negative reaction in three and a slightly positive in one; the small intestine gave a positive reaction in three; the large intestine gave a negative reaction in the three cases in which the test was applied; the liver gave a negative reaction in the one case in which this organ was tested. From this he concludes that a definite causal relation exists between pernicious anemia and gastrointestinal disturbances. In various gastrointestinal affections the author obtained the following results: In achylia gastrica, the stomach gave a positive, the small intestine and the liver a negative reaction. In one case of acute gastritis all of the organs tested were negative. In a case of hyperacidity of nervous origin the tests were negative. In fermentative dyspepsia only the small intestine was positive. In gastric ulcer the stomach was positive

in another case of gastric ulcer the pylorus was positive. In pyloric ulcer the pylorus was positive. In three cases of duodenal ulcer the duodenum was positive. In one case of appendicitis the appendix alone was positive.

Clinical Observations on Zülzer's Hormonal in the Treatment of Constipation.—P. I. Zarnitzin employed hormonal in twenty-one cases of constipation of long standing, making twenty-six injections, mostly intramuscular. Permanent results were obtained in five; positive results with too short a period of observation in seven; a single good result in two; indefinite in two, and complete failure in five. Of the latter, in two there was spastic constipation, and in three there was a dilated ampulla. The patients bore the injections well, and there were no serious untoward effects. Injections of hormonal in two days produced a temporary fall in pressure, but no increased bowel movement. The author refers to three deaths resulting from hormonal recorded in the literature, but considers this a small percentage of fatalities in over twelve thousand injections, yet they show that the substance is not perfectly harmless and should be used with caution. He advises its use in cases in which all other methods of relief have failed.

LANCET.

November 17, 1923

Cancer of the Prostate.—P. J. Freyer believes that it is possible to enucleate the prostate complete in every case of cancer in which the disease is confined within the true capsule of the gland. When such can be accomplished, a perfect cure may be looked for with the fullest confidence in every case. The operation, moreover, should be attempted in every case in which there is any possibility of enucleation of the gland, even if there are marked adhesions to the surrounding structures, as, even if recurrence ensues, the operation always gives great relief to the patient for a considerable length of time. It also postpones the distress of a permanent suprapubic fistula, a procedure to be left as a last resort. Freyer believes that, when malignant changes develop in the gland before it undergoes adenomatous hypertrophy, it is not possible to remove it effectually by any method yet devised, because, by the time that the disease causes symptoms, it has already invaded the adjacent structures.—Russell Howard describes a new operation for the removal of a carcinomatous prostate, one which includes the removal of all of the pelvic tissues, . . . "between the symphysis in front, the muscular coat of the rectum behind, the constrictor urethra below, and the entrance of the ureters above. . . ." With the patient in the lithotomy position, a horseshoe incision is made in the perineum; the exposed muscular wall of the rectum is followed, the structures in front of it being separated from it to the level of the upper portions of the seminal vesicles; the lateral fibres of the levator ani are severed so as to free the prostate and the base of the bladder, and the wound is temporarily packed with gauze. Then, with the patient in the Trendelenburg position a suprapubic cystostomy is made, the incision being extended downward to admit the entire hand outside of the bladder. Stripping back the peritoneum, the loose tissue in the space of Retzius is removed: the posterior layer of the triangular ligament is dissected from the pubes; the urethra is then divided distally to the fascia, and the lateral separation of the prostate and neck of the bladder is completed. The prostate, still in its capsule, together with the urethra and the neck and base of the bladder, is drawn into the abdominal wound and the base of the bladder is amputated just below the entrance of the ureters. After ligature of the bleeding points the bladder is replaced in the pelvis, and a rubber catheter, having lateral holes at the proper point, is inserted through the remaining urethra into the bladder and is carried out of the abdominal wound, thus allowing escape of urine in both directions. Both wounds are then closed and drained. Recovery is rapid. The abdominal wound is allowed to close first, later the perineal, and, by means of bougies, a urinary channel is established from the bladder to the remaining urethra. Control of urination is soon learned to the extent of a person's being able to retain his urine for six hours.

Jackson's Pericolic Membrane.—John Morley discusses the literature on this structure, reports six cases, one of which was encountered in a child five months old, and presents evidence from studies on human fetuses and on several monkeys which seems to prove conclusively that this structure is of embryonic origin and is in no sense inflammatory. His conclusions are: 1. Jackson's pericolic membrane is of congenital origin and is noninflammatory. 2. It occurs in association with abnormal mobility of the proximal colon, due to a failure of fusion of the ascending mesocolon with the posterior parietal peritoneum. 3. The great omentum, from which Jackson's membrane is derived, is the most primitive agent in fixing the proximal colon to the parietes in the right loin. In cases of mobile proximal colon Jackson's membrane may be the principal means of fixing the colon. 4. Unless it causes kinking of the colon a pericolic membrane is, therefore, rather useful than harmful, and should not be divided. 5. The symptoms and pathological conditions found in association with Jackson's membrane, apart from mechanical obstruction due to the membrane, are primarily due to stasis in the abnormally mobile proximal colon, which is ill adapted to the upright posture. 6. Surgical treatment should be directed to securing the normal position and fixation of the proximal colon by the operation of colopexy.

PRACTITIONER.

November, 1923

Widal's Agglutination Reaction as an Aid in Prognosis in Enteric Fever, Based on a Study of over 1,500 Consecutive Examinations.—H. Harold Scott says that hitherto Widal's reaction has been used only as a means of diagnosis, and from the study of this large number of cases concludes that, unless a brief history of the illness is sent with the specimen, there are many pitfalls in the interpretation of the result from a diagnostic point of view, whereas, with the aid of a few salient points in the history, we may obtain not only help in diagnosis, but also valuable information concerning the prognosis. All sera are tested with both *Bacillus*

typhosus and *Bacillus paratyphosus.* All possible variations are discussed, with the guides to prognosis in each, including mixed infections. When there is a positive reaction with *Bacillus typhosus,* with agglutination of this alone with dilutions of the serum up to one in 100 at least, he has found that if the reaction is marked in high dilution and early, the course of the disease is generally mild; in the average case the reaction is distinct by the seventh day; when the reaction appears late the outlook is more grave. When a mixed infection is present more than one examination must be made and their results considered with especial regard to the persistence of the typhosus reaction and the behavior of the paratyphosus reaction. He also deals with negative reactions, partial reactions, reversed agglutination reaction, and positive reactions in apparently healthy subjects. The entire article deserves careful study.

The Diagnosis and Treatment of Hemic Infection of the Urinary Tract.—Frank Kidd asserts, 1, that pyuria, if accompanied by fever, means that the pus is coming from either the deep urethra or the kidney; 2, that spontaneous natural cure is the rule rather than the exception in hemic infections of the urinary tract; 3, that the kidneys may recover long before the bladder; 4, that lavage of the renal pelvis cures most if not all of the chronic cases; 5, that pyogenic bacteria may enter the urinary tract from the blood stream by way of the prostate and not by the kidney. He does not approve of nephrectomy, except in a few hyperacute cases, to select which requires great surgical judgment, and in a few unilateral chronic cases which have resisted all other treatment for eighteen months or more. He has not found vaccine treatment to be of any great benefit.

On the So Called Movable Kidney Disease.—Gustave Monod condemns the surgical treatment of movable kidney, and asserts that it should be treated like enteroptosis. He applies a belt that will effectually support the abdominal region, keeps the action of the bowels free, preferably by means of salines because of their action as cholagogues, gives a diet principally of meat, and prescribes sodium bicarbonate, half a tumbler of Grand Grille Vichy water every morning, heated to 104° F.

The Effect of Nauheim Baths upon Cardiac Conductivity.—Leslie Thorne thinks that the action of Nauheim baths upon cardiac conductivity and muscle contraction is very beneficial, for it not only accelerates a slow and regulates an irregular conductivity, but it markedly stimulates auricular contraction.

Is Enlarged Prostate the Cause of Residual Urine?—A. G. Miller says that from his experience he would answer this question in the negative. He has met with cases in which there was enlarged prostate without any residual urine, and others in which there was residual urine without any perceptible enlargement of the prostate. He grants that the two conditions usually coexist in patients who present themselves for treatment, especially at hospitals, but thinks that this may be because both conditions are common in old men. He believes that residual urine is the result of not emptying the bladder properly, that this is the outcome of a habit too easily acquired by old men, and that in many cases, if taken early enough, the residual urine can be got rid of by training the bladder to empty itself thoroughly even when enlargement of the prostate is present, unless the bladder has become atonic, flaccid, or sacculated.

BOSTON MEDICAL AND SURGICAL JOURNAL.

December 26, 1912.

Symposium on the Reportability and Control of Venereal Diseases.—S. L. Strong gives an analysis of the letters received in reply to the following questions: 1. Do you believe in the reportability and control of venereal diseases by boards of health? 2. Would it be practical at the present time, considering the general trend of medical opinion, to attempt to bring about the reporting of venereal diseases to the boards of health, by number or by name, such information to be held by the boards as strictly confidential? 3. With reportability, would it be possible for the boards of health to exercise such control over venereal diseases as is now exercised in the case of smallpox, diphtheria, etc.? 4. Would it be feasible at the present time to establish an organization among physicians for the gathering of more accurate statistics in regard to the efficiency of the present treatment of venereal diseases, and the promotion of their reportability and control by boards of health? The conclusions drawn from this analysis are: 1. As to belief in the reportability and control of venereal diseases by the boards of health this canvass seems to show that a majority of physicians do believe in it at the present time. 2. On the matter of practical adaptation and enforcement the profession is about equally divided, the prevailing view being that more efficient means of treating these diseases in hospitals must be provided before such a move can be taken. 3. Venereal diseases cannot probably be controlled to the same degree as smallpox, scarlet faver, diphtheria, etc., for some time to come. 4. The desirability of gathering more accurate statistics regarding the efficiency of the treatment of venereal diseases is widely recognized. This should be done by societies already existing, or by the formation of new organizations with this special object.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

December 21, 1912.

Treatment of Pneumonia with Partially Autolyzed Pneumococci.—E. C. Rosenow and L. Hektoen state that the dose used during the winter of 1911 varied from ten to twenty billion, and the injections were given subcutaneously daily until the temperature reached normal. During the second period, 1912, only one injection of approximately twenty billion was given as soon as the diagnosis was established, while during the past winter from ten to twenty billion were given daily until the temperature became normal. The writers believe that, in view of the facts that the mortality is consistently lower in the injected cases each year, that the average time of the first injection was late (approximately the fifth day), and that the type of cases treated is of the worst, nearly one half of the patients being bad alcoholics, the conclusion that this method of treatment in pneumonia is of value

seems warranted. The results obtained in the series outside the hospital, in which the injections were begun earlier, indicate that by the early administration of the antigen better results can be secured. Further observations require the cooperation of physicians who are in position to give the injections at the earliest possible moment.

Entericoid Fever; Febris entericoides.—D. Riesman cites cases of continued fever resembling typhoid, but not giving the usual laboratory tests or presenting all the clinical features of that disease, and concludes: 1. The term typhoid fever, as commonly used by physicians, includes more than one variety of disease. 2. Only that in which the characteristic serological and cultural tests for the typhoid bacillus are obtained should be called typhoid fever. 3. To the others, which clinically resemble typhoid very closely, the term entericoid fever may be applied. 4. The entericoid fevers are due to different strains of organisms of the paratyphoid group and to others morphologically similar, e. g., Gärtner's *Bacillus enteritidis,* etc. 5. The source of infection is chiefly food derived from unhealthy animals. 6. Food and drink may become contaminated through contact with diseased meat or through rodents, birds, or the discharges of carriers, etc. 7. So called second attacks of typhoid fever are probably entericoid or paratyphoid fever, provided the first was genuine typhoid fever. 8. In all cases of typhoid character careful search should be made for the source of infection, and blood cultures and other tests done for the determination of the infecting agent. 9. By careful combined clinical and laboratory investigation it should eventually be possible to distinguish, according to their specific etiology, the various entericoid diseases now grouped together.

Treatment of Hemoptysis in Pulmonary Tuberculosis.—N. B. Burns states that at the North Reading (Mass.) State Sanatorium the present practice is to discountenance the use of morphine and opium, except in extreme cases, and to substitute a treatment consisting mainly of depletive purgation. As early as possible, 1/100 grain of nitroglycerin is administered subcutaneously, an ice bag is applied to the chest, and the patient is given cracked ice by the mouth. Assuming that he is not suffering from extreme asthenia and is not affected with severe gastroenteritis or any ulceration along the digestive tract, a dose of from one to two ounces of magnesium sulphate is administered from fifteen to thirty minutes after the appearance of the hemoptysis.

Treatment of Paralysis of Anterior Poliomyelitis.—H. W. Frauenthal finds that the best results are obtained by beginning electrical treatment when paralysis appears, and even before the temperature is normal. In the first few days of the paralysis he has applied the Oudin or high frequency current along the spinal column, and feels positive that this has relieved the compression in the cord and hastened recovery. He gives to the muscles involved a sinusoidal current, alternating with a combined galvanic and faradic current which contracts seventy-two times a minute, synchronous with the heart beat. Strychnine may be given internally, or a solution used on a sponge and introduced locally, to increase the contraction of the muscle fibres. The other measures he employs are judicious massage, hydrotherapy, and muscle education. In the last named passive exercises are done before a mirror, and the patient's mind concentrated on the affected muscles.

Heliotherapy, with Special Reference to the Work of Rollier at Leysin.—H. Dietrich reviews the work of Rollier, describing the effect of light on bacteria and their products, the action of light on the human body, and the technic of heliotherapy as used by Rollier. He then speaks of the application of the method in various forms of tuberculosis—spondylitis, coxitis, lymph nodes, and peritoneal tuberculosis.

MEDICAL RECORD.

December 20, 1913.

Aortitis syphilitica.—I. W. Held describes the history, pathogenesis, physical signs, symptomatology, prognosis, and treatment of this condition, of which he has personally observed six cases. As to the prognosis, restitutio ad integrum is entirely out of the question, but if the disease is recognized early and properly treated, life may be prolonged for many years. Huchard considers uremia the most frequent cause of death, and emphasizes the need of the most critical examination of the kidneys in all cases. Grassmann was the first to try salvarsan in luetic aortitis, and he advised that only small doses should be used, and given twice weekly until four doses had been administered. We should not forget the words of P. Ehrlich, that rest is a great factor after the use of salvarsan whenever the heart is diseased. At the end of the course of salvarsan, intramuscular injections of mercury salicylate or inunctions with blue ointment, together with potassium iodide internally, are advised.

The Carcinoma Question as It Pertains to the Uterus.—C. W. Barrett emphasizes the following points: 1. The epithelial cell reaction, known as carcinoma, is probably due to a microorganism or agent as yet unknown. 2. The cell reaction now known as carcinoma may prove to be a primarily protective tissue reaction against the cancer infection. 3. Women come to the age of frequency of cancer with many benign conditions which present an opportunity for the introduction of this agent or furnish the irritation which lights up the malignant proliferating process, or both. 4. Proper attention to these conditions would decidedly reduce cancer of the uterus. 5. These conditions are largely neglected by the profession and the laity. 6. Correction of pelvic pathological conditions, especially as a woman nears the end of the childbearing period, will lessen her chances of having cancer. 7. There is a fair chance of eradicating early cancer, but a poor chance of ameliorating late cancer. 8. Education of the profession and of the public upon these points is urgently needed. 9. Honesty and intelligence should combine, not simply to watch precancerous, suspicious, or early cancer conditions, but to eradicate pathological conditions, whether benign or malignant. There is no tumor, swelling, erosion, ulceration, cystic degeneration, or irritation which it is best to allow to go untreated; if it does not yield to simpler means, it should be removed.

10. Early radical treatment is at present our best method of attack when cancer has once begun, but it is not ideal. We may hope for a better method. 11. Late cancer can often be checked, symptoms ameliorated, nutrition improved, comparative comfort restored, life prolonged, and perhaps occasionally the cancer completely eradicated by single or repeated cauterization, and the same results are announced upon good authority for other measures; but these do not offer enough hope to displace early surgical measures. 12. Surgery must find its greatest success, not in more radical removal, but in earlier opportunity.

Thyroid Disease.—B. Davidson's cases have been treated in the outpatient department of Cornell University during the past two years. The work was undertaken primarily to observe the effect of the Rogers and Beebe serum in the cases, but a number were met with in which serum treatment was not indicated, and it was thought advisable to include these in the report. The patients with simple goitre were advised operation to relieve the pressure symptoms, but as yet they have not followed this advice. The general impression derived from the use of the serum is as follows: 1. There is no doubt that the serum has a marked beneficial influence on hyperthyroidism in many instances. 2. Early cases yield most readily to the treatment. 3. Faithful regularity in the administration is necessary. 4. Rest and hygiene are most essential aids to the serum.

Vaccine Therapy of Pertussis.—P. Luttinger concludes as follows: 1. Pertussis vaccine, used in ten cases of whooping cough, apparently reduced the severity and shortened the duration of the disease. 2. To be effective the vaccine should be given in much larger doses and at shorter intervals than hitherto recommended. 3. A dose of 50,000,000 bacteria should be tested as a prophylactic.

Turbinotomy.—E. A. Griffin says that turpinotomy, or partial excision of the turbinated bone, seems to have been discarded in nasal surgery since the submucous septal operation has come into vogue. If, however, he has a case of nasal obstruction, with its accompanying symptoms of dry throat, postnasal dropping, winter cough, etc., and he finds a moderately large inferior turbinate and a slightly deflected septum, be always attacks the turbinate, rather than touch the septum. Turbinotomy is a simple procedure compared with the submucous septal operation, it gives the patient what he wants—more air room—and stops the postnasal dropping.

AMERICAN JOURNAL OF ORTHOPEDIC SURGERY.

Radiography of the Vertebral Column in Profile in Pott's Disease.—Jacques Calvé and Henri Lelièvre set forth the advantages of the profile as well as the anteroposterior view of x ray, and assert that that view adds materially in the early diagnosis of Pott's disease by the constant finding of a clearly marked thinning of an intervertebral disc; and also permits the following of a case in the formation of a cyphosis, showing gradual destruction of disc and wearing away of vertebræ, thereby producing cyphosis. It aids in the study of treatment, prognosis, and cure, the latter taking place only after five or six years. Good photographs illustrate the advantages.

Experience with Foerster's Operation.—S. J. Hunkin reports fourteen cases of spastic paralysis treated by section of posterior spinal nerve roots, twelve of them of Little's disease, while eleven were in the dorsolumbar region. He had two deaths, the remaining twelve patients recovering, all being more or less improved. Hunkin reports that there was cessation of spasm in all cases immediately after operation, recurring in but one case, which was easily controlled. Reflexes returned in all but one case, and this one complains of an anesthetic band about the hips. The writer gives a detailed account of a case and operation.

Importance of Positive Support in the Curative Treatment of Weak Feet.—Royal Whitman's method consists in making a cast of the entire foot in the corrected position and then, from the cast, making a brace, which is different from the sole plates and has a high internal upright covering the astragaloscaphoid articulation. He avers that it would prevent not only deformity, but the predisposition to it as well; that it will enforce a proper attitude in walking and thus make it an involuntary curative exercise; and that it may be regarded as an active, positive, and most important adjunct in the curative treatment.

Treatment of Pes cavus.—Gwilym G. Davis divides hollow foot into two classes: the spasmodic, irritative, or nonparalytic type and the paralytic type. He states that in the former type there is no paralysis, but a weakening of muscles; distortion being due to overaction of certain muscles. His treatment consists chiefly of elimination of deformity, stopping of spasm, and protection against future discomfort. He advises various simple tenotomies, forcible stretching, and proper shoes. He also states that in the paralytic cases there is no standard treatment for all cases. He uses conservative methods before operating, and discusses various operations on the tarsal bones.

Recurrent Anterior Dislocation of the Shoulder.—James K. Young discusses the etiology of the condition and anatomy of part and describes his operation of locating the pectoralis major muscle, dividing the lower portion and then the latissimus dorsi. In the case he operated in, the bicipital groove was exposed, the pectoralis major and deltoid were sutured, and the wound was closed; then dressed in extended position on a triangular splint for two weeks. This case resulted in a cure, leaving no loss of power.

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

Antibodies in Serum of Patients Recovering from Acute Lobar Pneumonia.—P. W. Clough states that of twelve sera from pneumonia patients, experimented with after crisis or lysis, using the homologous strain of pneumococcus, nine showed a definite protective power against pneumococcus injections in mice as compared with normal serum. Serum obtained during the acute stage of the disease has been observed in two instances to possess no such power. Of eleven cases in which the pha-

gocytic activity of the serum after crisis or lysis was tested *in vitro*, six showed definite activity. This activity has a significance quite different from that of a rise in opsonic index, but is comparable with the activity of potent immune serum, leading to active phagocytosis of a virulent pneumococcus not phagocytable in normal human serum. The phagocytic activity was, with one exception, strictly limited to the homologous strain of organism, derived from the patient whose serum was being tested. The active substances in the serum resist heating at 56° C., and persist *in vitro* for some time. The phagocytic activity of the serum ran closely parallel with its protective power for mice, both in incidence time of appearance, and strict specificity. Clough concludes that the protective action of the serum in lobar pneumonia is directly due to its power of promoting phagocytosis.

Enterogenous Mesenteric Cysts.—R. T. Miller, Jr., reports a case of intestinal obstruction due to a congenital mesenteric cyst causing volvulus. Resection was performed on the fourth day of life, but death followed. The author points out that in the twenty-eight cases of this form of cyst reported since 1900, the cyst was constantly located in the mesentery of the small bowel. Two clinical divisions of the cases, about equal in numbers, can be recognized—those with acute obstruction, requiring prompt surgical treatment, and the latent cases, not uniform in either symptoms or signs, but frequently presenting abdominal fullness, pressure or dragging, a visible enlargement, mild recurrent attacks of partial obstruction, and the physical signs of a freely movable, globular, fluctuating mass, attaining in size that of the adult head, and situated in any quadrant of the abdomen. In these latent cases, a choice must be made between drainage, enucleation, and resection. Drainage has a low primary mortality, but is apt to result in a persistent sinus. Enucleation is best when it can be done without seriously injuring or opening the bowel, and was done ten times in a series of sixteen cases, without a death.

JOURNAL OF NERVOUS AND MENTAL DISEASES.

Alzheimer's Disease with Unusual Neurological Disturbances.—Albert M. Barrett reports a case of Alzheimer's disease in which the first symptoms developed at the unusually early age of thirty-three years, and showed during its course neurological disturbances of a type and degree not before noted. Dementia developed progressively and was ultimately complete. Muscular weakness with spasticity, ataxia, increased tendon reflexes and atrophy were notable symptoms. The speech became indistinct, slow, and stammering, at times explosive, and finally the patient did not talk at all. Death occurred about four years after the appearance of the first symptoms; during the last two years the patient was subject to numerous convulsive seizures, and for the last six months was entirely helpless. At necropsy the brain was found to be greatly atrophied, weighing but 880 gm. There were no gross lesions of the central nervous system, but microscopical examination revealed the presence of plaques and neurofibril alterations described by Alzheimer. In the spinal cord the corticospinal cells were extensively degenerated, with little or no alteration of the ventral horn cells. The thyroid gland was normal.

Psychic Action of Mescaline, with Special Reference to the Mechanism of Visual Hallucinations.—Alwyn Knauer and William J. A. Malony have studied the mental symptoms of mescaline poisoning, produced experimentally, with the view of investigating the complicated mental phenomena of the psychoses. The authors themselves and several volunteering physicians were the subjects, and in all twenty-three experiments were made. The drug was administered hyperdermically in the forearm, but the dose is not mentioned. Intoxication developed markedly in about an hour and was characterized by hallucinations of different types and a limited though unclouded consciousness. Definite delusions appeared in several of the subjects and owed their reality mainly to the affection of the critical faculty. Of the hallucinations, the most vivid and elaborate were the visual, and the authors, after analyzing and classifying the results, emphasize the complexity of the question of hallucinations.

Analysis of Cerebrospinal Fluid in Disease of the Nervous System, Not Including Acute Meningeal Affections.—W. F. Schaller emphasizes the importance of the results of examination of the cerebrospinal fluid in neurological conditions and regards it as a necessary part of a complete neurological examination. In the series forming the basis of the report it was exceptional that the clinical findings were at variance with the laboratory findings. The routine tests employed included the pressure of the fluid, Fehling's reduction test, the globulin reacfions, the cell count, and the Wassermann reaction. Particular attention is called to the necessity of employing relatively large amounts of the cerebrospoinal fluid in the Wassermann test (as much as five volumes compared to blood serum). With most observers, the author has found the fluid of tabes and paresis to give a positive Wassermann reaction more uniformly than the blood serum.

Piblokto or Hysteria among Peary's Eskimos.—A. A. Brill discusses a peculiar form of nervous affection found among the Eskimos, described in Admiral Peary's book *The North Pole*. The natives call this affection *piblokto*, and Peary designates it as a form of hysteria. Of the twenty Eskimo women aboard the *Roosevelt*, eight had attacks of piblokto. Men and children are seldom affected. The attacks consist of an apparently unconscious frenzy lasting for an hour or more, during which the woman frequently disrobes and runs about on the ice or wades in the water with no regard for comfort. Professor MacMillian, of the Peary party, said of the attacks: "It reminded me of a little child discouraged and unhappy because it imagines that no one loves it and therefore runs away." As a matter of fact, the Eskimo woman is commonly neglected and ill treated by her husband; although gross sexual gratification is not lacking, the desire for affection and sympathy is unfulfilled and is probably the determining factor in the production of the attacks.

Proceedings of Societies.

SOUTHERN MEDICAL ASSOCIATION.

The Seventh Annual Meeting, Held at Lexington, Kentucky, November 17, 18, and 19, 1913.

The President, Dr. FRANK A. JONES, of Memphis, in the Chair.

The South's Most Important Public Health Need.—Dr CRESSY L. WILBUR, of Washington, D. C., urged the citizens of the South to stop at nothing short of success in their effort to establish a perfect system by which all deaths and births should be accurately reported. The records of births and deaths, interpreted in the light of progressive sanitary science, were not dry figures, dead and dusty mementoes of the past, but were living facts pregnant with a message of helpfulness and life saving for the men, women, and children of the present and future.

Vital Statistics.—Dr. OSCAR DOWLING, of New Orleans, made the following recommendations: 1. Transmission by this committee to the legislature of each southern State, where needed, a petition for the consideration of, 1, the adoption of the model law in full; 2, appropriation of adequate funds to establish an effective system of collection, compilation, analysis, and application of vital statistics data received; 3, designation of a date for thirty minutes' discussion of reliable vital statistics, the basis of commercial sanitary and social progress in the South; 4, personal effort by members of that committee to have modification of model laws, where they existed, brought more closely into conformity with the provisions; 5, aid to popularization of payment of fees to every local registrar.

Eugenics.—Dr. LEE A. STONE, of Memphis, defined eugenics as that science which taught all people how best to improve the races that were to come, and to cause to develop a higher state of mental and physical perfection among all peoples by teaching perfect breeding. Marriage, the blending of two souls together to make more perfect the future soul of one who was to be born, was the object that Nature had in mind when she gave the world beings of opposite sex. When that time came in our civilization, when men and women before they married would carefully investigate all that might be known of the lives of each, with a view of reaching a perfect union, there would be born as the result of that union the perfect man. Then would the dreams of eugenists come true, and a finer and truer philosophy of life be born.

The Negro in Relation to Public Health.—Dr. C. E. TERRY, of Jacksonville, reported that only a few southern States kept complete and reliable statistics in reference to the negro, and hence much of scientific value was lost. The high mortality rate among negroes from communicable and preventable diseases was a great menace to the general health of the South. Statistics showed that typhoid fever, malaria, measles, scarlet fever, and whooping cough, diphtheria, tuberculosis, and pneumonia were responsible for more than forty per cent. of all deaths among negroes. These same diseases also were responsible for more than twenty-six per cent. of deaths among the whites. The high mortality rate among the whites was directly traceable to the prevalence of these diseases among the negroes. The necessity for raising health standards among the negroes and of inaugurating a campaign of prevention was imperative. Negro citizens lived under the worst sanitary conditions through poverty, racial inferiority, and neglect. But they mingled with the white population in stores, factories, kitchens, and nurseries, and so spread the diseases which were prevalent among them. The health of the negro was the most important subject before the South to-day. The burden of this problem devolved on public officials, sanitarians, and sociologists. He would urge accurate observation of living conditions and experimental methods; no field was so barren of sanitary achievement as the bettering of the health and condition of the negro, and none was more worthy of painstaking effort, presenting as it did the promise of far reaching results of the utmost importance to the southern States. If landlords could be induced to build better houses, if municipalities would insist on better sanitary conditions, if the negro was given more information, and was better educated with reference to social hygiene, there would necessarily be an improvement in the race and this to the benefit of his fellow being, the white man.

Cerebrospinal Meningitis, with Special Reference to Certain Signs or Measures.—Dr. RANDOLPH LYONS, of New Orleans, read an analysis of twenty-one cases of cerebrospinal meningitis with the object in view of determining the relative importance of eight signs or measures in adults. The actual value of the procedures described could not be accurately judged by so small a series of cases, nevertheless the results were suggestive and appeared, in general, to be in conformity with the experience of others in the adult form of cerebrospinal fever. The relative importance of Brudzinski's signs had not been carefully determined in adults. From the point of view of early diagnosis the eight measures fell into the following order of importance: 1. Lumbar puncture stood first amongst the special measures. The first puncture established the diagnosis in ninety-five per cent. of the cases. 2. Next in importance was rigidity of the neck. This could be demonstrated in twenty out of the twenty-one cases on first examination, or ninety-five per cent. 3. Kernig's sign came third. It was present on first examination in ninety per cent. of the cases and at some time during the disease in 100 per cent. 4. The neck sign fell into fourth place. They found that Brudzinski's statement with regard to the relatively greater value of his neck sign over Kernig's sign in children, did not hold good for adults. It was found positive on first examination in seventy-six per cent. of the cases and could be elicited at some time during the course of the affection in 90.4 per cent. 5. Brudzinski's contralateral (identical) reflex came fifth on the list, being present on first examination in only 33.3 per cent. of the cases. 6. Babinski's sign occurred in but three cases or 14.3 per cent. at some time during the disease. In two of the cases it was positive on admission. 7. Macewen's sign was found to be of practically no value in this series. It

could be demonstrated in but one instance. This patient was the only child (five years) in the group. The field of usefulness of this sign seemed to be limited to meningitic affections of early childhood. 8. Last, the presence or absence of the patellar reflex was found to be of no apparent diagnostic importance.

Meningococcus Carriers.—Dr. William Litterer, of Nashville, drew the following conclusions: 1. The viability of the meningococcus isolated from carriers varied greatly in different epidemics. 2. The variability in the resistance of the meningococcus was not a reliable index as to the degree of toxicity of the microorganism. 3. The meningococcus appeared to be of so short a vitality and so fragile an organism outside of its natural habitat (the human body) that it led to the inference that direct transmission (droplet infection, etc.) was probably the only means of conveying the disease. 4. The great majority of healthy persons who harbored the organism could resist the infection. Only two per cent. of the carriers in their series had the disease. 5. The spray could not reach all the deep recesses of the upper air passages, nevertheless it was imperatively indicated in all carriers, for the reason that it either destroyed or mechanically cleansed out all cocci with which it came in direct contact, thereby lessening reinfection, at the same time reducing droplet infection to a minimum. 6. The autogenous vaccine probably played a prominent part in effecting a cure in two cases of the persistent carrier of six months' standing. 7. There were apparently no means at their command in which the persistent carrier could with any degree of regularity be rendered free from the carrier state. 8. In institutional epidemics the wisest procedure was a prompt isolation of all patients, and the search for carriers and their detention, together with the general use of the spray.

Bacteriology of Cerebrospinal Meningitis.—Dr. K. R. Collins, of Atlanta, stated that primary cases of pericarditis, joint lesions, iritis, etc., had been reported where the meningococcus was found to be the only invading organism. Cases of cerebrospinal meningitis, due to the typhoid bacillus, bacillus of tuberculosis, bacillus of influenza, the pneumococcus, and pyogenic organisms, could in most instances be differentiated by finding any one of the organisms in the spinal fluid. Such cases might be found coincident with epidemics of meningococcal origin. Secondary cases of cerebrospinal meningitis were found in many of the infectious diseases, following lesions of pyogenic origin. Henry had reported a case following supramaxillary and submaxillary abscesses due to the fungus actinomycosis. Such cases might sometimes puzzle the physician when occurring in the midst of the epidemic form. It was rarely possible to wait for bacteriological examination to be made before treatment was instituted, but in cases where antimeningitis serum was used, the laboratory findings could frequently be obtained before the second dose was given.

Intrameningeal Treatment of Tabes Dorsalis and Cerebrospinal Syphilis.—Dr. Thomas R. Boggs and Dr. R. R. Snowden, of Baltimore, spoke of the desirability, of direct application, by intraspinal injection, of antisyphilitic drugs in the treatment of cerebrospinal syphilis which long had been recognized. Bichloride, salvarsan, and neosalvarsan had all proved too irritating for direct use except in very minute quantities. They reported the results obtained in eight cases treated by the intraspinal injection of serum removed one hour after the intravenous injection of salvarsan or neosalvarsan. This method was first employed by Swift and Ellis and their technic was followed, with one important exception; Swift and Ellis added normal saline to the serum and injected a forty per cent. solution, whereas they injected larger doses of the undiluted serum. It had been shown by Plaut, Gonder, Swift and Ellis, and others, that such serum had a decided spirochetocidal activity, especially if heated at 56°C. for half an hour. When injected into the spinal canal it was but mildly irritating and its beneficial effects were striking. In carrying out the treatment, blood was withdrawn one hour after the intravenous administration of salvarsan and allowed to clot. The next day the serum was removed, centrifugalized and heated at 56°C. for half an hour. Lumbar puncture was then done, cerebrospinal fluid withdrawn and exactly enough serum injected to replace this fluid. The amounts varied between twenty and thirty-five c. c. and the treatment was repeated every ten to twenty days until the spinal fluid was normal in respect to the cell count and Wassermann test. Eight unselected cases were treated in this manner, five cases of tabes dorsalis, and three cases of cerebrospinal syphilis. In every case there was marked improvement, the cell count dropping to normal and the Wassermann reaction becoming less marked and in most of the cases entirely negative. This method of Swift and Ellis was a step forward in the treatment of cerebrospinal syphilis. In their cases the reactions were not, as a rule, severe, though more marked than those treated with diluted serum, as reported by Swift and Ellis. In two of their cases, where they injected into one patient serum obtained from another, the patient suffered a very violent reaction, while the patient receiving his own serum, at the same time, had no reaction. The most constant result was the disappearance of the lightning pains and other sensory disturbances, and this resulted in a more cheerful mental attitude and a corresponding improvement in the appetite and nutrition. The effect on locomotion was slower in development, and less marked, but definite, and in some cases very great improvement was achieved, rather more pronounced apparently than in patients treated by smaller doses of diluted serum.

Dr. R. H. von Esdorf, of Mobile, said the best thing to do in cases of cerebrospinal meningitis was to try and establish a hospital and get the cases isolated as early as possible, surround them with the best conditions that could be had, conditions which many individuals could not get at their homes. Particularly was this the case in the colored race; he had seen two children down with the disease in the country in one bed and treated with serum, with no hospital facilities, and the bed reeking with filth and wet with urine from the children. If a small hospital could be established and the cases isolated.

it would lower the mortality from this disease materially.

Dr. V. H. Bysshe, of Savannah, had been unable to find an authenticated case of infection of the meninges by the gonococcus in his review of the literature; but owing to the fact that the meningococcus in smears closely resembled the gonococcus, he would suggest that they be on the lookout for infection of the meninges by the gonococcus.

Dr. Lillian H. South, of Bowling Green, mentioned a case in which a diagnosis of meningitis was made from a swab of cotton sent in a sterilized container to the laboratory, and from this one case there arose 100 cases in one town, with thirty-five deaths. Three counties were infected. A physician had told her at the time that there was only one case of meningitis in that town or county. The child from whom the swab was taken died before it could receive the serum. Another child in the same family was seriously ill from meningitis.

Dr. C. C. Bass, of New Orleans, maintained that rigidity of the neck was an important sign in connection with the diagnosis of meningitis. Meningitis was accompanied constantly by fever. These two signs or symptoms of themselves were sufficient on which to base the suspicion of meningitis. If there was sufficient ground on which to suspect meningitis, lumbar puncture was indicated, with examination of the cerebrospinal fluid.

Dr. E. C. Thrash, of Atlanta, maintained that physicians were controlling the active diseases very well, but they had not scratched the surface of germ carriers. Tuberculosis, diphtheria, typhoid fever, were diseases that were disseminated by carriers, and not so much by the active disease. The sooner they began to wake up to the importance of these germ carriers, the more good they would be able to do.

Dr. L. E. La Fetra, of New York, held that one thing that occurred which would often disturb the physician who dealt with children, was pneumonia. Occasionally they would find retraction of the neck, a high leucocytosis, and fever with pneumonia, with no signs they could discover, and the signs might not come out for two or three days. If there was suspicion of meningitis, lumbar puncture should be made. Another thing was that certain cases of poliomyelitis would give them fever and, at times, leucocytosis and stiffness of the neck. These were the cases which had marked sensory symptoms and hypersusceptibility of the nervous system generally.

Doctor Molloy, from the Philippine Islands, wished to call attention to the danger of using cocaine solution which, in the great majority of cases, might not be sterile, in the operative field, thereby carrying infectious material into the spinal canal and endangering the life of the patient.

Dr. L. W. Elias, of Asheville, N. C., said that the classical directions were to give one dose of the serum every day for four days, and if the case improved, to wait and watch. Other directions which seemed to him to be more accurate were to give the serum until the fluid was germ free. One case impressed him very favorably. A little boy, six years of age, in a hopeless condition, was given three or four doses of the serum, shortly after which the fluid contained but few germs, and his recovery was uninterrupted.

Dr. C. C. McLean, of Birmingham, stated that one thing they had to consider in treating meningitis was sudden death following the injection of the serum. He had seen two cases of sudden death from injection of the serum. The blood pressure should be taken along with the injection of the serum, and as soon as the blood pressure began to rise the injection of the serum should be stopped.

Dr. J. R. Dowling, of Albany, N. Y., emphasized the effect of trauma in connection with this disease. He had had two cases in which trauma played a part. When cases were submitted to the nose specialist for operation they must consider the possible dangers which might result from such a condition. Both of these cases were instances of cerebrospinal meningitis excited by operations performed by him.

Dr. Arthur T. McCormack, of Bowling Green, spoke of the importance of spraying the noses and throats of children. In no instance in which a child's nose and throat were sprayed did meningitis occur. This spraying could be done by teachers under the supervision of the health officer.

Dr. Henry Hanson, of Jacksonville, maintained that the use of autogenous vaccines, according to Theobald Smith, was not of much benefit in carrier cases. The carrier case, as a rule, was immune to the organism. A great many of these carrier cases were simply mechanical carriers and the organisms were not very definitely closely associated with the circulation in the system of the individual, and it would be unusual to expect a vaccine to be very efficacious in cases of this kind. Another point to consider in such cases was the virulence of the organism in carrier cases.

Dr. C. E. Terry, of Jacksonville, said that they had recently had in Jacksonville a small epidemic of diphtheria, and four months ago they began to handle these cases in a different way from what had been the custom. They began to make a search for carriers, and whenever a case was reported from a home they took swabs from every member of the family and servants in the house, and segregated the carriers from the noncarriers. While the work was too new to draw any conclusion, they had found out that wherever they had had diphtheria in a neighborhood the proportion of carriers found in that neighborhood had far exceeded the number of carriers found in school rooms where diphtheria was not present in the neighborhood, and presumably the carriers found under those circumstances were virulently infected.

Medical Resurrection and Reconstruction in the South.—Dr. Frank A. Jones, of Memphis, in his president's address, stated that previous to the war of 1861 the medical schools and the medical men were to the fore. They took equal rank with the schools and men in other sections of this great land. They had men in those days untrammeled and unshackled. They had schools without endowments and professors without pay who gave to the world some of the greatest men of the present age. After the war things were in a chaotic state. Medical schools sprang up all over the land, good, bad, and indifferent. They had no State support nor any private funds. This condition of affairs in a great measure brought them into disrepute with some of their neighbors who had not suffered the ills of a devastating and all consuming war. Old

things were passing away. New blood and new life were being instilled. They could see the medical schools and the medical men coming to the front and taking their places where they rightfully belonged, where their influence would, as in the days of yore, be felt. The day was not far distant when medical schools could and would demand recognition, and when they could and would dictate their own standard of medical education and not according to any one man unit of merit for entrance. Much yet remained to be done in adjusting the medical colleges and standards to the rapidly changing conditions.

(To be continued.)

Letters to the Editor.

THE PELLAGRA CASE AGAIN.

NEWCASTLE-ON-TYNE, ENG., *December 11, 1913.*

To the Editors:

It may interest your readers to hear in continuation of this case from November 29th that the aspergillus organism was found by Dr. N. J. Slade on November 8th. This, according to Ceni, is the cause of the infection with pellagra. Tizzoni ascribes it to the pleomorphic *Streptobacillus pellagræ,* perhaps an actinomyces. Sambon concludes that maize has nothing to do with pellagra.

Perroncito suggests that maize is a diet which leads to poverty(of the system); and there can be no doubt about the toxicity of spoilt maize. Alessandrini says "that pellagra is due to an infecting agent in the drinking water, that pellagra is absent where clear running water is drunk, but present where standing or stagnant water is consumed." Long has attributed pellagra to an infection of the intestine by an ameba.

My patient was a healthy, active, and vigorous young fellow, certainly not living on maize or partaking of it; therefore in his case we may dismiss the maize theory. The water, he said, became nasty in the drinking bottles and smelt rather bad; was this the cause? Some of it was pumped water from wells. By reference to the charts, the temperature will be seen to fluctuate, but with a more downward movement later on; gradually the pus lessened, the foul smell disappeared, and the body no longer was rotten. After about eighty days of high temperature, on November 30th it became normal and has remained so up to date. The pus disappeared and the pyemia was cured.

Naturally there is still much emaciation, but the muscles are improving and there is every chance of recovery if nothing internal occurs. On November 8th, Doctor Slade found the aspergillus organism thus, according to Ceni, diagnostic of pellagra, confirming my diagnosis and proving that the dermatitis was not the cause of the illness, but a result of pellagra, and simply a symptom.

W. H. SPURGIN.

435 Westgate Road.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Modern Problems of Biology. Lectures Delivered at the University of Jena, December, 1912. By CHARLES SEDGWICK MINOT, LL. D., Yale, Toronto ,and St. Andrews; D. Sc. Oxford; Director of the Anatomical Laboratories, Harvard Medical School, etc. With Fifty-three Illustrations. Philadelphia: P. Blakiston's Son & Co., 1913. Pp. ix-124. (Price, $1.25.)

This small volume consists of six lectures delivered by the author, when acting as exchange professor, at Jena. They are interesting and being prepared for a general audience are easily understood. In the first lecture the new cell doctrine is discussed, Minot considering the chief problem of biology to be the investigation of the structure and the chemical composition, not of cells, but of the living substance. The remaining lectures deal with cytomorphosis, the doctrine of immortality, the development of death, the determination of sex, and the notion of life. They are all interesting and well repay the brief time expended in their reading.

A Manual of Operative Surgery with Surgical Anatomy and Surface Markings. By DUNCAN C. L. FITZWILLIAMS, M. D., Ch. M., F. R. C. S. Eng., F. R. C. S. Edin., Surgeon in Charge of Out-Patients, St. Mary's Hospital, Senior Assistant to Paddington Green Children's Hospital, etc. New York: William Wood & Co., 1913. Pp. vi-450. (Price, $3.75.)

The textbooks on operative surgery have in the last few years made a great change in the presentation of the subject. The older books confined themselves almost entirely to a description of typical operations as performed in courses on operative surgery on the cadaver. The books were therefore chiefly technical, and the clinical aspects as well as the special technic of the operating room and the adaptation to living tissues were left out of consideration. A change from this older method was very desirable and many excellent works, notably in German and English, have been successful in adapting themselves to present day surgery and surgical technic. The author of this book on operative surgery has gone too far in this direction and has given too much attention to the clinical aspects of the subject and not enough to details of the technic of the various operations. For example, his description of appendicitis is unnecessarily full in a chapter devoted to a description of a technic of appendectomy; the result is that technic does not receive sufficient attention, only one method of abdominal incision and one of dealing with the stump of the appendix being described. A book intended for the student in surgery should not confine itself to the methods of procedure habitually employed by its author, but should include all modern methods from which the student may make his choice in his later work. Too little attention has also been given to the illustrations, which in execution are far behind those now found in the best works on this subject; they add little to the elucidation of the text.

Obstetrics. A Manual for Students and Practitioners. By W. P. MANTON, M. D., Formerly Professor of Obstetrics and Clinical Gynecology in the Detroit College of Medicine, Gynecologist to Harper Hospital, etc. Second Edition, Revised and Enlarged. Including a Selected List of State Board Examination Questions. Illustrated with Ninety-seven Engravings. (The Medical Epitome Series.) Philadelphia and New York: Lea & Febiger, 1913. Pp. xi-292. (Price, $1.)

This little volume of 292 pages contains the whole subject of obstetrics in an abbreviated form,and fills admirably the twofold purpose for which it was created, namely, a convenient manual by which the physician can quickly refresh his memory, and an excellent means by which the student can review his course in obstetrics. To each chapter a number of questions are conveniently appended, drawn from the substance of the foregoing chapter, so that the student may act as his own quiz master. While this is the second edition of the book, it has been so thoroughly revised that it is equivalent to a new book. Following the final chapter is a selected list of State board examination questions, taken from recent examinations held by the medical examiners of the several States, and given as additional assistance to the student in preparing himself on the subject. The book is well illustrated and neatly indexed.

The First Signs of Insanity. Their Prevention and Treatment. By BERNARD HOLLANDER, M. D., Author of Mental Functions of the Brain, Scientific Penology, etc. New York: Funk & Wagnalls Company, 1913. Pp. 347.

Hollander contends that while asylums are indispensable, the fact that we are able to-day to diagnose very mild and harmless cases of insanity imposes the conclusion that their

reatment should not, as is now the case, be delayed until ney can be "certified" as proper subjects for an asylum le advocates individual treatment in the sense that each ase should be carefully studied as soon as the initial symp-oms of mental disorder manifest themselves, and have ne benefit of our therapeutic resources, whether this is irough private medical care, an observation ward, or a eception hospital. The author's aim, therefore, is to point ut the finer distinctions between the normal and abnormal ind and to give an outline of the therapeutic measures in-icated. Being written in a semipopular style, the book is ithin the reach of the general practitioner whom it will reatly aid. That it will prove useful in precisely the irection pointed out by the author is certain; we have lled attention editorially to the imperative need of early ttention in dementia præcox (see our issue for March 8, 913), a disease which furnishes at least twenty-five per ent. of the inmates of our insane asylums.

ehrbuch der praktischen Chirurgie für Aerzte und Studierende. Unter Mitwirkung von Oberarzt Dr. E. BIRCHER in Aarau, Privatdozent Dr. R. HOTTINGER in Zürich, Privatdozent Dr. E. LARDY in Genf, Chefarzt Dr. A. v. MUTACH in Bern, Privatdozent Dr. F. R. NAGER in Zürich, Privatdozent Dr. FRITZ STEINMANN in Bern, herausgegeben von Dr. L. GELPKE, Privatdozent und Chefarzt des Kantonsspitals Baselland, und Dr. C. SCHLATTER, a. o. Professor der Chirurgie an der Universitat Zurich. Mit 270 Abbildungen. Band I: Allgemeines, Kopf, Hals, Brust, Wirbelsäule; Band II: Bauch, Harn- und Sexualorgane, Extremitäten, Gefässunterbindungen, Amputationen, Exartikulationen, Resektionen, Kriegschirurgie. Leipzig: Johann Ambrosius Barth, 1913. Pp. xi-1118.

Works on general surgery have of late years appeared in uch great numbers that the author of any new treatise eels obliged, in his preface, to give some cogent reason or his contribution to the overstocked literature on the ubject. In this instance Schlatter, who is well known n the surgical world as being the first to perform total astrectomy with success, leads one to believe that the ob-ect of the book is to give the results of his wide experi-nce of many years in the field of general surgery. One s disappointed, therefore, to find that the majority of the hapters are written by unknown and, to judge from their tles, presumably young and inexperienced authors, while chlatter has confined himself to the last and comparative-y uninteresting chapter on the surgery of the extremities. The book, to the extent of its being a personal contribu-ion loses its value and interest therefore, and must be iewed on the basis of its worth as a didactic textbook. Considered thus the work is of distinct value; it is well rranged and the various chapters have been written sys-emically and clearly. It is doubtful if it will be able to isplace the excellent books on the subject which have ppeared, of late, both in German and English. The illus-rations are well chosen and the printing is unusually ttractive.

Laboratory Methods. With Special Reference to the Needs of the General Practitioner. By B. G. R. WILLIAMS, M. D., Member of the Illinois State Medical Society, etc., assisted by E. G. C. WILLIAMS, M. D., Formerly Pathologist to the Northern Hospital for the Insane, Traverse City, Mich. With an Introduction by VICTOR C. VAUGHAN, M. D., LL. D., Professor of Hygiene and Physiological Chemistry and Dean of the Department of Medicine and Surgery, University of Michigan. Second Edition. Illustrated with Forty-three Engravings. St. Louis: C. V. Mosby Company, 1913. Pp. 210. (Price, $2.50.)

The second edition of this small book is dedicated to the general practitioner who, according to the authors, must nowadays "be a specialist in all branches of medicine." An attempt is made to assist the physician to conduct easily hose clinical examinations which are inseparably related o daily practice. The various methods of examination of he sputum, the chemistry and biology of the gastric juice, rine, stools, milk, blood, etc., are clearly and succintly described. The book on the whole is a very creditable one; t will prove very useful to those physicians who wish to do good work with little outlay.

Interclinical Notes.

Neale's Monthly for December [illegible] one year's existence its influence is second to none in the country; "with its first number it began to lead American literature." Further on in its Editorial Comment occurs the silly statement that the athletes of old underwent no training; leaders of American literature should have a bowing acquaintance with the classics, enough at all events to have read of the gymnasia and the palæstræ, wherein a lifelong training was undertaken of which our modern athletes have but faint conception.

* * *

A writer in the *Evening World* for December 27th averred that children are taken to a certain private school in Harlem in *luxuriant* automobiles; it is hard to decide whether he meant the automobiles were very abundant or simply exuberant in growth.

* * *

The autobiographical hero of The Passionate Friends is mistaken for a physician in the concluding installment in the January *Red Book*, but this is a trifling incident in H. G. Wells's superb and artistic story, which we commend to all lovers of fiction of high rank. Dr. Rupert Hughes, who forsook the vast certainties of a doctor's career for the few score thousands of the writer, continues his What Will People Say? and will soon have the hero and heroine in an admirable mess. Our Baby's Bath, by Clinton York, speaks learnedly of "boiling the nipple," of boric acid, and Doctor Holt's book; it is most amusing, not less so from F. Fox's drawings.

* * *

The *Outlook* for December 13th tells of the plan of the English department of the State University of North Dakota to foster bible study, after ascertaining that there was among its students a "wondrous and even ridiculous ignorance of that 'fount of English pure and undefiled.'" There is, it appears, among our college students everywhere a wondrous and ridiculous ignorance, not only of the fount of English, but of its course and meanderings, its tributaries, its depth, its history, and of everything else connected with it.

* * *

For those whose parents speak English, it is not difficult to acquire a working knowledge of the language by reading. Examination of New York apartments, however, seldom discloses any space to accommodate books. The newspapers are fond of asserting that their English is good; we grant this freely if we may except the sporting page which constitutes the sole library of apparently some nine tenths of the male population. The English of that page is good too—of its kind; but its vocabulary is too highly specialized and perhaps too limited to furnish a young student with words proper for the discussion of other matters well nigh as important as sport.

* * *

The *Outlook* for December 13th contains an able article on the career and discoveries of our distinguished colleague, Dr. Maria Montessori; she was the first woman doctor in Italy and met with extraordinary opposition on the part of the students when attending lectures. Physicians should be familiar with her teachings, which are of great interest in their relation to child psychology. Margaret Naumberg says of her in this article: "She has the mind of a keen and critical observer, but it is ever in conflict with her warm and intuitive sympathies. When roused to fight for a principle, her courage is boundless. When called upon to meet social duties, her courage often fails her. Sometimes the sudden arrival of a stranger will make her draw back within herself. It is curious that a woman who has achieved such sure distinction and is well aware of her strong personality should still have moments of embarrassing shyness. It explains why some of the people who meet Montessori come away untouched by the hidden spark of her real personality."

* * *

We are pained to note that bluffing is one of the methods advised by Dr. Frank P. Davis in his excellent little book *How to Collect a Doctor Bill* (Physicians Drug News Co., Newark, N. J., 1913, $1 net). As Doctor Davis says he has collected over ninety per cent. of his fees, his

advice is worth reading. Thirty pages are devoted to various ingenious methods of getting one's money honorably, and sixty more to the laws on the subject in force in the different States. As a famous stage character used to say, "Business is Geschäft," and physicians ought really to know more of the subject than they do.

The physician who is fond of photography will thank Burroughs, Wellcome & Co., of London, for their neat pocket *Wellcome Photographic Exposure Record*. The United States edition contains nearly 300 pages for pencilled records together with full instructions for the proper time of exposure at different hours and under different conditions of light and shade; an ingenious mechanism is attached to the inside back cover by which quick calculations may be made.

Meetings of Local Medical Societies.

MONDAY, *January 5th.*—Clinical Society of the New York Nose, Throat, and Lung Hospital; German Medical Society of the City of New York; Utica Medical Library Association; Niagara Falls Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society; Brooklyn Hospital Club; Roswell Park Medical Club, Buffalo; Hornell Medical and Surgical Association.

TUESDAY, *January 6th.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society (annual); Buffalo Academy of Medicine (Section in Surgery); Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Amsterdam City Medical Society (annual); Lockport Academy of Medicine; Syracuse Academy of Medicine; Ogdensburgh Medical Association; Medical Association of Troy and Vicinity (annual); Long Island Medical Society; Bridgeport, Conn., Medical Association; Hudson County, N. J., Medical Association (Jersey City).

WEDNESDAY, *January 7th.*—Brooklyn Society for Neurology; Society of Alumni of Bellevue Hospital; Harlem Medical Association; Psychiatric Society of New York; Society of Alumni of St. John's Hospital, Brooklyn; Bronx Medical Association; Schenectady Academy of Medicine; Elmira Academy of Medicine.

THURSDAY, *January 8th.*—New York Academy of Medicine (Section in Pediatrics); Brooklyn Pathological Society; West Side Clinical Society, New York; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association of Yonkers, N. Y.; Gloversville and Johnstown Medical and Surgical Association; Physicians' Club of Middletown; Buffalo Ophthalmological Club; Jamestown Medical Society; Society of the Village of Canandaigua (annual).

FRIDAY, *January 9th.*—New York Academy of Medicine (Section in Otology); New York Society of Dermatology and Genitourinary Surgery); Eastern Medical Society of the City of New York; Society of Ex-Internes of the German Hospital in Brooklyn; Saratoga Springs Medical Society.

SATURDAY, *January 10th.*—Therapeutic Club, New York.

Official News.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending December 27, 1913:

Baker, David, Major, Medical Corps. Arrived at Fort Sill on December 15th for duty. **Coffin,** J. M., Captain, Medical Corps. Ordered from Fort Riley to Columbus, N. M., for temporary duty. **Connolly,** P. B., First Lieutenant, Medical Corps. Leave of absence extended ten days. **Mitchell,** Leopold, First Lieutenant, Medical Reserve Corps. Ordered to Fort Liscum during the absence of Lieutenant von Schrader.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Department of the United States Navy for the week ending December 27, 1913:

Angeny, G. L., Surgeon. Detached from the *New Jersey* and ordered to the *Virginia*. **Carpenter,** D. N., Surgeon. Detached from the *Tennessee* and ordered to the First Regiment, advance base brigade. **Charlton,** C. F., Passed Assistant Surgeon. Detached from the *Panther* and ordered to the First Regiment, advance base brigade. **Crow,** G. B., Passed Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Hospital, Brooklyn, N. Y. **Dunn,** H. A., Surgeon. Detached from the *Solace* and ordered to the *Kearsarge*. **Fauntleroy,** A. M., Surgeon. Detached from the *Solace* and transferred to waiting orders. **Garton,** W. M., Surgeon. Detached from the *Kearsarge* and ordered to the *Solace*. **Koltes,** F. X., Passed Assistant Surgeon. Detached from the *North Dakota* and ordered to the First Regiment, advance base brigade. **McGuire,** L. W., Passed Assistant Surgeon. Detached from the Receiving Ship, Norfolk, Va., and ordered to the First Regiment, advance base brigade. **O'Malley,** J. J., Assistant Surgeon. Detached from the *Albany* and ordered home to await orders. **Pollard,** J. B., Passed Assistant Surgeon. Ordered to the *Prairie*. **Richardson,** R. R., Surgeon. Detached from the *Virginia* and ordered to the *New Jersey*. **Sheean,** R. F., Assistant Surgeon. Detached from the Atlantic Reserve Fleet and ordered to the First Regiment, advance base brigade. **Stalnaker,** P. R., Passed Assistant Surgeon. Detached from the *Prairie* and ordered to the New York Hospital for treatment. **Strine,** H. F., Passed Assistant Surgeon. Detached from the Norfolk Hospital and ordered to the *Solace*. **Strite,** C. E., Passed Assistant Surgeon. Detached from the *Virginia* and ordered to the *Michigan*. **Woods,** E. L., Passed Assistant Surgeon. Ordered to the Naval Proving Grounds, Indian Head, Maryland, for temporary duty.

Births, Marriages, and Deaths.

Married.

Carrel—de la Mairie.—In Paris, France, on Friday, December 26th, Dr. Alexis Carrel, of New York, and Madame de la Mairie. **Lawson—Kern.**—In Kerncliffe, Va., on Thursday, December 25th, Dr. George R. Lawson and Miss Julia Kern. **White—Rossman.**—In Reno, Nev., on Thursday, December 25th, Dr. George Starr White, of New York, and Miss Ada A. Rossman.

Died.

Crummey.—In Los Angeles, Cal., on Wednesday, December 17th, Dr. Frank W. Crummey. **Erskine.**—In Memphis, Tenn., on Saturday, December 13th, Dr. Alexander O. Erskine, aged eighty-one years. **Fernandez.**—In Jacksonville, Fla., on Monday, December 15th, Dr. Juan Domingo Fernandez. **Frisbie.**—In Newton, Mass., on Wednesday, December 17th, Dr. Jesse Franklin Frisbie, aged seventy-five years. **Godfrey.**—In South Pasadena, Cal., on Wednesday, December 17th, Dr. E. L. B. Godfrey, of Camden, N. J., aged sixty-three years. **Gowan.**—In Detroit, Mich., on Tuesday, December 16th, Dr. William H. Gowan, aged fifty-nine years. **Hermance.**—In Yonkers, N. Y., on Monday, December 22d, Dr. Edgar Martindale Hermance, aged fifty-nine years. **Johnson.**—In Hightstown, N. J., on Wednesday, December 17th, Dr. Joseph P. Johnson, aged seventy-six years. **Lane.**—In Cambridge, Mass., on Sunday, December 21st, Dr. William C. Lane, aged fifty-nine years. **Mossman.**—In Westminster, Mass., on Friday, December 19th, Dr. Alvaro E. Mossman, aged fifty-six years. **Purdy.**—In New York, on Thursday, December 25th, Dr. Alfred E. M. Purdy, aged seventy-five years. **Short.**—In Portland, Ore., on Thursday, December 18th, Dr. F. A. Short. **Taggart.**—In San Francisco, Cal., on Friday, December 19th, Dr. H. W. Taggart, of San Mateo. **Wagenseller.**—In Selinsgrove, Pa., on Saturday, December 20th, Dr. Benjamin F. Wagenseller, aged seventy-six years. **Watson.**—In Pittsburgh, Pa., on Wednesday, December 17th, Dr. Ada M. Watson, aged forty-seven years.

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Original Communications.

ANOCI ASSOCIATION.

BY GEORGE W. CRILE, M. D.,
Cleveland.

The steady fall in operative mortality rates since the inauguration of the aseptic era is due to the improvement in technic and to the exercise of a more critical judgment in the selection of cases. While the degree of protection and the standardization of technic determine the general end result, the result secured by the individual operator depends on two factors, his personal and operative judgment—and here there is a wide range of difference—and his policy in the selection of cases for operation. By the selection of only those cases that have the required resistance to endure his technic and his hospital organization, an indifferent operator may show as low a mortality rate as is shown by the most expert operator who has the advantage of the best hospital organization, but who includes all justifiable hazards. Unless all the facts are known, therefore, comparisons of individual statistics may be of no value.

A better clue to the value of methods is found in a study of the postooperative morbidity, because the morbidity is governed by the same influences that govern the mortality. It is the purpose of this paper to present a study of the result of the morbidity and mortality of the "ether unprotected operation" as compared with the "nitrous oxide-anoci" operation. The operations on which this study is based were performed by my associates and myself in the same hospital and under similar conditions.

After the operations performed under ether anesthesia alone we were confronted constantly with a familiar train of disastrous sequelæ, painful to the patient and discouraging to the surgeon. The immediate sequelæ included gas pain, nausea, and aseptic wound fever. The later results ranged all the way from painful scar alone to the long train of symptoms accompanying postoperative neurasthenia.

Since the same train of effects may be seen in persons who have been traumatized in accidents and also in physically uninjured persons who have undergone some psychic shock or prolonged nervous strain, it became evident both that inhalation anesthesia had no power to prevent the train of symptoms, and that their cause must be found, not in the immediate field of the operation, but in some lesion of the brain tissue.

That only a few of the brain cells are "asleep" in inhalation anesthesia is shown constantly in the course of the operation itself by the responses of the vasomotor, the cardiac, and the respiratory centres to the traumatic stimuli. The examination of the brain cells of animals subjected to trauma while under ether anesthesia showed exhaustion, varying according to the extent and intensity of the injury inflicted. That is, we proved that the traumatic impulses do reach and influence every portion of the brain—excepting perhaps the few cells influenced by the anesthetic—despite the complete paralysis of voluntary motion and the loss of consciousness due to inhalation anesthesia. In every case, also, we found that the changes in the brain cells of the cortex and of the cerebellum were more marked than those in the medulla and cord. We were compelled to conclude, therefore, that although ether anesthesia produces unconsciousness, it is in reality only a veneer, as it protects but few of the brain cells against the trauma of surgical operation

If the cause of morbid results from operation was due to the brain exhaustion caused by traumatic impulses from the seat of injury, it was logical to conclude that they could be prevented if the connection between the field of operation and the brain was interrupted; and we reasoned that this could be done by preceding each division of tissue by the infiltration of a local anesthetic. Our results abundantly justified our theory, and we adopted a new operative principle, coining for it the name *anoci association*, since by its use all *nocuous* or harmful *associations* are excluded from the brain.

It might be argued, and has been, that the use of local anesthesia should do away with all need of a general inhalation anesthetic. In certain selected cases this may be true, but we should remember that not only the contact, but the distance ceptors as well carry the nocuous impulses to the brain; also that the preoperative psychic strain may have deleterious effects. The complete anoci association, then, includes a lessening of preoperative psychic strain by the administration of solacing drugs; the administration of a general inhalation anesthetic to obliterate harmful impressions which might be received in the course of the operation by the distance ceptors; and the use of a local anesthetic to interrupt the passage to the brain of the traumatic stimuli from the field of the operation.

Before proceeding to the description of the technic employed in abdominal operations, let me say a word regarding our reasons for making nitrous oxide our anesthetic of choice.

Ether anesthesia has, in truth, certain advantages. It is relatively safe in inexperienced hands; its bulk is small; it is inexpensive; and it requires the sim-

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plest apparatus for administration. Against ether stand the malodor; the choking sensation in going under its influence; the drunken nausea sensation when becoming conscious again; and the fact that the dose required to dissolve the lipoid in the brain sufficiently to cause anesthesia, also dissolves the lipoids in the liver, kidney, red blood corpuscles, and other important structures. Ether also chemically hinders or prevents phagocytosis, hence in addition to anesthesia this powerful chemical solvent may produce nephritis, pneumonia, anemia, and many other tissue impairments. Besides, in the presence of infection ether arrays itself on the side of infection against the patient. We have already referred to the sense of irritation and suffocation when going under the influence of ether. This is probably the meaning of the "stage of excitement" because the feeling of suffocation is one of the most powerful of brain stimulants.

These objections led us to turn to nitrous oxide, an anesthetic pleasant to take, devoid of baneful afterresults, and serving as a measurable protection against shock, because as our experiments have shown, by its hindrance to oxidation, nitrous oxide diminishes the change in the brain cells which would otherwise be caused by the emotional and traumatic stimulation incident to the operation.

To carry out the principle of anoci association requires a careful and expensive technic. We have shown that the desired end cannot be obtained by the use of a single anesthetic. The preoperative strain must be reduced by the hypodermic administration of morphine and scopolamine; an inhalation anesthetic must be used to exclude the psychic stimulation of the brain cells in the course of the operation, and the anesthetic of choice should be nitrous oxide, which is unsafe in the hands of any but a skilled anesthetist; a local anesthetic must be used progressively in the course of the operation to protect the brain from local operative injury; and finally the postoperative effects must be eliminated by a local anesthetic of lasting effect.

For the hospital this means increased expense; for the surgeon and the anesthetist it means special training; for the individual patient it means the elimination of the dread of the operation and the prolonged afterresults which have so often been sufficient to deter him from accepting the only means of rescue; and finally, for the general public it means the satisfaction which comes from a decrease in the mortality and the morbidity rate, since by these means morbid results and death from shock are eliminated. On account of the last two conclusions, certainly the first is to be disregarded. The expense must be borne, the surgeon and anesthetist must be trained, if the increased comfort and safety of the patient are to be gained.

A detailed description of this technic in abdominal and goitre operations will be sufficient to indicate the universal application of the principle.

ANOCI ASSOCIATION IN ABDOMINAL OPERATIONS.

1. Excluding infants, the aged and patients with depressed vitality, we administer as an average one sixth of a grain of morphine and 1/150 of a grain of scopolamine one hour before operation.

2. If local anesthesia alone is employed, novocaine in one to 400 solution is used by local infiltration.

3. If inhalation anesthesia is employed, nitrous oxide is administered, either alone or with ether added as required.

4. As soon as the patient is unconscious, first the skin and then the subcutaneous tissues are infiltrated with one to 400 novocaine. The novocaine is spread by immediate local pressure with the hand. Incision through this anesthetized zone exposes the fascia which is novocainized, subjected to pressure, and then divided. In succession also the remaining muscles or posterior sheath and the peritoneum are infiltrated with novocaine, subjected to pressure, and divided within the blocked zone. If the blocking has been complete, then within the opened abdomen there will be no increased intraabdominal pressure, no tendency to expulsion of the intestines, and no muscular rigidity.

5. The peritoneum is next everted and infiltrated with a one half per cent. solution of quinine and urea hydrochloride, so that the line of proposed suture is completely surrounded. As before, momentary pressure serves to spread the anesthetic. This infiltration of quinine and urea hydrochloride serves as a block which may last for several days. It prevents, or at least minimizes the postoperative wound pain and gas pains, and by so much prevents or minimizes postoperative shock. Quinine and urea cause a certain amount of edema of tissue, which lasts for some time after the wound is healed.

6. With this technic the relaxed abdominal wall permits the easy gentle exploration of the entire abdominal cavity. If there is no cancer in the field of operation and if no acute infection is present, then the following regions may be blocked as completely and in the same manner as the abdominal wall, viz., the mesoappendix, the base of the gallbladder, the uterus, the broad and round ligaments, the mesentery, and any part of the parietal peritoneum. Since operations on the stomach and intestines cause no pain if they are made without pulling on their attachments, in such operations no novocaine block is required.

In operations carried out in this manner the closure of the upper abdomen is as easy as the closure of the lower; all is done with ease in the perfect relaxation. What is the result? No matter how extensive the operation, no matter how weak the patient, no matter what part is involved, if anoci technic is perfectly carried out, the pulse rate at the end of the operation is the same as at the beginning. The postoperative rise of temperature, the acceleration of the pulse, the pain, the nausea, and the distention are minimized or wholly prevented.

ANOCI ASSOCIATION IN GRAVES'S DISEASE.

I believe everyone will agree with me that a technic that can carry an advanced exophthalmic goitre case through an operation without increasing the pulse rate, can all the more readily do as much for any other condition.

If *ligation* is made, it may be performed without removing the patient from his bed. In such a case nitrous oxide may or may not be administered, but a complete blocking of the local field with novocaine

during the operation is essential, as is also a complete quinine and urea hydrochloride infiltration at the close of the operation.

If *lobectomy* is to be performed, fictitious anesthesia under the guise of an inhalation treatment is administered for several days previous to the operation. On some day, then, without his knowledge, but with previous consent, the patient is anesthetized in his own room and so is kept free from preoperative psychic strain. When completely anesthetized, the patient is taken to the operating room. The progressive division of tissue is preceded by a progressive blocking with one to 400 novocaine, so that no activating impulse may reach the brain. Before the wound is closed the entire raw field is infiltrated in every part with quinine and urea hydrochloride. The patient, while still unconscious, is returned to his room and anesthesia is continued until the room is completely restored to its previous condition. In the course of the whole cycle from his room to the operation and return, the brain has received no activating stimuli and as a result there can be no change in the pulse.

This immediate control, however, is not the end of the benefit to the patient. *The postoperative hyperthyroidism is prevented or minimized,* that is, to the same extent that the *immediate* results are improved, so are the *later clinical* results improved.

Every surgeon knows the disastrous results to a patient suffering with Graves's disease when he is subjected to a severe psychic shock—to a heavy strain or to deep worry. The disease is aggravated for weeks or for months and even death may result. So the stress of facing the ordeal of an operation subjects the patient to a strain which may be perpetuated for days, weeks, or months by its frequent recall, or death may be the immediate result. From this handicap the anoci patient is free, and by so much is his convalescence speeded on its way.

The end results of operations under anoci association are the best proof of the value of this method. The contrast is indeed striking when we compare the postoperative records of anoci patients with those of patients operated on without this protection. Shock, gas pain, nausea and vomiting, backache, aseptic wound fever, infection, pneumonia, nephritis, painful scar, neurasthenia, hyperthyroidism—all the long train of baffling postoperative phenomena, discouraging to patient and surgeon alike—are diminished or wholly prevented by anoci, while, most important of all, the decreasing mortality rate seems to be the final argument in favor of this technic.

With the exception of intracranial operations, these improved end results are shown in operations of every kind. As in my description of the technic, however, I shall summarize the results secured by my colleagues and myself in two fields only—abdominal surgery and operations for exophthalmic goitre.

Shock. Perhaps the most striking as well as the most inclusive statement that can be made regarding the value of anoci technic is that *it eliminates shock.* By this statement I do not mean that the patient has escaped a dangerous depression. I mean to say that there is no injury to the brain cells; no increase of the activating internal secretions; no alteration of the brain threshold; no injury beyond that caused by the nervous strain produced by the previous fear of the operation. Again and again we have seen a greater preoperative than postoperative reaction. No matter how extensive the operation, no matter how feeble the patient, in the complete anoci case the pulse rate is never advanced. This applies to resections of the stomach and intestines, and to the most explosive cases of Graves's disease.

Pain. Infiltration of the operative field with one half per cent. quinine and urea hydrochloride will suspend all pain for approximately forty-eight hours. But, since this agent causes edema that may last for some time, it should be thus diffusely used in critical cases only. The sharp dissection and precise technic, however, as well as the gentle handling that are a part of the anoci technic, in themselves minimize pain.

Postoperative gas pain. This baffling phenomenon may be largely or wholly prevented by the technic already described, i. e., by the hypodermic infiltration with quinine and urea hydrochloride of a wide margin of tissue, including every part of the divided peritoneum. The stitches must be inserted within the blocked zone. Postoperative gas pain can be explained as a biological adaptation to overcome infection. In the course of evolution all abdominal penetrations are infected, but the peritoneum is able to overcome most infections if they can be localized. To localize an infection the intestine and abdominal wall must be kept fixed against each other; that they may do so each must be inhibited; the intestine must be distended with gas and fixed, then digestion must cease. If digestion is arrested, then there is anorexia, or even vomiting to expel food from the stomach. This shows us how postoperative gas pain is due to a biological adaptation to overcome infection, and explains its resemblance to incipient peritonitis. Nature does not depend upon the surgeon, or perhaps she knows the surgeon too well. The test of this hypothesis is easily made. If the brain through which this adaptive response is made is kept in ignorance of the incision into the peritoneum, *a,* by progressive novocaine blocking throughout the operation and, *b,* by postoperative quinine and urea blocking to break later communication with the brain through stitch tension, there should be no gas pain. Clinical experience has abundantly confirmed this hypothesis. It must be remembered that if a single nerve filament escapes the block there will be gas pain.

Aseptic wound fever. Since it is a physical law that any form of force may be converted into heat, and that heat thus produced, if not at once transformed into motion, must increase the temperature of the body affected, we see readily why any stimulus, mechanical or physical, which normally would cause increased motor activity, must cause a rise in temperature if complete motor expression is impossible. Anything, therefore, that drives the motor mechanism of the body beyond the point of normal expression will cause fever. Anger, athletic contests, fear, and physical injuries all produce a rapid oxidation of certain body compounds too great for complete translation into motion.

In operations under general anesthesia only, we

expected, as a routine, to see some postoperative rise of temperature as a result of the suppressed power of motor response to the physical and psychical injury; but by the use of anoci association, both during and after the operation, we discovered no change in the postoperative temperature and pulse rate. We were therefore forced to the conclusion that, barring infection and the absorption of hemoglobin, postoperative fever is the result of increased oxidation, this being in turn the result of the psychic and traumatic stimuli of the operation to which natural response has been denied.

Nausea and vomiting. Nausea and vomiting are caused mainly by the anesthetic narcotics, and are a part of the gas pain phenomenon. Anoci with nitrous oxide obviates the ether and gas pain nausea. There may be morphine nausea, however, to the degree ordinarily caused by this drug.

Backache. In the anoci operation the patient rests on a water bed; under the mild nitrous oxide anesthesia the muscles are not relaxed; hence with the elimination of the heavy strain on the ligaments and points, backache is averted, excepting such backache as is produced by the technic of certain abdominal operations, such as supravaginal hysterectomy. This, too, may be avoided by a complete infiltration of the stumps with the nerve blocking anesthetic.

Infection. Because ether anesthetizes the phagocyte as well as the man, the patient is in the position of a citadel when, at the hour of assault by the enemy, the defenders are dead drunk in the trenches. By the use of nitrous oxide in the anoci operation the phagocyte defenders are ready for action, and the danger of infection is therefore lessened.

Pneumonia. For perhaps a similar reason pneumonia is rare after an anoci operation; so, too, is phlebitis less common.

Nephritis. The lipoid solvent action of ether is sufficient reason for the ether nephritis, as the renal epithelium contains much lipoid substance. Then, too, other products of ether solution in various parts of the body are thrown on the kidneys for elimination. The use of nitrous oxide relieves the kidneys from this strain, and the danger of nephritis from this cause is eliminated.

Painful scar. I postulate that the lesion of a painful scar is in the brain, not in the scar; that it is due to the low threshold produced by injury, and is intimately connected with a fundamental principle of nerve conduction. This fundamental principle relates to the fact that a strong traumatic or psychic stimulus produces some change in the conductivity along its cerebral arc, the effect of which is to lower the threshold of that arc. This might be illustrated by the phenomena following a holdup at the point of a pistol on a certain street corner. For a long time following such a psychic stress any association with that corner would recapitulate the experience. In this manner throughout life various experiences may lower the threshold in innumerable ways. I assume that there is a similar result after a traumatic stimulus. The arc receiving the stimulus suffers a lowered threshold, hence, from that time on, mere trifles become adequate stimuli. Such a result is seen in the sensitiveness after fractures and in the painful stumps of crushed limbs.

Now if an operation is so performed that no strong stimulus reaches the brain either before or after the operation, then the thresholds of the cerebral arc from the wound will not be lowered. Since the threshold is not lowered, contact with the scar or any injury to that part will have no more effect than contact with any other part of the body. In other words, the scar will be no more sensitive than is the skin elsewhere. Hence, we see how painful scar may be prevented by the complete anoci. Our clinical data seem to support this hypothesis, although it has not as yet been fully worked out.

Neurasthenia. When in the night one is threatened with an unknown danger, the brain threshold is always lowered—apparently as an adaptation to the more swift and accurate detection of the danger. Likewise when one has received a crushing physical injury, there is a universal lowering of the threshold. During these states of tenseness minor stimuli have major effects, or, in other words, one is "nervous."

Now, as we have seen, the subconscious brain is tortured directly during unblocked operations under inhalation anesthesia. The resultant general effect on the brain thresholds is demonstrably the same as if the injury had been inflicted without anesthesia —i. e., after the ordeal of punishment of the subconscious mind during an operation, the patient emerges "nervous," "exhausted," and since a low threshold is lavish in its waste of nervous energy, recuperation is slow. Hence there results a period of postoperative nervouness, of postoperative loss of efficiency. It is obvious, and clinical experience abundantly proves, that the threshold is preserved by complete anoci, hence the unpleasant, damaging postoperative phenomena are avoided.

So much for the postoperative morbidity. Not only does the surgeon, but also do the patient, the interne, and the nurse corroborate the story.

Mortality. Comparing the last 1,000 operations performed by my associates, Doctor Lower and Doctor Sloan, by my resident staff at Lakeside Hospital, and by myself before we adopted the fully developed anoci technic with the last 1,000 operations, we find that in the former the mortality rate was 4.6 per cent., while in the last 1,000 anoci operations the mortality rate was 0.8 per cent.

1021 Prospect Avenue.

IMPORTANT FACTORS WHICH INFLUENCE THE IMMEDIATE AND THE END RESULTS OF SURGICAL OPERATIONS.

By William E. Lower, M. D.,
Cleveland, Ohio,
Associate Surgeon, Lakeside Hospital.

We are told that he who would have the best promise of a happy and healthful life should first choose his grandparents. In like manner the surgeon's best assurance for the successful outcome of a serious operation would be to have the patient come under his care long before the development of the trouble from which relief is desired. Unfortunately—or fortunately, according to one's point of

view—neither of these possible factors of success is within the reach of any individual or surgeon. The individual, however, is finding that by intelligent selfcontrol he can go far toward counteracting the evil tendencies derived from his ancestral or environmental past; or if ancestors and environment have been all that could be desired, then by his own efforts he can increase the benefits he has thus acquired. The surgeon also, who too often must deal with patients sadly handicapped by conditions which, if known in time, might have been controlled, is finding that by careful, unhastened, patient preparation of his patient he may do much to counteract the evil results of past environment.

In other words, the work of the surgeon does not begin in the operating room, or with the immediate mechanical preparation of the patient for operation, nor does it end with the healing of the physical wound. In the operating room and during the process of healing also the patient must be considered as a whole. That is, the surgeon, and the members of his office staff, the hospital superintendent, the interne, the nurse, the orderly—everyone who comes into relation with the patient must bear in mind that even apparently slight factors may contribute—mightily even—to his ultimate welfare. Already we have come to realize to some extent that human beings are integral organisms and that one part cannot suffer without the coincident suffering of all the rest. Yet we are prone to forget that the reverse of this proposition must be true also, that any factor which contributes to the welfare or improvement of the condition of one part will contribute also to the welfare of all the rest. It is our purpose, therefore, in this paper to discuss certain general factors, which as they are regarded or disregarded affect favorably or unfavorably the condition of some part of the organism of the patient and hence accelerate or retard his recovery.

While all surgeons recognize the far reaching favorable or unfavorable influences of such factors as shock, the anesthetic, asepsis, preparation, aftercare, etc., and to some extent those of environmental conditions, few have considered carefully the underlying reasons for the bearing of these factors upon the immediate and the remote results of surgical operations.

During the past twenty years, the past ten even, the mortality rate following surgical operations has been so reduced that the surgeon justly feels satisfied with present day results. The truly conscientious and progressive surgeon, however, while he shares in the general satisfaction with results already obtained, is still striving to make from the present best a future better. To accomplish such a task requires an amount of skill, thought, patience, and finesse which the layman and the average physician even cannot appreciate.

To arrive at the keenest appreciation of the practical value of the methods here proposed, it must be borne in mind that the human organism has been slowly developed through an indeterminate period of time from the lowest form of life; and that the steps through which the organism has been evolved have each been the result of a need for the adaptation of the organism to some salient factor in its environment. Every living organism is simply the resultant of the responses which have been made to environment by its progenitors and by itself. These responses are adaptive and selective—that is, if an environmental stimulus be harmful the organism endeavors to repel it—to get away from it; if beneficial the organism utilizes it for its own development or sustenance. If a given stimulus is continually present in the environment it sets its stamp forever upon the organism by a structural alteration which fits the organism to cope effectually with that environmental element. By means of these successive adaptations to environment the spark of life—first manifested in the unicellular protozoan—has come to animate the most highly developed organism—man. Those who would gain a clear comprehension of this mechanistic theory of life may well peruse the address of Doctor Schaefer before the British Association for the Advancement of Science in September, 1912, on Life, ts Nature, Origin, and Maintenance. For our purpose in this paper, however a few examples of adaptation will be sufficient to explain their practical significance for the surgeon.

From the foregoing it seems obvious that the conduct as well as the structure of the individual is dependent upon his phylogeny—ancestral history, and upon his ontogeny—personal history. The newborn babe does not have to be taught the sucking action, or to withdraw its foot or hand if pricked or burned. The withdrawal of one's foot from a pin prick or even a tickling stimulus is not a voluntary action—it is done in sleep—for unconsciousness does not prevent the stimuli from passing through the afferent nerves to the brain, nor does it prevent the brain from responding by sending out the efferent impulses which result in muscular contractions. The sucking of the babe is an action which results from phylogenetic experience, while the reactions required for the use of a knife and fork, must be learned by the personal experience of the individual. The various organic activities required in the latter case, however, are just as truly responses to stimuli as are those in the former.

All actions, whether they be instinctive or acquired, are performed at the expense of the organism. If they are long continued or repeated at short intervals, so that there is not sufficient time for rest between them, the organism wears out and can no longer respond. That this is true we know from general observation, but laboratory experimentation was needed to show that it is not the arm, or the leg, or the organ of the special senses—but the brain which is mainly responsible for the failure of the stimulated part to respond.

By the study of hundreds of stained sections of brain cells taken from animals which had been subjected to continued stimulation, Austin has demonstrated not only that the brain cells are exhausted, but that the degree of exhaustion can be determined quantitatively. That is, the brain cells may well be considered the central battery of the organism; when the circuit is closed, as it were, by the application of a sufficient stimulus, there is first an apparent concentration of energy in the brain cells, evidenced by the hyperchromatism of the Nissl substance. If the stimulus has been prolonged or repeated frequently, the energy of the cells becomes

exhausted as is evidenced by the gradual disintegration of the Nissl substance and by other changes in the constitution of the cell. When a sufficient number of cells of the central nervous system have become exhausted efficient impulses can no longer be sent through the efferent nerves to the various organs of the body. These in turn fail to perform their proper functions, and there results the condition called "shock."

As has been stated, the unconsciousness of sleep does not interrupt the passage of stimuli to the brain; the same is true of unconsciousness under inhalation anesthesia. The injuring stimuli of an operation under an inhalation anesthetic exhaust the central battery to nearly the same degree as would an operation without an anesthetic. The emotional element of fear is removed by the anesthetic, but the traumatic damage to the cells is not diminished. In fact, in too many cases the shock is actually increased as a result of the administration of the anesthetic, for the operator in his belief that the patient is unconscious is much rougher in his methods and damages the tissues to a far greater extent than he would if the patient were awake and could beg him to be more gentle.

If the traumatic impulses of the operation are sufficiently powerful so large a proportion of the brain cells may become exhausted as to preclude the possibility of recovery, and the patient as a result dies—from shock. If the number of exhausted cells are not sufficient to cause death, there may still, and there usually does, result a broken down battery which too often never completely recovers; in other words, there results postoperative neurasthenia.

It was the discovery of the resultant effects of continued trauma upon the brain cells which led to the development by Crile of the operative method which he has named anoci association. By this method the operative field is isolated, as it were, so that no impulses can pass therefrom to the brain; the brain cells therefore cannot become exhausted, but must continue to carry on their normal function of in turn energizing the various organs of the body to perform their functions efficiently. In other words, if the operative field is completely blocked by the use of a local anesthetic, there will be no change in the respiration, the blood pressure, or the pulse rate: there will be no muscular rigidity, no spasmodic movements—all of which are defensive efforts on the part of the organism. As a consequence, after the operation the battery will be unexhausted, the patient will have to recover from the diseased condition only, and his convalescence will be proportionately rapid.

The procedure of nerve blocking at the time of the operation is not complete anoci association, however. Thus far we have discussed the damage which the brain may suffer from harmful contact stimuli received through contact ceptors. Through the ages of evolution, however, there have been developed other nerve ceptors whose function it is to perceive the possibilities of coming danger, in order that there may be time for escape before the consummation of the dangerous contact. These ceptors are the distance ceptors or special senses. By association sights, sounds, odors, etc., suggest the danger which threatens, and the emotion of fear is excited. By association, therefore, fear alone may in extreme instances cause as much damage as does physical trauma. Everyone appreciates the exhaustion which may follow the receipt of bad news, and the physician knows how often sudden psychic shock may be followed by actual organic lesions, as well as by prolonged neurasthenia. Again laboratory experimentation has shown the cause of these conditions. The examination of the brain cells of animals which had been subjected to intense fright, but which had not been physically harmed in any way, showed exactly the same stages of disintegration and exhaustion as did the cells of animals subjected to severe trauma under an anesthetic. The fear of an operation, therefore, may be so intense as of itself to cause shock. If the natural fear of such an ordeal, which is felt by every normal individual, is augmented by tactless words in a surgeon's office; by an ungracious reception at the hospital; by inconsiderate treatment by a nurse or orderly; by the sound of clanking instruments; by the rough or forced administration of an anesthetic; then the resistance of the patient already depleted by his diseased condition is lowered still further. No matter how perfect and nonshocking in itself may be the technic of the operation, the results still are prejudiced by these other untoward factors.

Perhaps no feature of an operation is more terrifying to those who are first passing through the ordeal, or more dreaded by those to whom it is not a new experience than is the administration of ether. The suffocating sensation often experienced while going under its influence, if not well administered, and the nausea which results, make its odor forever after a most painful memory. In some patients the suffocating sensation excites to a most vigorous defensive struggle which in itself is exhausting. In the anoci operation, therefore, nitrous oxide is the anesthetic of choice. Nitrous oxide is odorless; a few breaths are sufficient to induce unconsciousness; and it does not cause nausea. Because of these qualities the patient awakes from his anesthetic sleep without unpleasant association. It should be borne in mind always, however, that while nitrous oxide is the safest of all anesthetics in the hands of the expert, it is perhaps the most unsafe in the hands of the inexperienced. It should never be administered except by an anesthetist specially trained in its use.

In the choice of the anesthetic it should be emphasized also that *the patient* is the first consideration and not the prejudice of the surgeon for a certain method. If nitrous oxide does not fully protect a certain patient, as may happen in some cases and frequently does with inebriates, then sufficient ether should be given to attain the desired end. The lack of protection will be evidenced at once by change in pulse and respiration, rigidity, etc.

Even if every "psychic" influence surrounding the patient is cheerful, helpful, and encouraging, the natural dread of the operation will increase as the hour approaches. The ride in the surgical carriage to the operating room is fraught with terror, as is evidenced by the facies and by the quickened

pulse and respiration. In preparing for the "anoci" operation the surgeon takes account of the possible organic damage which may be caused by these preoperative hours, and gives his patient a quieting, nerve dulling dose of morphine and scopolamine.

By a cheerful preoperative environment then; by a definite dulling of nerves by the administration of a narcotic; by a nonsuffocating odorless anesthetic; by a local anesthetic to cut off all afferent impulses during the course of the operation; by a second local anesthetic of lasting effect to protect the patient during the first postoperative hours; by gentle manipulation and sharp dissection and by the combination of all these methods the patient is protected from damage from every factor excepting those which exist in the diseased condition from which relief is sought.

The anoci association, however, does not end in the operating room, nor with the return of the patient to his bed. Postoperative environmental conditions are no less essential than preoperative. To perform a shockless operation on a bad risk and then have the patient distressed and nagged by poor aftercare is like putting tacks in the smooth pavement in the path of an automobile after driving it safely over rough roads. To achieve the shockless operation the patient must be received and carried through a complete anoci association.

That the procedures outlined in this paper do successfully combat shock is proved by a long series of animal experiments by Crile; by a comparison of the clinical records of Crile's and the author's cases before and since the adoption of the anoci principle and by the observations of others who have adopted the method, especially Sir Berkeley Moynihan, of Leeds; J. C. Bloodgood, of Baltimore; and Hugh Cabot, of Boston.

Without the anoci technic the strong, vigorous, and robust will stand, often without any sign of shock, a terrific attack with rough manipulations, with pulling and tearing dissection. But to such methods the feeble, the handicapped, those whose resistance is at the lowest ebb, must either succumb or add many weeks to their convalescence, if indeed they are not permanently invalided.

By the thorough application of the anoci principle both the mortality rate and the postoperative morbidity are reduced. In the last 1,000 abdominal sections performed by Doctor Crile and the author, the mortality rate has fallen to eight tenths of one per cent., and in addition nausea, gas pain, painful scar, neurasthenia, backache, aseptic wound fever, postoperative infection, and pneumonia have been in large measure prevented or wholly eliminated.

To achieve these results means, first, a thorough understanding of the principle on which the technic is founded; it necessitates the intelligent and special training of assistants, internes, anesthetists, hospital officials, and nurses; it means a careful hand and a sharp scalpel; it presupposes a mind free from dogma and tradition; it means that no detail is too petty for the careful attention of the surgeon himself. If all these conditions are fulfilled, we then have complete anoci association which means a shockless operation, with low mortality and lessened morbidity—the end for which every surgeon should strive.

1021 Prospect Avenue.

ANTISEPTICS VERSUS GERMICIDES.*

By Robert T. Morris, M. D.,
New York,
Professor of Surgery, New York Postgraduate Medical School and Hospital.

When we are giving information to royalty, it is customary to preface our remarks with the statement "as Your Majesty already knows," even though we are discussing so distant a question as that of partridges in America. When presenting notes on the subject of antiseptics versus germicides this evening, to an audience of surgeons, I am stating only what your majesties already know, but commonly forget.

Protoplasm is the basic unit of organic life. Bacteria and the body cells of higher organisms both consist of protoplasm. Things which commonly injure the one commonly injure the other. Bacteria are simple morphologically, but complex chemically. The higher organisms consist of aggregations of single cells, each one of which is simple like the bacterium morphologically, but complex in its chemical relationships. In the course of evolution bacterium and body cell have come to be peers as a result of the struggle for existence.

Under ordinary conditions a very good balance of nature is maintained between bacterium and body cell. When the higher organism receives a wound, this balance is temporarily upset and the surgeon is called to the aid of the higher organism. He chooses one of several resources: 1. A germicide which is destructive to bacterium and to body cell equally, 2, an antiseptic which merely inhibits the development of bacteria, but is not injurious to their protoplasm or to that of body cells, or, 3, saline solution with a salt content which makes it isotonic with the blood serum of man, or Ringer's solution containing various salts which are isotonic with human blood serum.

The time for employment of germicides is chiefly in that brief interval between the receipt of a wound, and organization of effort on the part of body cells for purposes of defense. Germicides may also be employed for preparing the skin of the patient and the hands of the surgeon. As soon as the body cells of the patient have recovered from the shock of a wound, and have organized their defense, germicides may be equally injurious to bacterium and to body cell, with a certain advantage to be sure in favor of the patient, because there is the *vis a tergo* of his aggregation of body cells which continues to deliver energy to the body cells in the vicinity of the wound, and to their agents the phagocytes. The bacterium has to work alone, singlehanded.

In the course of an aseptic operation, when bacteria are mostly kept out of a wound, and likewise in open wounds in which the body cells have organized their defense, germicides may be extremely injurious. The surgeon is to depend instead upon antiseptics which are not germicides, or upon saline solution or Ringer's solution for mechanical cleansing purposes.

We first noted the harmful influence of germicides in abdominal surgery, because the peritoneum so forcibly resents injury to the pretty protoplasm

*Read at the meeting of the Surgical Section of the New York Academy of Medicine, December 5, 1913.

of its dainty endothelium. The surgeon has not been so alert in perceiving the kind of harm which follows carelessness in choice between antiseptics and germicides which are to be employed in external open wound treatment. Bichloride of mercury, carbolic acid, hydrogen peroxide, and iodine are all germicides. They injure the protoplasm of the cells called bacteria, and protoplasm of our body cells. They are extremely useful in a small part of the surgeon's work when wisely employed. When employed in every day service by surgeons, and by the laity as household remedies, they may be extremely harmful.

The beef trust taught us a lesson. When dressed beef was immersed in very weak solutions of benzoate of soda, boric acid, or salicylic acid, it was found that saprophytes postponed their activities, even though the cells of the beef had lost their power of vital resistance. These simple antiseptics, which are nearly inert as germicides, will do for wounds what they do for beef. In the presence of the body cells of a living organism they inhibit the development of bacteria until such time as the body cells have organized their defense. Paraffin oil; we have lately come to learn, may be grouped among the antiseptics which are not germicides. It does not destroy bacteria nor injure body cells, but bacteria will not grow well in its presence.

Under certain circumstances it is desirable for us to employ antiseptics which are not germicides, but which have the peculiar effect of stimulating the development of repair cells. In this class we find the anilin which in its purified form is known as scarlet red, and dioxychinolin sulphate, freed from its potassium admixture. Scarlet red may overstimulate, and must be employed with skill. Purified dioxychinolin sulphate, when used as we formerly used bichloride of mercury, in the same strength of solution, has a greater antiseptic power than the latter (according to the report of the Council of Pharmacy of the American Medical Association) and yet is a feeble germicide. Both these substances belong to the group chosen by the surgeon who wishes to employ an antiseptic which is not a germicide, and which at the same time has special function in stimulating the development of repair cells.

In the course of development of the principles of the third or pathological era of surgery, we were all so deeply imbued with the idea of assuring chemical destruction of bacteria and their products, that we overlooked the influence which germicides exerted in destruction of body cells and their agents, at the same time. This influence had to be met by unduly prolonged effort on the part of the reserve energy belonging to the aggregation of cells constituting a higher organism. We ran afoul of Newton's third law. The germicides which became popular during the pathological era of surgery have now passed into household use, and on the whole may perhaps be said to do more harm than good. The repair of a wound is long delayed by continued employment of such germicides as bichloride of mercury, peroxide of hydrogen, and carbolic acid.

According to the principles of the fourth or physiological era of surgery, which is just now emerging, the idea is to turn the patient over to himself, to give him home rule in the simplest way possible, and to aid him in meeting his hereditary enemy—the bacterium—with his own defense organs—the body cells—without making the task more difficult by employing germicide bomb shells which throw fragments into the ranks of enemy and friend alike.

616 Madison Avenue.

HUNGER PAIN AND ITS SIGNIFICANCE.*

By John J. Gilbride, A. M., M. D.,
Philadelphia,
Lecturer in Surgery, Medico-Chirurgical College; Instructor in Diseases of the Stomach and Intestines, Philadelphia Polyclinic and College for Graduates in Medicine.

The term, hunger pain, was first suggested by Moynihan and applied to the pain that occurs when the patient is beginning to feel hungry. Hunger pain is most frequently met with in duodenal ulcer. Although pain which simulates it or some of its variations, may occur in other diseases, it is nevertheless the most valuable symptom in aiding one to diagnose duodenal ulcer. I know of no disease in which the symptomatology was more indefinite or more unsatisfactory than in duodenal ulcer, until the surgeon in his dealing with living pathology gave us a symptom complex which is definite and enables us to make a diagnosis with confidence in the majority of cases of duodenal ulcer. I feel especially indebted to Moynihan. Obviously, a diagnosis of duodenal ulcer is not made on this symptom alone, but it is of paramount importance when taken with the other features manifested by duodenal ulcer.

The pain in the epigastrium usually begins about two hours after an ordinary meal or after dinner which is the heaviest meal of the day. Later and during subsequent attacks the pain may appear after every meal or in some instances become almost constant. The time of appearance of the pain also varies somewhat, depending upon the character of the food, and it may be felt less than two hours after a liquid meal, and later than two hours after a particularly heavy meal of solid food. The pain is absent if the stomach is kept empty for several hours, or when present, is almost instantly relieved by the taking of even a very small quantity of food.

The cause of hunger pain is not satisfactorily understood. It was at first believed that the pain began when the pylorus relaxed to allow the escape of food from the stomach into the duodenum, and that the relief from pain which is characteristic after the ingestion of food was due to the closure of the pylorus, but this was proved to be incorrect, as it was shown by x ray examination that food begins to pass almost immediately after its ingestion, from the stomach into the duodenum. Another point that has been shown in these cases by x ray, is that food is passed from the stomach with unusual rapidity. The pain seems to come when more than half the meal has left the stomach.

*Read before the South Branch, Philadelphia County Medical Society, November 28, 1913.

Therefore, it has been explained that as the acidity of the gastric contents reaches its maximum about two or more hours after a meal, and that while the alkaline secretions of the bile, pancreas, and duodenum are able to neutralize the acid chyme in the early period of passage from the stomach into the duodenum, at this time the secretions are no longer able to neutralize the acid chyme which, passing over the ulcer, produces the pain. It is also believed that the pain may be due to alterations in the muscular activities of the stomach and duodenum. The pain is always relieved by the taking of food even in small amounts, so much so that patients have learned to carry biscuits about and eat them when the pain begins. Another characteristic feature of hunger pain is that of its occurrence at night, waking the patient at or about two o'clock. Patients have discovered that taking a few biscuits or a glass of milk at that time gave them relief. The pain is often preceded or accompanied by a feeling of weight, fullness, and distention in the epigastrium. The feeling is described as "gnawing," "boring," or "burning." The pain is sometimes relieved by belching and there may be a regurgitation of food which is bitter and acid, making the throat feel dry and burning.

Duodenal ulcer, the symptomatology of which was little understood until within the last decade, has been shown to be a disease whose symptoms appear in definite and orderly sequence. The patients frequently date their symptoms as beginning five, ten, fifteen or more years previously. In some instances the patient says that he has had recurrent attacks of pain and indigestion all his life, or as long as he can remember. The periodicity of these attacks is a striking feature of the disease and they may recur at intervals of weeks, months, even years. They may last at first only a few days; later, weeks or longer. In some cases the symptoms become practically constant. These attacks also occur more frequently during the winter, spring, or fall months, the patient being comparatively free from attacks during the warmer months. Then again a patient may say that an attack has begun as a result of exposure to cold, or after worry, or after eating a meal of indigestible food.

These symptoms, so characteristic of duodenal ulcer, may be present for years without producing any physical signs. When signs are present they are usually not very definite or may consist solely of a sense of tenderness over the right upper part of the rectus abdominis, with a slight increase in the rigidity of this region during the attack. These physical signs, however, are of but little or no value. We know that the anamnesis is the all important feature in the diagnosis. A physical examination should always be made, as should the laboratory tests, which may throw light on the disease in doubtful cases, or when complication exists or when, as is sometimes the case, concomitant disease of other organs is present.

Pain simulating hunger pain may be present in some cases of appendicitis, or in disease of the gallbladder. This is especially so in cases of chronic appendicitis but these patients, as a rule, are never completely free from symptoms of indigestion. Then, on the other hand, the two conditions may be associated and personally I believe that infection of the appendix, biliary passages, and pancreas not infrequently precedes duodenal ulcer.

These patients seldom complain of vomiting, but at times belch a great deal. This is forced, as it affords temporary relief, and sour eructations are common. Again victims of this disease have not as a rule the appearance of sufferers from chronic dyspepsia. They look well in most cases, being completely free from symptoms during the intervals between attacks.

The laboratory findings are not of great aid in the diagnosis of duodenal ulcer. There may be hyperacidity, a hyperchlorhydria, normal acidity, or subacidity. Occult blood may or may not be found in the feces if examination for it is made only intermittently. Experience shows, however, that it is found in practically every case of active duodenal ulceration when examination is made daily.

The so called string test of Einhorn has been of value to me in several cases where the symptomatology was clouded by the complication of long years' standing. In doubtful cases an examination with the fluoroscope or x ray should be made. The disease is more commonly met with in men than in women.

The pain in duodenal ulcer may at first be confined to the right side of the epigastrium. Later it may be referred to the back or around the right costal margin. When the disease has existed for a long time, when complications have arisen, when adhesions have formed, the pain may be practically constant. The following case presents some points of interest.

CASE. Patient referred to me by Doctor George E. Bair, of Braddock, Pa. Male, aged forty-five years, contractor by occupation, complained of pain of a severe aching character in the epigastrium. The painful area, according to the patient, who was an intelligent man, could be covered by the end of one's finger. The pain was intermittent in character, occurring between an hour and a half and two hours after eating and was relieved by eating.

The patient said that he had suffered from pain in the stomach almost as long as he could remember, at least, as far back as 1889 when he was a boy going to school. These "attacks" had occurred mostly in the spring and fall of the year. In recent years they had become more severe, had lasted from two to three weeks, with intervals of well being of from three to four months, with two or three attacks a year. Last spring, or eight months ago, the attack was the most severe he had ever had and he was confined to bed for three weeks. Pain had also occurred after midnight. He had been in the habit of having a cracker by the bedside to be eaten at night to gain relief.

He also complained of belching, bad taste in the mouth, regurgitation of sweet liquid, and was troubled at times with constipation, especially so at the time of the attack. Appetite was very good; he never vomited spontaneously, but forced himself to vomit at times during an attack to get relief; no fullness or distress, no nausea, no vertigo. During the attack he was so sore that he could scarcely tolerate the pressure of his clothing against the upper abdomen. Never jaundiced.

Previous history: Typhoid fever. *Social history:* Married, wife living and well. Three children were born to them; one living aged seventeen years, had a locking or weakness of one knee joint. Two children died of aneurysm. Habits: Chewed tobacco; did not use beer or liquors. *Family history:* Father and three sisters died of tuberculosis of the lungs at the age of fifty-nine, thirty, fifty, and fifty years respectively. No history of cancer or hemophilia.

Physical examination showed a fairly well [illegible] man of medium size, dark complexion, and good color

Tongue red and fissured, teeth defective, neck, thorax, heart, and lungs negative, except the aortic second sound which was possibly a little accentuated. Abdomen convex. Liver dullness began at the sixth rib and was palpable below costal margin. Slight tenderness on pressure over gallbladder region with pain referred to epigastrium, also slight tenderness over appendix. Pressure over appendix produced pain around the umbilicus. No tenderness anywhere else over abdomen, except over abdominal aorta. Stomach slightly dilated. The greater curvature was one finger's breadth above the umbilicus. No tenderness in epigastrium or along the spine. Sigmoid colon palpable. Kidneys and spleen not palpable. No palpable lymphatics.

Laboratory findings: Ewald's test breakfast aspirated in 40 minutes; 30 c. c. of well digested contents. Reaction to Congo positive; total acidity 60. Free hydrochloric acid, 10; some mucus present; no occult blood; urine, clear, amber, acid, specific gravity, 1,020. No albumin, no glucose; no indican; no acetone. Urinary output normal. Microscope showed phosphates. Blood pressure, 160 mm. systolic (Faught instrument). Blood gave hemoglobin 80 per cent.; red blood corpuscles, 4,600,000; white, 8,400; differential count normal. Feces were solid, brownish color, hard, and dry; well formed, no occult blood. No perceptible increase in fat. No starch cells; no meat fibres. Repeated consecutive examinations of feces negative for occult blood. Benzidin and Weber tests.

Diagnosis. Healed duodenal ulcer with adhesions; chronic appendicitis, moderate grade arteriosclerosis, slightly dilated stomach, and hypertrophy of liver. An x ray examination by Dr. George E. Pfahler confirmed the diagnosis of duodenal narrowing due to ulcer and adhesions.

Operation was advised and the patient sent to the Medico-Chirurgical Hospital, where I operated upon him, January 16, 1913. A healed duodenal ulcer was found about one inch below the pylorus, on the external wall of duodenum, with adhesions. The duodenum was plicated over the ulcer, posterior gastroenterostomy performed, and the appendix removed, the coats of which were hard, fibrous, and thickened, the lumen of distal half of appendix being almost obliterated. Recovery was uneventful. The early appearance of the pain after eating was probably due to the adhesions.

The patient himself requested removal of the appendix, although it was my intention to do so. I felt that if the duodenal ulcer was cared for and the appendix removed, the patient with proper after-treatment would get well. Doctor Bair informed me in October, 1913, that the patient has been well and has not suffered an hour since the operation was performed.

1934 Chestnut Street.

INTESTINAL KINKS; THEIR DIAGNOSIS AND TREATMENT.*

By Irving S. Haynes, Ph. B., M. D.,

New York,

Professor of Applied Anatomy and Clinical Surgery, Cornell University Medical College, New York; Visiting Surgeon, Harlem and Red Cross Hospitals, etc.

DEFINITION.

An abnormal angulation in the intestine (at the site of a normal angle or not) or a constriction in the intestine by adventitious bands or adhesions (without any angulation necessarily being present). As a result of this condition the lumen of the intestine is narrowed, the fecal current delayed, and a state of intestinal stasis thereby produced with its deleterious results.

*Read by invitation at the seventh annual meeting of the Fourth District Branch of the Medical Society of the State of New York,

LOCALIZATION.

Kinks may be found in any part of the intestinal tract from the pylorus to the rectum, yet there are certain regions which show such abnormal conditions more frequently and to a greater extent than other parts of the tube. The localizing factors are: First, those normal angulations known as "flexures," as the hepatic and the splenic; and at the junction of a movable with a fixed portion of the bowel, as above or below the sigmoid loop; second, infection. The details of this will be discussed presently; the fact to be recognized now is that such a factor exists and is most active in certain favorable localities determined by the intestine itself, as at and about the vermiform appendix, and in lesser degree, about the regions above enumerated. Then, again, there are certain organs, not a direct part of the intestinal canal, as the biliary system, also other organs, in the female, as the uterus and tubes through whose infection the bowel may be involved.

ETIOLOGY.

The active cause, to my mind, is infection of a mild type acting over a long period of time.

The secondary cause is the presence of the angles above noted. They act normally to delay the onward passage of the intestinal contents for digestive and absorptive purposes. When this normal delay is prolonged and intestinal digestion becomes putrefactive decomposition with greatly increased bacterial content, the conditions are favorable for seepage of the bacterial toxins and migration of the bacteria themselves. Other factors are traumatism from without or within the bowel, such as a cecum loaded with feces, a gallbladder full of calculi, a movable kidney, etc. But such traumatism is not the primary cause; it is only one of the determining factors by which the lesion becomes localized. The appendix and the cecum rank first, the hepatic flexure, the sigmoid loop and the splenic flexure follow as favorable localities for the development of these bands and kinks.

Besides the above active causes, there are numerous other conditions through whose existence kinks in the intestinal canal may be produced; as, for instance, postoperative adhesions, deformities due to tumor growth, hernial complications, pelvic inflammations in the female and the displacements resulting from general visceral ptosis. These and similar conditions it is not our purpose to discuss.

PATHOLOGICAL ANATOMY.

There is a great similarity in the operative findings, no matter where the lesion is located. There are bands or membranes of varying thickness and surface area, by which different degrees of angulation or compression in the intestinal canal are produced.

A duodenal kinking is illustrated by case III, in which the constricting band was due to adhesions from the region of a gall bladder, which had been previously removed, across the duodenum to the great omentum. Typical Lane's kinks were found in case IV. Typical colonic veils or membranes, varying in texture and extent, will be found described in the case reports: delicate, filmy veils, case V, thick and dense membrane in cases IV and

VIII. The colon was constricted in case VIII. The hepatic flexure was acutely angled and fixed in cases IV, VII, and VIII. The ascending and descending colons were adherent and covered by a dense broad expansion in case VII. Case II showed a typical kink at the splenic end of the transverse colon, and case I showed a common cause for a kink at the lower leg of the omega loop.

The operative picture of a typical colonic veil is of a thin, but well defined membrane which seems to arise from the parietal peritoneum from the right costocolic ligament downward for from two to several inches. From this lateral attachment the membrane is reflected over the hepatic flexure and the upper part of the ascending colon and ends by blending with the peritoneal coat of the intestine along its inner aspect. In the earlier states this membrane is either not, or very slightly, attached to the intestine except at its terminal insertion, and can easily be lifted from the bowel, which then presents its usual serous coat.

In more advanced cases, the membrane is dense, closely adherent to the intestine, and now and then extends over to be attached to the transverse colon, which has dropped down alongside of the ascending colon. This is called the double barreled form by Gerster. With this extensive production of adhesions there will usually be found that the acutely flexed hepatic angle has been dragged high up under the liver by a dense cord or ribbandlike band which tightly constricts it at the apex of the angle. The membrane may end at the middle of the ascending colon or spread downward so as to cover not only the cecum but also the appendix. Blood vessels are seen running with the fibres of the veil from the parietal peritoneal to the intestinal attachment. These vessels do not seem to anastomose but pursue an independent parallel course. When cut they will bleed from both ends. Some of the larger vessels, close to the intestine, will bleed quite freely as if they originated from that viscus.

The cause of the formation of these veils has been sufficiently considered. I wish now to take up the steps in the process of formation and for this purpose I can do no better than to quote the appearance seen upon the intestine as described by M. L. Harris and quoted by R. E. Coffey in *Surgery, Gynecology and Obstetrics*, p. 305 *et sequenter*, October, 1912. (I will abridge when convenient.) "In the early stages of the condition the intestinal wall of the ascending colon presents the apearance of being thickened or edematous and on close inspection, the visceral peritoneum seems to be raised from the bowel wall by reason of the appearance of a subendothelial hyaline looking substance or exudate. The endothelial layer of the peritoneum, which is slightly movable on the bowel wall, gradually becomes separated from the bowel as a distinct layer beneath it, covering the bowel wall. Later this membrane is almost certain to acquire attachment to the anterolateral parietal wall."

In case V, of my series, I had the rare and fortunate opportunity of witnessing an active stage in the formation of these colonic veils or membranes which I shall never forget. The cecum and ascending colon were covered by a very filmy membrane which extended to the lateral parietal wall. Beneath this membrane was a fluid, turbid, serous exudate which varied in its thickness, as shown by the varying shades of color. Where the exudate was thin the structures beneath could be dimly seen; where the exudate was thicker it was too turbid to see anything through it. This turbidity deepened as the region of the appendix was reached and here seemed to be the greatst point of exudate. After the veil was pricked the serum escaped and the membrane dropped down upon the bowel beneath. It was then seen that the appendix was covered by this veil. After the removal of the veil the intestine, though injected, showed a serous coat. Here then was a colonic membrane in process of formation. It was too early for bloodvessels to have been developed in it and they did not show. The centre of new tissue activity was clearly the appendix, which was kinked and covered by adhesions.

To complete the descriptions of the formation of these membranes, I quote the following from Jackson (*Annals of Surgery*, p. 374, March, 1913, Membranous Pericolitis and Allied Conditions of the Ileocecal Region. Report by Frank J. Hall on a specimen:) From just above hepatic flexure to three inches above the caput spread from parietal over external lateral margin to the internal longitudinal muscular band a thin vascular veil in which long, straight, unbranching bloodvessels course, most of which are parallel with each other and take a slightly spiral direction over the colon from the outer, upper peritoneal attachment to the inner lower portion of the gut, ending just above the caput. The appendix is not implicated.

"Coursing with the bloodvessels are a number of shining, narrow bands of connective tissue which gradually broaden as they go and end in a slight, fanshaped attachment at various points on the anterior and inner surfaces of the colon. . . . A portion of the parietal peritoneum has been removed with the colon, and shows that the membrane and the bloodvessels arise in and are continuous with the structures of the parietal peritoneum as it sweeps over the colon. The entire structure seems to be peritoneum loosened from its close connection to the abdominal wall and colonic surface by some serous exudate, after which the particular vascularization and connective tissue banding has occurred as a chronic reaction to irritative influence."

In regard to the suggestion that the colonic membranes are derived from the adjacent border of the omentum, this may be said: While the dense, thick and broad membranes in this region resemble the border of the omentum in a general way, there the similarity ends. It has been said that this resemblance is due chiefly to the fact that in both the vessels run in parallel lines. While this is true, in a measure, yet my observation shows that in the very dense and thickest membranes there is a lack of vascular supply. The bloodvessels are in no wise in proportion to the thickness of the tissue layer. They resemble the vessels in other masses of cicatricial tissue by being gradually constricted and obliterated with the contraction of this tissue. Furthermore, they do not seem to form any anastomoses with each other that are apparent. In the omentum the bloodvessels are placed at quite defi-

nite and regular distances from each other, in this new tissue they are at first very numerous and the most conspicuous element on viewing the tissue. Later they have almost become invisible and are widely or irregularly placed. Further, more or less fat is found in the omentum, no matter where it is placed or to which organs it is attached. Colonic veils never show fat. At least I have never seen a case that did. The only resemblance, then to my mind, is the fact that both are membranous in structure; but there the likeness ceases.

I cannot accept the explanation advanced that these veils have been developed by nature either to prevent or as a result of a visceral ptosis. Such intelligent action nowhere else is manifested by our bodily genius. Often we find the cecum occupying more or less of the pelvic cavity without any symptoms due to such a position. Mere ptosis does not explain the existence of such veils. But, if as a result of the ptosis, there has been caused a stasis of the fecal current for a sufficient time, chronic colitis, seepage of toxins or migration of bacteria will follow and such membranes be produced.

Neither do I think that these colonic membranes can be due to developmental vagaries. This cause may be invoked to explain an abnormal position of the cecum, appendix, or other parts of the intestinal tract, but that in itself such abnormal position would result in pathological products is not reasonable. Infection as a result of such position could easily take place and the sequence of events be rationally traced. That these and similar membranous adhesions are the usual and common means by which nature seeks to limit bacterial action has been demonstrated many times. Such membranes, found when operating upon a septic case have, at a later date when the sepsis had long been absent, been seen to have entirely disappeared. This is so common that it is conceivable that the formation of colonic veils may be arrested and their disappearance through absorption be possible, providing the continued infection can be removed or prevented at an early date.

AGE AND SEX.

The cases enumerated are grouped as follows:

Case I. Sigmoid constriction in a woman, aged thirty-eight, due to postoperative adhesions. Other similar cases might be added but this is sufficient to illustrate the point.

Case II. Kink in the transverse colon at the splenic flexure in a man, aged seventy years, not due to ptosis, but to traumatism.

Case III. Postoperative constriction of the duodenum in a woman, aged forty years. Other similar cases due directly or indirectly to disease of the gallbladder, duodenum and stomach (ulcers) might be added, but they are not primarily "kinks."

The remaining cases presented typical colonic veils, hepatic angulation, Lane's kink, double barreled colon, in varying combinations associated in some with chronic appendicitis. In others the appendix had been already removed.

Of seventeen cases of colonic membranes, twelve were females, with an average age of twenty-four years, the youngest being thirteen and the oldest thirty-five. Five were males with an average age of twenty-six years, the extremes being twenty-two and thirty years of age. The other cases are introduced to illustrate other causative factors and results.

My experience with colonic veils agrees with that of Harris quoted by Coffey, that membranous pericolitis usually occurs in young women from twenty to thirty-five years of age. He had also seen a case in a boy of twelve.

The seventeen cases mentioned were in young and vigorous persons who had neither ptoses, tumors, nor other infrequent causes of intestinal kinks. In these cases the causative factors were limited in origin, course and effects to the intestinal canal and its immediate surroundings.

PATHOLOGY.

The combined results of all the causative factors, anatomical structure, fecal stasis, and microbic infection are to excite in the mucous membrane of the bowel a low grade of inflammation. This lowers the protective property of the mucous membrane so that there is more or less seepage of the bacterial toxins and even the migration of the bacteria themselves to the peritoneal surface of the bowel. Such invasion is resisted by the development of hyperemia, exudation, cell migration and proliferation, and finally the production of the bands and veils, or sheets of new connective tissue, upon the intestine, which attach it to neighboring abdominal wall or viscera, with the production of kinks and constrictions in the intestine. As Cheever remarks: "No one, I presume, doubts the passage through the intestinal wall of irritating substances, whether bacteria or their products or more purely chemical irritants, without gross perforation."

SYMPTOMS.

The symptoms are due to three different but intimately associated factors: *interference with the motor function of the bowel; disturbances in digestion and absorption; and the effects of peritoneal irritation and inflammation.* The *motor function* of the bowel is interfered with by the narrowing of the intestine as a result of the kink or constriction. The onward passage of feces is hindered; obstinate constipation results. As the intestine redoubles its efforts to move the fecal mass these efforts are felt by the patient as cramps or colicky pains. The patient soon learns that he can aid these efforts of the bowel by lying down and massaging his abdomen. Defecation may occur only once in from two to six days, and then only by the use of cathartics. The patients are usually compelled to go to bed for a day or two on account of the severe cramps. As soon as the bowels are thoroughly emptied the acute symptoms disappear and the patient feels quite well.

As a result of the irritation a mucous colitis may bring on an attack of diarrhea, which subsides after a cleansing of the intestines.

The slowing of the fecal current dams back the fecal mass, which favors a great increase in the bacterial content, not only of the normal intestinal flora, but also of many varieties not usually inhabiting the intestine.

This acts to change normal digestion into more or less of a putrefactive process with the production of poisonous substances. When these are

absorbed into the circulation symptoms follow: Malaise, loss of weight, pigmentation of the skin, with nervous symptoms usually called neurasthenia. There are periodical "sick" headaches, weakness, and prostration. Lane has well described the numerous end results of such slow and continuous autoinfection in his various papers. These digestive disorders are attended with the formation of gas, which is complained of by nearly all patients, no matter where the obstructive lesion is located. In addition, there is usually nausea but no vomiting, unless the obstruction is duodenal or an acute attack of stasis occurs.

In respect to the secondary changes which follow chronic intestinal stasis, I have not been so fortunate as to detect all of them so graphically pictured by Lane, probably because I have not studied the patients carefully enough, or I have seen them at an earlier stage in the disease. I have found the thickenings or lumps in the breast in two cases. I have not noted the excessive pigmentation, but marked a muddy condition of the skin. In the nervous system, however, I have encountered the milder varieties of "neurasthenia" disturbances of sleep, irritability of temper with headaches and, in one case (case 1) even mental aberration to an extent that required confinement of the patient in a sanitarium for several months. (Operation completely cured this woman and made her a healthy, normal creature.)

There has usually been a loss of weight amounting to several pounds. With my patients the muscular system has not suffered very much. They do not complain of loss of strength, but of a lassitude and disinclination to exert themselves. Following the intestinal stasis are not only the chemical and bacterial changes noted above, but also the production of distinct pathological lesions due to such changes. The subjective symptoms of such irritation are soreness, tenderness, gnawing feelings, even actual pain which is very well localized to correspond to the particular portion of the bowel involved in the pathological process.

With duodenal constriction the distress is in the epigastrium; with Lane's kink, in the region of the umbilicus; with the usual colonic veils and hepatic angulation the drag, distress, and pain are felt in the right flank from the ribs down into the iliac fossa or groin. When the obstruction is in the region of the splenic flexure a similar train of symptoms are complained of in the left side, beneath the ribs. With interference in the omega loop the drag is felt in the sacral region and the lower part of the abdomen.

PHYSICAL SIGNS.

These symptoms are few and consist in a soreness or tenderness of the region involved. At times a hard distended cecum may be felt. If distended with gas it will be tympanitic and on pressure give a gurgling. Other regions are negative, except for the tenderness mentioned. It is mostly then by the "negative" findings that we value a physical examination.

DIFFERENTIAL DIAGNOSIS.

The long duration of the symptoms of indigestion, gas, constipation; of colicky attacks of a day or two without fever or symptoms of active inflammation; of an amelioration in the symptoms following free emptying of the bowels; with symptoms of chronic autoinfection as detailed already, attended by nausea but seldom vomiting, the diagnosis of chronic intestinal stasis can be made. Its probable cause will be reached by considering the age and sex of the patient, the finding of a sensitive appendix and ascending colon, or other segment of the intestine, with localized tenderness. If there is a drag, distress or pain in the right flank, with the symptoms of a growling appendix, or even if the appendix has been removed and the digestive disturbances are present as outlined above, the diagnosis of colonic veils is almost positive. The x ray photographs will clinch the diagnosis.

Associated with the foregoing condition may be a right movable kidney. While this aggravates the intestinal and nervous symptoms, the diagnosis may be reasonably certain in the presence of this complication. If the attacks are sharp and colicky in nature with the pain chiefly about the umbilicus, with nausea but without vomiting; if the patient helps himself by massaging the lower abdomen and is relieved by an operation of the bowels, the condition is probably one of Lane's kink. Usually there is associated with this a chronic appendicitis, so that it is impossible to make a positive diagnosis. This, however, is not essential, as both demand operative treatment. The x ray will aid in deciding if there is a Lane's kink associated with a chronic appendicitis. If the appendix has been removed and the foregoing symptoms persist, then we may be sure of a kink near the ileocecal valve without the aid of the x ray.

Gallstones, gastric and duodenal ulcer are so often attended with actual or spasmodic constriction of the duodenum that a differential diagnosis is often impossible, and indeed not essential. If the gallbladder has been removed, the diagnosis then lies between duodenal and pyloric constriction, and both demand operation.

Kinks in the other regions can be guessed at, but one cannot be sure. The one condition which demands early intervention is carcinoma, and any intestinal interference, especially in one past fifty years, demands exploration as soon as the fact becomes apparent that the case is not being benefited by mild medical measures.

(To be concluded.)

THE EFFECT OF INTRAPERITONEAL INJECTIONS OF OZONE IN ANIMALS FOLLOWING INJECTIONS WITH VIRULENT BACTERIA.*

By S. E. Finch, M. D.,
New York.

Had oxygen been shown to possess a bactericidal action in vitro, it was proposed to ascertain its value when used intraabdominally in animals following controlled peritoneal infection with pyogenic bacteria. Failing in the demonstration of such an action by oxygen, the finding that under the same conditions in which it showed slight inhibitory

*From the Research Laboratory of the New York State [illegible] Hospital.

action toward two of the types of bacteria used, oxygen, of which a small percentage had been changed to ozone, showed not only an inhibitory but a bactericidal action toward all four microorganisms experimented with,[1] led to its use in a series of animals (rabbits and cats) after they had received intraabdominally fatal doses of *Aurococcus, Streptococcus pyogenes brevis,* or of the colon bacillus.

Certain known factors were against this use of the gas, namely, the ease with which ozone is reduced by readily oxidizable organic matter, inability to limit or direct the action of the gas unless passed through fluid medium, and difficulty in raising the temperature of the gas sufficiently high for intraabdominal use without reducing the concentration of the ozone.

The source of the ozone was the same as that previously used in connection with the bacteria in vitro. The concentrations available were, 0.001 per cent. and 0.015 to 0.0185 per cent. by weight of ozone in ozonized oxygen (22°C.), and 0.005 to 0.012 per cent. by weight of ozone in ozonized air (22°C.). Though the gas was passed through a specially constructed box containing coils of glass tubing surrounding an electric stove, it was found difficult to raise the temperature of the gas to 33°C. for introduction within the peritoneum. In order to have the gas at 30° or 37°C. at the moment of its leaving the aluminum tubing which conducted it from the heating chamber to the abdomen, it was necessary to keep the temperature inside the box at from 42° to 45°C.; this meant reducing the concentration of the ozone from spontaneous change of a varying percentage back to oxygen.

With the exception of two cases, virulent strains of the microorganisms were used, and only those cases considered in a series in which the control animal died from the bacteria injected. The dose of an organism was varied and given, with exception of two instances, from one and one half to four hours before the use of the ozone. All operations were conducted under ether anesthesia. As strict asepsis as possible under existing conditions was observed. The abdomen was entered to one side of the median line by an incision from two to three inches in length, and the ozone introduced through a glass cannula. In some cases a second incision in the opposite groin was made for the escape of the gas, in other cases it was allowed to escape around the cannula. Silk was used for all sutures; the purse string suture used around the cannula included the peritoneum and a layer of fascia or fascia and muscle.

Normal animal.—The introduction of 0.001 per cent. ozone into the peritoneal cavity of a normal rabbit was accompanied by the following symptoms: Temporary bleaching at the site of introduction of the gas, followed by injection of the bloodvessels about the wound and on the peritoneum, more especially those near the point of entrance of the gas into the abdomen. There immediately followed a slight increase in the rate of respirations and the heart beat, which continued during the operation and with diminishing rate for the subsequent four hours. A slight increase in the amount of anesthetic was at first required to maintain second degree anesthesia; to be remembered, however, was the high percentage of oxygen in the gas ozonized. No increase in the amount of peritoneal fluid was observed. With distention short of serious embarrassment of the respirations by pressure upon closing the abdomen, there was restlessness and uneasiness of the animal for four to six hours after the use of the ozone. Twenty-four hours after introduction of the gas, the animal's appearance and actions were quite normal; its abdominal girth was much reduced. No inhibition of peristalsis was noted. Upon investigation of the peritoneum forty-eight hours after the use of from fifteen to twenty milligrams of ozone no odor of ozone could be detected, and, aside from a possible slight hyperemia of some peritoneal vessels near the wound or point of introduction of the gas, the abdominal condition was macroscopically normal.

First series.—Ozone 0.001 per cent. was employed in a series of ten animals, four of which had received intraperitoneally a fatal dose of aurococci; five, colon bacilli; one, colon bacilli with aurococci. The results were: Sixty per cent. of the animals lived, forty per cent. died. The ozone was used within three hours of the introduction of the microorganisms in nine cases; in the tenth, twenty-four hours after the injection of the bacteria. On closing the abdomen moderate distention with the gas was employed in seven cases, firm distention in three cases. The maximum amount of ozone, 0.001 per cent. dilution, introduced at one time was 22.5 milligrams, the minimum in any given case, twelve milligrams.

The amount of ozone used was in seven out of the ten cases probably sufficient to have killed these same bacteria in vitro, if in suspension in fluid medium, as one half a culture or less was the dose injected. Of these seven animals five lived and two died. The latter two had received virulent strains of the bacteria, the ozone had been used two and two and a half hours later, and the animals died four and five hours before the controls. As seen at autopsy no sterilization of the peritoneum had been effected, and good growths of the bacteria were obtained on culture from the heart blood. As regards the three cases in which the amount of ozone used could not have been sufficient to have killed all the bacteria, as two and three cultures were injected, two animals died and one lived. The one that lived had been injected with a less virulent organism, and received twelve milligrams of ozone twice twenty-four hours apart. Its control died in ninety-six hours.

Concerning the microorganisms used in the seven cases above referred to, results seemed to be dependent, not upon the type of the microorganism, but upon its virulence, whether the infection had extended beyond the peritoneum, and the circumstances under which pressure distention of the abdomen with the gas was resorted to on closing the peritoneal cavity. In no case did the animal survive the intraperitoneal use of ozone in which, 1, the infection had extended beyond the peritoneum, or in which, 2, the animal showed symptoms of

[1] Studies on the Action of Oxygen, Peroxide of Hydrogen and Ozone [illegible] Germicide. [illegible] Bacteria.

more than slight toxemia before the use of ozone, or in which, 3, the sterilization of the peritoneal cavity was only partial and distention with the gas resorted to. Using distention of the abdomen in a severe infection seemed to hasten the death of the animal; but, using distention after sterilization (determined by operator) in a slow infection, no ill effects were noted to result from such distention when oxygen was the gas ozonized and the ozone concentration was not greater than 0.001 per cent. by weight.

In the animals that did not recover, death took place in from three to twenty hours after operation. Consciousness was regained very slowly after discontinuing the anesthetic, respirations and heart beat continued rapid, the animal later showing abdominal distress and great weakness. No inhibition of peristalsis was noted. On post mortem examination in the case of colon bacillus infection, a purulent peritonitis was present. In the case of aurococcus, there was either simply an intense injection of the peritoneal vessels, or congestion of these vessels with a slight amount of fibropurulent exudate. There was never any odor resembling ozone in the free gas in the peritoneal cavity at autopsy. The microorganisms were in all cases recovered from the heart blood, though death after operation might occur as soon as five or six hours from the time of inoculation with the bacteria.

Normal animal.—The introduction of ozonized air, the ozone 0.008 to 0.01 per cent. by weight into the abdomen of a normal rabbit was accompanied by the following symptoms: Dryness at the edges of the wound; transient bleaching followed by moderate congestion of the visible peritoneal vessels; respirations quickly increased from 120 to 180 and 200 a minute, with pauses at irregular intervals, of from one to three seconds' duration; heart action 120 to 140 or 160 a minute, the latter dependent upon increase in abdominal pressure. No increase in the amount of anesthetic was necessary to maintain second degree anesthesia. When not more than 140 to 190 milligrams of ozone of this dilution were used, with moderate distention of the abdomen upon closing the wound, the respirations fell within twenty-four hours of operation, also the pulse rate. Recovery of consciousness after discontinuing the anesthetic was slow, requiring from one to one and one half hour. Restlessness and some abdominal uneasiness marked the next twelve to twenty-four hours, with abdominal girth, rate of respirations, and heart beat normal forty-eight hours after the use of this strength of ozone. The peripheral circulation showed poor aeration under prolonged use of ozonized air. If bled from the ear before the use of ozone, the serum separated clear from the clot. Following the introduction of 100 milligrams or more of ozone of this concentration, on the other hand, the blood obtained from the ear yielded a serum slightly tinged with hemoglobin which could not be centrifuged clear.

Second series.—Ozonized air, the proportion of ozone varying from 0.005 to 0.01 per cent. by weight was used intraabdominally on four rabbits that had received fatal doses of Streptococcus brevis. This organism was selected, as its growth was found to be readily influenced by ozone in vitro. The results were: Twenty-five per cent. lived, and seventy-five per cent. of the animals died. The control animals for the two different strains died, one fifty-four hours after inoculation and the other after sixteen days. With the first microorganism, the case that was operated in within one and one half hour of injection with the bacteria, lived. At that time the animal was not noticeably ill and from 170 to 175 milligrams of ozone were circulated among the intestines and passed through the small amount of fluid present. The prostration after operation was of shorter duration, and the return to the normal rate of respirations and heart beat was within a shorter period than in the case of the test animal and ozone. No hemolysis was noted in the peripheral circulation. In another rabbit which had received an injection with the same strain of streptococcus, same dose, but the time of operation was two hours after inoculation, the amount of ozone introduced was about fifty milligrams; a sufficient amount under certain conditions to have killed these bacteria in vitro. The animal died five and one half hours later. At autopsy a light growth of streptococcus was recovered from the peritoneum and a luxuriant growth of this microorganism from the heart blood.

In a third case and the same strain of streptococcus, the animal was operated upon forty-eight hours after the inoculation, at which time the rabbit showed marked symptoms of general peritonitis and refused all food. About 170 milligrams of ozone were used; it was then discontinued, owing to the marked depressing action of the gas on the respirations and heart that followed its use. This animal died within eighteen hours of operation, and the peritoneum showed that no sterilization had been effected by the ozone, as there was a purulent peritonitis present from which streptococcus was the organism isolated. The streptococcus was also isolated from the heart blood. No hemolysis was noted in the peripheral circulation.

In the fourth case a much less virulent streptococcus was used and peritoneal flushing with the ozone gas, 250 milligrams, was undertaken two weeks after inoculation with the bacteria and two days before the death of the control animal from general pyemia. In this case again, the peritoneum, from which a light growth of the bacteria was obtained by culture at the time of operation, was not sterilized by the amount of ozone used, as was shown at autopsy when the animal died two days later of general pyemia, and a good growth of streptococcus was recovered from the peritoneum. Reinfection might have occurred, however, from one of several foci beneath the peritoneum that were present at the time of operation but not removed.

Normal animal.—With greater concentration of ozone 0.015 to 0.0185 per cent. by weight in ninety-five per cent. oxygen, results were fatal, a normal animal dying within eight hours of its intraabdominal use, though the number of milligrams was not greater than 190 and no distention of the abdomen with the gas was employed. Some difficulty was experienced in giving the anesthetic, respirations becoming very rapid upon beginning the use

of this strength of ozone in oxygen medium with frequent pauses of several seconds' duration, and the heart action was very rapid. Poor aeration of the peripheral circulation and the development of muscular tremors were noted during or within a half hour of the operation. The return to consciousness was very slow, two and one half to three hours; the respirations and the heart action continued very rapid, animal feebly restless, extremities cold, with the appearance before death of small hemorrhages or dark, blood tinged extravasations in the skin of the ears (rabbit). At autopsy, gas was noted but no odor of ozone, intestines distended, liver and spleen and peritoneal vessels intensely congested, two areas half inch in diameter acutely congested and edematous, one on the small and one on the large intestine near the wound, two drams of blood tinged peritoneal fluid, many small hemorrhages in the peritoneal coat, scattered hemorrhages in the skin (ecchymotic areas) and subcutaneous tissues, and, aside from intense congestion, small hemorrhages into the lungs and an emphysematous condition of the two lower lobes.

SUMMARY.

Ozone, 0.001 per cent. in oxygen dilution, can be introduced with impunity as a continuous current into the abdomen of a normal rabbit until from twenty to twenty-two milligrams have been passed through the peritoneal cavity. Distention short of pressure embarrassment of the respirations can be used, and the symptoms produced differ from those produced by ninety-five per cent. oxygen only in the following way: the time required for recovery from the anesthetic may be prolonged instead of shortened as when using plain oxygen; the pulse and respirations continue rapid over a longer period, and the animal may show some abdominal uneasiness. The first effect of introducing this concentration of ozone is to cause an increase in the amount of anesthetic necessary; but after use for five minutes or longer this effect is no longer observed.

The introduction of ozonized air, the ozone representing ten times the foregoing concentration, i. e., 0.008 to 0.01 per cent. by weight, into the peritoneal cavity, causes very rapid respirations; and if the pressure is increased as by the use of distention, respirations become so rapid that respiratory pauses of one to four seconds punctuate them. The heart action likewise becomes very rapid, but shows no arrhythmia unless the respirations are embarrassed. There is no increase in the amount of anesthetic required while using this gas, and a stupor or semiconscious state exists for one hour or longer after discontinuing the anesthetic when 100 milligrams or more of the ozone have been used. Aside from this action on respirations and heart, there occurs a slight grade of hemolysis in the general circulation following the use of this number of milligrams or more of the gas. This is noticed in the serum of blood drawn from the ear of a normal animal after use of the gas, and, while only of a slight grade, still awaits accurate explanation.

With still higher concentrations of ozone, as the use of 0.015 per cent., oxygen dilution, the introduction of but 190 to 200 milligrams without ballooning the abdomen, causes death of a normal animal within six to eight hours of its use with symptoms as described above.

The use of ozone gas within the peritoneal cavity of animals following general peritoneal infection, may be without harm to the animal if the concentration is very weak, not greater than 0.001 per cent. by weight and in oxygen dilution. Under the following conditions the animals survive the use of a continuous current of 0.001 per cent. ozone: Use within three hours of a general peritoneal infection, limitation of the infection to the peritoneum, a low grade of toxemia, use of a continuous current of the gas, and, according to the judgment of the operator, the use of a greater number of milligrams of ozone than would actually be required to kill the bacteria if brought into intimate contact with them, finally, the use of but very moderate, or no distention upon closing the abdomen.

The use of the following concentrations, 0.005 to 0.012 per cent. by weight, when introduced into the peritoneal cavity of normal animals, produces symptoms other than those due to the physiological action of oxygen, and in connection with general peritoneal infection, unless the amount of ozone used and the bacteria are nicely balanced and under the conditions above mentioned, its use insures a rapid and fatal termination.

New York Skin and Cancer Hospital.

WESLEY'S SYSTEM OF MEDICINE.

By The Honorable William Renwick Riddell. B. Sc., F. B. S., Edin.,
Toronto, Canada.

The celebrated John Wesley, founder of Methodism, did not confine his attention to preaching; like his predecessor in divinity, the Reverend Doctor Hancocke, he wrote and published a book on the practice of medicine. The first edition was issued in 1747, shortly before his first and memorable visit to Ireland; and at least three subsequent editions appeared during his lifetime. After his death, in 1791, the work continued to be reissued from time to time and had great vogue among his followers. A copy still turns up now and then; my own was printed at Leeds "near the old Church" by George Wilson, in 1813, and purports to be "a new edition." The work is entitled *Primitive Physic or an Easy and Natural Method of Curing most Diseases*, by John Wesley, M. A., and contains an alphabetical list of diseases or disorders, 288 in all, with their appropriate remedies, 824 in number.

In his preface, the reverend author attributes all sickness to Adam's fall: "The heavens, the earth and all things contained therein conspire to punish the rebels against their Creator; the sun and moon shed unwholesome influences from above; the earth exhales poisonous damps from beneath; the beasts of the field, the birds of the air, the fishes of the sea are in a state of hostility, the air itself that surrounds us on every side is replete with the shafts

of death; yea, the food we eat daily saps the foundation of that life which cannot be sustained without it."

He thinks that physicians have unduly imported various kinds of learning into their practice, and that simple remedies, the value of which is known by experience, may be taught to the common people. He gives accordingly a long list of diseases with the remedies appropriate to each; he sets "down in most cases several remedies for each disorder, not only because all are not equally easy to be procured at all times and in all places, but likewise because the medicine which cures one man will not always cure another of the same distemper, nor will it cure the same man at all times, therefore it is necessary to have a variety." He recommends using first that which is placed first on the list, and if that fails, using the others in succession; but he marks with an I "those medicines which some think to be infallible." "In a complication of disorders," he says, "you would do well to apply to a physician that fears God." In the preface to the editions of 1755 and 1780 he repeats this advice: "In complicated cases or where life is in immediate danger, let everyone apply without delay to a Physician that fears God; from one who does not—be his fame ever so great—I should expect a curse rather than a blessing." This tenderness of conscience (which some would call bigotry), forbidding the employment of any but a Godfearing physician, was not at all to be wondered at; many of his immediate disciples "felt that they could not go to the Lord's Table where the clergyman was a worldly man; others went, but with much fear and doubt." No doubt Wesley knew of and believed in the proverb, *Ubi tres Medici, ibi duo Haeretici.*

As was to be expected, the author has not got quite out of the realm of magic. An Ague may be cured by a bag of Groundsell worn on the pit of the stomach or by "six middling pills of Cobwebs," or by applying to the wrists a plaster made of Yarrow boiled in new milk, or a "plaister of treacle and foot," the dregs of oil after refining. Cramp may be prevented by laying a roll of brimstone under the pillow, and cured by holding a roll of brimstone in the hand. "I have frequently," says Mr. Wesley, "done this with success." Applying green dock leaves to the joints and soles of the feet, changing them once a day, is sovereign for the Dropsy; while laying a thin slice of raw beef on the nape of the neck is a tried remedy for "hot or sharp Humours." In case of a Fever, "smear the wrists five or six inches long with warm treacle and cover it with brown paper," or "apply treacle plaisters to the head and the soles of the feet, changing them every twelve hours"; a Delirium is often cured by applying a treacle plaister to the top of the head; for Gout in foot or hand, apply a raw lean beef steak, changing it every twelve hours, this is a tried remedy; for Jaundice, wear leaves of celandine upon and under the feet. Celandine (Chelidonium) is still used as a cholagogue in jaundice, but internally. To prevent the bite of a viper, "rub the hands with the juice of radishes." "Scrape peony roots fresh digged. Apply what you have scraped off to the soles of the feet. It helps immediately in Convulsions in children. Tried." For the Iliac Passion (ileus, volvulus), Wesley approves Doctor Sydenham's treatment: "hold a live puppy constantly on the belly."[1] This, however, may be quite reasonable as supplying a steady heat and at the same time giving the patient something to think of beside his abdomen. Some reason can also be found in the prescription to prevent Rheumatism: "wear washed wool under the feet"; and for Shrunk Sinews, "rub the part every morning with fasting spittle"; this had been tried; also that for Skin rubbed off "apply a bit of white paper with spittle."

Doctor Hancocke had, a quarter of a century before, found cold water taken internally the universal febrifuge, if not a panacea; and Wesley is a believer in its virtues in many diseases. In his preface he says, "Water is the wholesomest of all drinks, it quickens the appetite and strengthens the digestion most." For Ague, he recommends to drink a quart of cold water, then go to bed and sweat; for Asthma, a pint of cold water every morning; for Cholera Morbus, "two or three quarts of cold water, if strong, of warm water, if weak"; for a Cold, a Cough or a Cholic, Palpitation of the Heart, or a sore Throat, a pint of cold water lying down is a tried remedy, while for a fever, "I never knew it to do hurt." For a Bloody Flux, "drink cold water as largely as possible, taking nothing till the flux stops." He knew a gentleman who was cured of Gout in the Stomach many times by a draught of cold water; and cold water alone drunk largely will not only stop Profuse Sweating, but it has even cured the Plague. Half a pint of cold water every morning will prevent Stone in the Kidneys, a pint will cure Palpitation of the Heart; but to ease or cure Stone in the Bladder the sufferer should "drink largely of water impregnated with fixed air." He gives a method of making this: "Dissolve fifteen grains of salt of tartar in six spoonfuls of water, to which add as much water acidulated with oil of vitriol as will neutralize the salt. They are to be gradually mixed with each other so as to prevent the effervescence or dissipation of the fixed air as much as possible."

The greatest triumph of cold water, however, is this: "A Farmer aged seventy in a confirmed ascites was given over for dead. Being desperate, he drank three quarts of cold water every four and twenty hours. His whole food meantime was Sea biscuit, sometimes with a little butter. For sixteen days he seemed worse. Then he discharged for near a week a vast quantity of water and was soon free from his disease, which never returned."

Warm water is prescribed for the prevention of Stone, a pint daily just before dinner, preferably with a large onion sliced in it. It is used also as an emetic. Sea Water every other day will cure Swelled Glands in the Neck; for Shingles, "drink sea water for a week every morning, toward the close, bathe also."

About the time of the first edition, or shortly before, the well known Bishop Berkeley had strongly advocated the use of tar water; and Wesley is warmly in favor of it for many diseases. He gives a direction for making it thus: "Put a gallon of

[1] What Sydenham's English version as translated by Dr. John Pechey says is "I order a live Kitling to be always upon the naked Belly." Fourth edition, London,

cold water to a quart of Norway tar. Stir them together with a flat stick for five or six minutes. After it has stood covered for three days, pour off the water, clear, bottle and cork it." It is recommended for St. Anthony's Fire externally and internally, internally for Asthma. "A Cancer under the eye was cured by drinking a quart of tar water daily, washing the same with it, and then applying a plaister of tar and mutton suet melted together. It was well in two months though of twenty years' standing." Drunk twice a day it has cured Dropsy; a large glass warm every hour cures Fever; half a pint morning and evening for three months is a Specific for the Falling Sickness and the Scurvy, and cures the Palsy; a glass taken warm every half hour is good for Pleurisy, and less frequently for Stoppage in the kidneys. All these pale into insignificance, however, when compared with the following: "Take tar water morning and evening; this is a tried medicine for Old Age and will probably renew the Strength for some years."

It is at least curious that tar water is not recommended for smallpox, for which it is especially urged as a remedy by Berkeley.

The cold bath is an especial favorite with Wesley; he recommends it for Ague, Tertian or otherwise, Apoplexy, Cancer in the Breast ("this has cured many"), Chin Cough or Hooping Cough, Nervous Cholic (i. e., "a cholic with purging, some term them watery gripes"), Consumption ("cold bathing has cured many deep Consumptions. Tried"), Convulsion, Corns, an Inveterate Cough ("it seldom fails"), Deafness, the Dropsy (after purging), the Falling Sickness, a slow Fever, Hemicrania, Leprosy ("in this disease the skin in many parts is covered with rough whitish scaly pustules, if these are rubbed off, with a kind of scaly scurf"), the Palsy, Sciatica, Scorbutic Atrophy ("also . . . all Scorbutic pains"), Stone in the Kidneys, Vertigo, Torpor or Numbness of the Limbs, Tympany or Windy Dropsy, involuntary Urine. It will be seen that he in his medical directions applied his own well known maxim: "Cleanliness is next to Godliness." It is curious, however, that sea bathing is not more in favor. Very rarely indeed is a warm bath advised, i. e., for the Iliac Passion and St. Anthony's Fire.

After water, warm lemonade is the favorite drink. "For Bilious Cholic drink warm lemonade. I know nothing like it," also for Hysteric Cholic; in an Intermitting Fever, "drink warm lemonade in the beginning of every fit, it cures in a few days. Tried"; the Stranguary; Urine by Drops with Heat and Pain, and Suppression of the Urine are all benefited by drinking warm lemonade, and it is useful to produce and "continue a long sweat in Quartan Agues." Wesley does not seem ever to have used cold lemonade.

Apple water made by pouring boiling water on sliced apples is recommended in Asthma.

Curiously enough, milk as a beverage receives little notice. A pint of new milk taken morning and evening has cured an inveterate Asthma; milk and milk porridge are the proper breakfast for children, and milk should be given warm from the cow every morning in Hooping Cough; in Consumption, "use as a common drink Spring water and new milk each a quart" or "a pint of Skimmed milk with half a pint of small beer." But in the last stage, "suck a healthy woman daily. This cured my father." In diabetes, "let your drink be milk and water." To cure Night Sweats, "drink a gill of warm milk at lying down."

I have within this present year known apple water made in this way with Spitzenberg apples administered for rheumatism, apparently with good effect—or was it simply imagination?

Perhaps there should be mentioned here a prescription which Wesley quotes but does not vouch for. "Dr. Chyne says a total Ass milk diet, about two quarts a day without any other food or drink will cure a confirmed cancer." ("Dr. Chyne" was Dr. George Cheyne (1671-1743), one of the earliest vegetarians, who, born in Aberdeenshire and educated at Edinburgh under Pitcairn, practised at London and Bath. He wrote on Mathematics as well as Medicine, Dietetics, and Natural Theology, "an all-round man.") Wesley's tried remedy for a cancer is "Take horse spurs (a kind of warts that grow on the inside of the horse's forelegs), dry them by the fire, till they will beat to powder. Sift and infuse two drachms in two quarts of ale; drink half a pint every six hours, new milk warm. It has cured many. Tried.

In the preface, he advises to take always such a sort and such a measure of food as sits light and easy on the stomach, eschewing pickled or smoked or salted food and all that is high seasoned. For studious persons about eight ounces of animal food and twelve ounces of vegetable in twenty-four hours is sufficient; strong, and more especially spirituous liquors, are a certain, though slow poison, and experience shows that there is very seldom any danger in leaving them off at once. In the body of the book not much is said about diet in sickness. "One in a deep Consumption was advised to drink nothing but water, and eat nothing but water-gruel without salt or sugar. In three months' time he was perfectly well." "Take no food but new buttermilk churned in a bottle, and white bread. I have known this to succeed in Consumption." For scurvy, "live on turnips for one month"; for Costiveness, "live upon bread made of wheat flour, with all the bran in it"; for a Raging Madness, "let him eat nothing but apples for a month," and in Nervous Disorders, a full dietary is given. So also in a Dry Asthma, the patient is to use "food light and easy of digestion, Ripe Fruit baked, boiled or roasted, are very proper." For the Asthma, "live for a fortnight on boiled carrots only; it seldom fails." For the Falling Sickness, "use an entire milk diet for three months; it seldom fails." For Extreme Fat, "use a total vegetable diet. I know one who was entirely cured of this by living a year thus; she breakfasted and supped on milk and water (with bread) and dined on turnips, carrots, and other roots, drinking water"; in a Dysentery, "feed on rice, saloup, sago, and sometimes beef tea, but no flesh"; in a Raging Madness, "let him eat nothing but apples for a month" or "nothing but bread and milk. Tried." For Rheumatism, "live on new milk, whey, and white bread for fourteen days; this has cured a

desperate case." "In a Stubborn Rheumatism, let your diet be barley-gruel, with currants, roasted apples, fresh wheys and light puddings." "In smallpox, let your whole food be milk and water united with a little white bread" or "milk and apples."

Wesley has very few medicines whose virtues consisted simply in their nastiness. Dry Zibethum Occidentale, i. e., Stercus humanum for films on the eye, Stercus bovinum warmed and spread on leather, used hot as a topical application for a Windy Rupture, Ear wax for White Specks in the Eye, and Goose Dung and Celandine on a plaster for cancer, exhaust the list.

He has many of the usual remedies which were in vogue at the time and most of which will be found in Buchan; and he applied them in no manner differing from others. Tarter Emetic and Ipecacuanha, Valerian and Wormwood, Horseradish, and Carduus Benedictus, Quince, Bramble and Burdock Leaves, Pennyroyal and Magnesia, Balm of Gilead, Balsam of Peru, Cinquefoil Tea, Sweet Oil and Balsam of Capivi, and scores of others which call for no remark.

He is thoroughly convinced, however, that electricity comes the nearest to a universal medicine of any yet known in the world and recommends it on almost all occasions—for Bruises, Baldness, Burns, and Scalds, Deafness, Dropsy, Epilepsy, Headache, Lunacy, Obstruction of the Menses, Nervous Disorders, Palpitation of the Heart, even for the Tooth Ach, etc., etc.

Wesley's views of infection are worth noticing: "To prevent catching any infectious fever do not breathe near the face of the sick person, neither swallow your spittle in the room. Infection seizes the Stomach first."

Some of his prescriptions are models. For example, his first for Costiveness is simply, "rise early in the morning"; for the Whites, "live chastely, Feed sparingly, use exercise constantly. Sleep moderately, but never lying on your back."

Of exercise, in the body of the work, our author has not much to say. In the preface, he seems almost to look upon the penalty "In the sweat of thy face shalt thou eat bread" as a blessing, for that is "one grand preventative of pain and sickness of all kinds . . . the power of exercise both to preserve and restore health is greater than can well be conceived, especially in those who . . . observe both that kind and measure of food which experience shows to be most friendly to health and strength." He adds, "A due degree of exercise is indispensibly necessary to health and long life . . . walking is the best exercise for those who are able to bear it, riding for those who are not . . . the studious ought to . . . exercise at least two or three hours a day."

In the body of the book, those troubled with nervous disorders are advised to rise early, and as soon the dew is off the ground, walk; those with the Whites to exercise constantly, and also those with the Quartan Ague or Dry Asthma; but the value of exercise for the sick is not otherwise emphasized. No doubt, Wesley thought the advice in his preface sufficient.

One element in his Materia Medica would excite a smile in any one unfamiliar with the conceptions of *vis medicatrix* at the time; the ash of scarlet cloth blown into mouth or throat seldom fails in Cancer in the Mouth or Thrush. It must not be supposed that Wesley followed the usual practice slavishly. If one were to take a contemporary work on the practice of medicine, he would be certain to find the remedies most in vogue, pretty much in this order: bleeding, purging, vomiting, salivation, opiates, Peruvian bark, steaming.

Bleeding is not generally recommended by Wesley; we find it directed only for a Tertian Ague; for Apoplexy (if not after a full meal); in a Fever "if the Stomach is uneasy, vomit; if the bowels, purge, if the pulse be full hard of Strong, bleed"; and Menses Nimii.

Purging is advised in the case of a Tertian Ague after Measles. For obstruction of the Menses, "eight or ten grains of Calomel both vomits and purges," Palsy of the Hands, the Sciatica, Tympany or Windy Dropsy.

A Vomit (gentle) is recommended for Ague, for Apoplexy (if after a meal), a Dry Asthma, sometimes in Heart Burning; for Vertigo, "take a vomit or two."

Salivation is not advised at all. Quicksilver is recommended in its metallic form for Twisting of the Guts. "Many at the point of death have been cured by taking one, two, or three pounds of quicksilver," for which Pareus (i. e., Ambrose Paré) is cited as authority, and there is inserted for the sake of innocent sufferers a cure for Lues Venerea: "Take an ounce of quicksilver every morning and a spoonful of Aqua Sulphurata in a glass of water at five in the afternoon. I have known a person cured by this when supposed to be at the point of death, who had been infected by a foul nurse before she was a year old." In the Green sickness, take an ounce of quicksilver every morning; for the Iliac Passion, "take ounce by ounce, a pound or a pound and a half of quicksilver," following Doctor Tissot's prescription; for Worms, "boil four ounces of quicksilver an hour in a quart of clear water, pour it off and bottle it up; you may use the same quicksilver again and again. Use this for a common drink . . . . for a week or two. . . . . For Asthma or the Whites, take an ounce of quicksilver every morning and a spoonful of Aqua Sulphurata at five in the evening, and in Nervous Cholic take these daily for a month."

Opiates are very seldom recommended. In the hot fit of an Ague, if it should be violent, eight or ten drops of laudanum are prescribed; in an Hysteric Cholic, twenty drops in the form of a clyster; in Epilepsy, "five or six drops . . . fasting for six or seven mornings. This has cured many." In a Bloody Flux, four drops; for Inability to Sleep, opium is forbidden and camphor prescribed in its stead.

Bark is directed to be chewed and the spittle swallowed so long as it is bitter, in case of a cough; to prevent profuse Sweating, a tincture of Peruvian Bark in spirit of vitriol; for "Falling of the Whomb," the same; for Scorbutic Gums," wash them daily with a decoction of the Peruvian Bark."

Steaming was always much in vogue with empi-

ries on this side of the Atlantic. Wesley does not seem to have built much on it. For Strangury, "sit over the steam of warm water"; "Indolent Sweatings are often cured by warm steams."

In one of his prefaces he says: "I have omitted (together with Antimony) the four Herculean medicines, Opium (except in a very few cases), the Bark, Steel and most of the preparations of Quicksilver" which are "far too strong for common men to battle with." Antimony he prescribes only once and that in a most mitigated form; Sulphur of Antimony on a chafing dish of coals, and the fumes received by a funnel, in Obstruction; Steel filings ground into a powder with red sugar candy are given in Green Sickness as an infallible remedy; Opium, the Bark and Quicksilver we have already discussed.

Another favorite treatment of the time, i. e., the Seton, is advised only once—in the neck to prevent a relapse in cases of Apoplexy; as it is accompanied by a direction for low diet, it is probable it would do no great harm. An Issue in the Thigh, he says, will cure a Quinsy of the Breast.

He gives a formula for Daffy's Elixir and Turlington's Balsam—the latter under the name of Friar's Balsam was in every farm house fifty years ago. He recommends Doctor Hardwicke's fever powder at one shilling an ounce instead of Doctor James's powder at half a crown a packet—"if it be not the same, it will answer the same end."

Wesley is not dead to the importance of calling in a skilled physician or surgeon. We have seen what he said in his prefaces. In Apoplexy, after giving the remedies to be applied, he adds: "But send for a good physician immediately"; in case of the Bite of a Mad Dog, he says: "N. B. Immediately consult an honest physician"; while his directions in case of wounds are only to be followed "if you have not an honest surgeon at hand." What a "good or honest physician or surgeon" is, appears by what he says in his prefaces.

It will be found that Wesley's treatment of diseases was at least as reconcilable with common sense as that of the contemporary regular practitioner, much more so in most cases. Of it, at least, it could be said (what he says of cold water in fever) "it did no great harm."

A remark interesting to Americans is his statement about Nettle Rash: "In Georgia, we call it The Prickly Heat"; he had not forgotten and never did forget his sojourn in the "Southern Colony."

Osgoode Hall.

A CASE OF ACUTE LYMPHOCYTE LEUCEMIA.*

By John Ballagi, M. D.,
Homestead, Pa.,
Pathologist to Homestead Hospital.

The subject of my paper is a rather rare disease, acute lymphocyte leucemia. I had the opportunity to see a patient lately, afflicted with this malady, whose clinical symptoms were so characteristic and instructive that I intended to present him to you this evening. Unfortunately he died after a very short illness, not lasting longer than about five weeks; so I have to restrict myself to simple reporting, with demonstration of a few microscopical slides of the blood.

Case. The patient was a Hungarian by birth; male; twenty-eight years old; steelworker in the Homestead Steel Works the last two years. Father fifty-four, mother forty-six, both living and healthy. Two brothers and two sisters were twenty, sixteen, thirteen, and ten years old respectively, all living and healthy. One brother died at the age of twenty-four two years ago, of "swelling of the liver and spleen" after an illness of six months.

Patient never was sick except that when nine years old he had tertian malaria fever lasting three months. Syphilitic infection could be excluded. The present sickness began in the latter part of August this year. I saw him on several occasions before that—in March last, when I prescribed for a simple catarrhal conjunctivitis he had—and am positive he did not show any symptoms of leucemia. Moreover he was working, and working hard, up to September 5th; consequently his statement that he was well up to August 20th we might accept as true. From that on he was feeling tired all the time; lost his appetite; had pains in his stomach; had constant headache and constipation; slight epistaxis and bloody sputum once in a while; chilliness at night, sweating, and increased dyspnea.

Presented himself at my office on September 6th with *status præsens* as follows:

Patient was six feet high and weighed 195 pounds; was broad shouldered; musculature well developed; body well nourished; moderate amount of fat. The face looked puffy and showed a peculiar, dirty pale color. Respirations, 25; pulse, 80 per minute, full, soft, and regular. Temperature, 101° F. at 11 a. m.; skin was covered by perspiration.

The mucous membranes of the mouth were pale; tongue coated; tonsils pale and slightly enlarged. All the glands of the neck, in the armpits, and in the groins were considerably enlarged and moderately hard, though not inflamed nor painful. Lungs and heart normal. Abdomen large and tender on the left side; liver not palpable, but the liver dullness reached the fifth rib in the parasternal line. Epigastric region very tender. There was a large, hard mass with an even surface about ten inches long and six inches broad, filling out the left lower epigastric, the left upper umbilical, and the left upper anterior lumbar regions. It was slightly movable and its edges could be felt distinctly.

Arms and legs were sore; joints free and not painful; slight edema around the ankles. Urine voided about 1,500 c. c. a day; clear, amber colored; acid; specific gravity, 1.020; uric acid not increased; no albumin nor sugar; no sediment.

Examination of blood showed:

Normal color, coagulation time six minutes.
Hemoglobin, 80 per cent.
Erythrocytes, 3,500,000.
White blood cells, 400,000.
Differential count:

Polynuclear neutrophiles, ...10 per cent.;
Small lymphocytes, ...80 per cent.;
Large lymphocytes, ... 6 per cent.;
Basophiles, ... 1 per cent.;
Eosinophiles, ... 3 per cent.

Numerous lymphocyte shadows and blood plaquelets not counted. Myelocytes or myeloblasts occasionally could be seen.

Patient felt very sick. There was a constant nausea with a feeling of overfullness of the stomach, anorexia, constipation, and a very annoying cough without expectoration.

The course of the disease was very short. The patient was put to bed at the Homestead Hospital on September 6th, placed on milk diet and mild laxatives, and chinin with nux vomica were prescribed. Sleeplessness, gastric pains, soreness of the throat, vomiting, thirst and profuse perspiration, irregular temperature between 98° and 102° F. were the prominent symptoms the first five days.

September 8th, slight drowsiness all day. September

*Read before the Allegheny County Medical Society in Pittsburgh, Pa., October 21, 1913.

11th, blood tinged expectoration. September 12th and 14th, epistaxis. September 15th, severe epistaxis lasting fifty-five minutes. September 15th, 16th, and 17th, epistaxis again. Small ecchymotic spots appeared on both legs. September 19th, patient passed liquid, greenish stools with particles of clotted blood. The whole lateral surface of both legs were dark purple colored. Hematemesis. Urine diminished in quantity, contained small amount of albumin but no casts. A shaking chill at 4 a. m., the temperature rose from 97° to 102° F. in two hours. Feet and hands were cold and cyanotic. The patient seemed to be in great pain all morning. He lost consciousness at 9 a. m. and died with symptoms of acute pulmonary edema at 11 a. m. Post mortem was not allowed.

On the first examination the clinical symptoms were almost sufficient to make the diagnosis of leucemia. The blood picture showed it to be of the lymphocyte variety, and the rapid course, hardly more than four or five weeks, the tendency to hemorrhages and the febrile temperature justified the diagnosis of acute lymphocyte leucemia. As I have mentioned, it is not very common, and the number of reported cases hardly reaches the 150 mark.

The two principally different forms, the leucocyte (myelogenous) and the lymphocyte (lymphatic) ought to correspond to two different sets of clinical symptoms. But they do not. There is no constancy of the clinical picture; we may find enlarged spleen, lymph glands and large liver in both, or we may almost miss them. Pyrexia and hemorrhages may accompany one or the other form. Because of the many atypical cases, DaCosta rightly remarks that the gross appearance of the spleen and lymphatics must be regarded as a sign of secondary importance to the blood picture, which alone is the tangible diagnostic clue.

Since Virchow described the first cases of leucemia, the nomenclature of the affection went through several changes. The first cases were published as splenic and medullary leucemias, in the belief that the source of the disease was in the spleen or bone marrow. Later this name was changed to lymphatic and myelogenous leucemia or myelemia respectively, writers still wishing to designate the origin and place of the essential pathological changes. That name is still in vogue. But, according to Leube (Diseases of the Blood, *Medical Diagnosis*, 1904, p. 796), the classification of individual forms of leucemia, whether the spleen, lymphatics or bone marrow are implicated, cannot longer be maintained. In many, particularly chronic cases, simultaneous changes may occur in all the three organs, and corresponding physical signs present. These are the so called mixed forms. To complicate matters, quite recently Reschad and Schilling (*Münchener medicinische Wochenschrift*, September 9, 1913) contribute a new nomenclature, myocytic and lymphatic leucemia, either of them acute or chronic, and place a third systemic leucemia along, calling that new one, as independent, splenocytic leucemia. It is an acute form, with large mononuclear and transition cells or splenocytes. We know next to nothing of the conditions under which the disease develops. Because spleen, bone marrow, and lymphatics show the most prominent changes, it was supposed those are the seats of the disease also. Modern research compels us to modify this theory. As Schriddle (in Aschoff's excellent *Pathologische Anatomie*, ii, pp. 97 and 110) asserts, the whole pathological process, at least what we know of it, is not an exclusive affection of the bone marrow, spleen, or lymph glands, but of the blood and lymph capillaries also. Leucocytes, lymphocytes, and myelocytes are formed "an Ort und Stelle," in the blood and lymph vessels from the endothelial cells of the capillaries.

Considering these facts and in comparison to the results of the microscopical blood examination, all the other morbid phenomena, even if they greatly assist the diagnosis in single cases, are of subordinate importance. The best is to follow Leube's advice, drop any connection between origin and apparent seat of the disease, but name it after the most constant symptom, that is, according to the microscopical blood picture. What is most striking in the microscopical field besides the general increase of the white blood cells? The great number of leucocytes in one case and the great mass of lymphocytes in another. The circumstance that once in a while the blood would not show leucocytosis or lymphocytosis does not make any difference. Leucocytosis or lymphocytosis we may miss temporarily, but it is present most of the time during the course of the disease in all cases. Leube therefore quite properly recognizes two varieties and designates them as lymphocyte leucemia and leucocyte leucemia, either one acute or chronic. The existence of the third form, splenocytic leucemia, is problematic as yet.

My further remarks concern the etiology and treatment of this affection.

Some cases like the present one take such a rapid course and show so great resemblance to the effects of a microorganic toxin that the possibility of an organic, maybe amebic infection cannot be excluded. Discoveries of a guilty parasite were not wanting, especially Loewit's *Hæmomeba leucæmiæ magna*, and *Hæmomeba leucæmiæ parva vivax* in both forms made quite a sensation some ten years ago. But the hopes were not fulfilled: his protozoas were artifacts. In fixed and stained slides the lymphocyte shadows might be mistaken for amebæ with a little good will.

On the other hand, several etiological factors seem to have a certain possibility; first, mechanical trauma. The Italian Fachini found seven cases of leucemia reported after an accident involving the spleen, and observed two himself where the spleen was directly injured. The second is malaria. DaCosta, Leube, Osler and all mention malaria. In the present case I want to call your attention to the fact that this patient himself had had malaria (was raised in a place where malaria was endemic), and one of his brothers died as he termed it of "tumor of the spleen and liver." Nothing could be found in the blood justifying recent or past malarial infection: no parasites, no melanin deposits. Still, since he left the old country but two years ago, a latent malarial infection might be considered. From my experience I am certain that malaria may be latent as long as a year at least. I had a patient in Homestead—where malaria does not exist—an Italian boy of six years, in whom typical tertian malaria developed just eleven months and two weeks after a short visit to Italy. (Diagnosis was confirmed microscopically and by the therapeutic chinin test.)

As to treatment, there is hardly any in acute cases, except symptomatic. Chronic cases are certainly benefited by large doses of arsenic and, maybe, salvarsan would be worth trying. Röntgen rays upon the spleen cause remissions of symptoms. Splenectomy was tried with good effect too. The newest remedy, pure benzol, recommended by Doctor Korányi in Budapest, according to numerous reports, diminishes the number of white blood cells to normal or even subnormal in from two to four weeks, with corresponding amelioration of all symptoms. But we have to keep in mind that chronic cases may and do improve without any medication. Remissions in the severity during the course of the sickness are almost a rule.

In my case salvarsan, considering the patient's grave condition from the start, could not be thought of. X rays I have not had at hand, so I turned to benzol. Unfortunately, the druggists or the wholesale drug houses, whom I was asking for benzol, did not have any; they had no idea what benzol really was; they confounded it with benzine, quite a different stuff. When at last I could procure some from Doctor Koch at the Pittsburgh University, much valuable time was lost, and the patient died.

438 Fifth Avenue.

A REPORT ON THE TYPHOID FEVER EPIDEMIC IN MANHATTAN, 1913.*

By the Central Council of Public Health of the City of New York.

PURPOSE OF THE STUDY.

When deciding to undertake a study of the present typhoid outbreak in Manhattan, the Central Council of Public Health of the City of New York realized clearly that the department of health had given the typhoid situation as thorough consideration as was possible with the means at their disposal. It was felt, however, by those initiating this investigation that it might be possible to supplement these efforts and to utilize methods which were not perhaps available for the department of health. It was hoped that an independent investigation might throw additional light on the original source of the milk infection, that it might discover facts bearing on the etiology of the epidemic, and that more definite knowledge would be obtained concerning the effectiveness of the health department's measures in preventing secondary infections.

The conduct of this investigation by the central council would have been impossible had it not been for the immediately volunteered and most effective help and active cooperation of the Henry Street Settlement, the Bureau of Public Health and Hygiene of the A. I. C. P., the New York Milk Committee, and the Consumers' League of the City of New York. To all of these organizations the council records its indebtedness.

INTRODUCTORY.

Typhoid fever is essentially a disease of filth. It is derived from filth, on which flies thrive and which contaminates our water, vegetables, oysters and other shell fish, and these foods, in addition to our careless personal habits, are responsible for the spread of this disease, which is similar in its modes of transmission to cholera. While we dread the latter and take most active measures against it, we are criminally indifferent to typhoid and do not even observe the necessary sanitary rules when in contact with a person suffering from the disease.

Formerly, water was regarded as the most important vehicle of contagion. Recent studies, however, show that only thirty-five per cent. of the typhoid in this country is waterborne, and that a very large percentage is due to contaminated milk.[1]

The present autumn outbreak of typhoid on the east side of Manhattan, below Fortieth Street, was due to the last cause. The water supply of Manhattan is at the present time, and has been continuously throughout the summer, treated with chloride of lime by the Department of Water Supply, Gas, and Electricity, and has also been regularly examined; and there is no reason to doubt the freedom of the water from this infection.

What proper sanitary supervision can accomplish in preventing the occurrence of typhoid can be judged from the comparative table of the death rates from typhoid fever in certain large cities of the world as given below for the year 1910:

DEATHS FROM TYPHOID FEVER PER 100,000 POPULATION.

Hamburg	2.5
Berlin	3.6
London	4.0
Vienna	4.1
Paris	6.7

In contrast, the figures of the five largest American cities for the same year are:

New York	11.6
Boston	11.6
Chicago	13.7
Philadelphia	17.4
Washington, D. C.	23.2

THE DIVISION OF TYPHOID FEVER OF THE DEPARTMENT OF HEALTH.

The control of typhoid fever in this city is centred in a Division of Typhoid Fever, Cerebrospinal Meningitis, and Acute Anterior Poliomyelitis, which forms one of several sections of the Division of Infectious Diseases, with a special chief. The inspection of cases of meningitis and poliomyelitis is assigned to district inspectors at the various branch offices. Typhoid fever cases, however, are visited by special inspectors of the division. Under ordinary circumstances five medical inspectors are attached directly to the division office: three for Manhattan, Bronx, and Richmond; one in Brooklyn, and one in Queens. Their function is to visit typhoid fever cases, obtain all the facts concerning the history of the patient and the circumstances bearing on the cause of the attack. It is also their function to visit the milk stores from which the patients buy

*The report was prepared by Donald B. Armstrong, M.D., and E. H. Lewinski-Corwin, Ph.D. The members of the Central Council of Public Health are: John H. Finley, [illegible] Bailey B. Burritt, Esq., Charles Loomis Dana, M.D., Lillian D. Wald, M.D., Hon. Frank Dale, Esq., Miss Pauline Goldmark, John H. Hoffman, M.D., Jam[illegible] Lawrence, Esq., Jr.; Edward T. Keyes, Jr., M.D., Darwin Van Ingen, M.D., Miss Lillian D. Wald, Professor C. E. A. Winslow, and E. H. Lewinski-Corwin, Ph.D., executive [illegible].

[1]Rosenau: *Preventive Medicine and Hygiene*, quoting Whipple, p. 86, 1913.

their milk to ascertain the source of the milk supply. The inspectors are, in addition, charged with the duty of instructing members of the households of the patients on the nature of the disease, its mode of transmission and precautions to be taken when in contact with a typhoid patient. It is also their duty to distribute copies of printed instructions concerning the nature of the disease and the precautions to be observed.

While it is the rule of the division to visit typhoid fever cases only once, during outbreaks, however, more than one visit to a case is frequently ordered. This, of course, necessitates an addition to the force which is usually obtained by temporary transfers from other sections. During the last outbreak, in addition to the five regular inspectors, the staff of the division was temporarily enlarged, so that at the end of September, at the height of the epidemic, the division had seven additional inspectors for Manhattan.

The following is a statement of the additional force of the division for the period since September 1, 1913, till December:

For Manhattan:

One additional inspector from September 1st to present time, December, 1913.

One additional inspector from September 19 to October 22d.

Two additional inspectors from September 25th to October 1st.

One additional inspector from September 26th to present time.

One additional inspector from October 14th to October 20th.

One additional inspector from September 19th to present time.

For Brooklyn:

One additional inspector from September 22d to October 22d.

For the Bronx:

One additional inspector from September 25th to October 18th.

THE PRESENT TYPHOID SITUATION IN MANHATTAN.

When the September reports of cases of typhoid began to come into the department of health, and were classified according to the sources of supply from which the patients bought their milk, the department at once became suspicious of a certain milk supply to which twelve cases were almost immediately credited. Subsequent reports and elaborate and painstaking studies of the health department pointed in the same direction, and to the milk supply of one dairy in particular. Special examination of the suspected dairy was ordered; and although the physical and bacteriological examinations failed to discover the direct source of contamination, further shipments of the raw milk of the dairy in question were stopped on September 6th, and all milk from that supply was ordered pasteurized. The month immediately following the stoppage of this raw milk supply showed the greatest prevalence of typhoid in the outbreak area on the East Side, and a coincident highest prevalence of this disease in this city as a whole. Since the week of October 11th, the cases reported have decreased very considerably. At the time of this writing (December 1st) the epidemic seems to be well under control, although a general incidence higher than usual for Manhattan is still observable.

The total number of typhoid cases reported for the period from July 1st to November 1st, for the whole city, is 1,976; for the borough of Manhattan it is 1,268. The total number in the outbreak area for the same period is 657.

From a glance at the table given below, showing the prevalence of typhoid for the corresponding weeks of 1913 and 1912 and of the five year average 1908 to 1912, for Manhattan and the city as a whole, one can see how considerable the extent of the outbreak has been. At times the prevalence was several hundred per cent. greater than last year and almost as serious in comparison with the average prevalence for the last five years:

PREVALENCE OF TYPHOID FEVER IN MANHATTAN.

July 1 to November [illegible], 1913, and [illegible].

Week ending.	Cases reported. 1913	Corresponding week, 1912	Five year average
July 5	1	23	18
12	15	26	21
19	18	34	26
26	23	28	25
Aug. 2	17	31	23
9	28	56	41
16	23	37	41
23	8	48	8
30	9	43	67
Sept. 6	3	45	6
13	7	31	7
20	170	60	97
27	183	42	7
Oct. 4	253	49	81
11	120	43	44
18	83	38	4
25	62	41	6
Nov. 1	71	31	31

PREVALENCE OF TYPHOID FEVER IN GREATER NEW YORK.

July 1 to November 1, 1913, 1912, and 1908-1912.

Week ending.	Cases reported. 1913	Corresponding week, 1912	Five year average incidence 1908-1912
July 5	2	45	42.1
12	43	60	39.0
19	36	64	37.1
26	47	64	37.5
Aug. 2	45	137	99.8
9	48	201	87.2
16	69	165	69.3
23	67	128	57.0
30	60	126	51.3
Sept. 6	161	139	52.8
13	200	138	64.7
20	238	142	68.0
27	250	128	146.0
Oct. 4	344	98	100.9
11	177	108	68.3
18	122	87	57.0
25	106	112	68.1
Nov. 1	127	81	49.3

METHODS AND EXTENT OF THE INVESTIGATION.

The records of the divisions of milk and typhoid inspection of the health department were first carefully studied to discover the relationship of the case distribution of milk routes in the city. It was found that this had already been done very thoroughly by the department and that the indications had been closely followed up. As stated before, a certain milk supply which was suspected by the department as being the possible source of infection, but against which there could be obtained neither by the department nor by the special investigators any absolute evidence of contamination, was very wisely ordered to be pasteurized. There is good evidence to show that pasteurization was put in force immediately; though our investigators have discovered three instances of the sale of raw milk from the source under suspicion, without the knowledge or consent of the department, between the time when pasteurization was ordered and the date when the

embargo was removed. This is one of several indications of the inability of the health department to keep a close and constant supervision over the milk situation with the present inadequate machinery for inspection. It must be realized that there are only twenty-nine milk inspectors assigned to New York city, and that this small number is supposed to supervise fifteen receiving stations, fourteen thousand stores, and about four thousand restaurants. Of course, the same inadequacy must be noted in the country districts where twenty-three inspectors are supposed to keep in intimate touch with eight hundred creameries and forty-four thousand dairies supplying milk to New York city. In spite of all that, however, constant watch at the railroad platform where milk for the particular supply was received might have discovered the illegal shipments.

At the same time that the source of milk was investigated, our agents visited a number of retail milk dealers to make observations on the method of supervising milk stores; on the character of the milk then being sold in these stores, whether raw or pasteurized and the source of it; on the sale of milk without permits; and, in general, on the sanitary environment of the milk-distributing system. An analysis of this study is given in another part of the report.

THE HOUSE TO HOUSE CANVASS.

Perhaps the most striking and important results were obtained from a house to house investigation in the districts throughout which the typhoid incidence was known to be most marked. For this purpose twelve districts were selected and a thorough canvass was made of all the homes, the nurses making the canvass being asked to fill out a questionnaire bearing on the etiology, transmission, disposal of excreta, health department care, etc., wherever a case of typhoid was found. In eleven days from October 24th to November 5th, 4,569 families were visited. The districts selected were as follows:

District I: Seventh Street, between Second and Third Avenues.
District II: Eleventh and Twelfth Streets, between Second Avenue and Avenue A, also First Avenue between Eleventh and Twelfth Streets.
District III: Fifteenth Street, between First Avenue and Avenue C, also First Avenue between Fifteenth and Sixteenth Streets.
District IV: Columbia Street, between Grand and Rivington Streets.
District V: Twenty-ninth Street, between Third and Second Avenues, also Second Avenue, between Twenty-seventh and Twenty-ninth Streets.
District VI: Rutgers Street, Cherry to South Streets.
District VII: East Sixteenth Street, between Avenues B and C, also Avenue C, between Sixteenth and Seventeenth Streets.
District VIII: Amsterdam Avenue, between Fifty-ninth and Sixty-third Streets, also Sixty-third Street, between Amsterdam and Columbus Avenues.
District IX: West 102d Street, bteween Eighth and Amsterdam Avenues, also Columbus Avenue, between Ninety-first and 103d Streets.
District X: Mulberry Street, between Bayard and Grand Streets.
District XI: Thompson Street, between Canal and Houston Streets.
District XII: Rutgers Street, Henry to Monroe Streets.

It will be noticed that sections were selected on both the East Side and the West Side, thus giving a basis for the comparison of the records of several important factors in the typhoid situation. The names of the cases discovered were taken to the health department to find out whether they had already been reported. The question of unreported cases in typhoid fever is vital and will be considered more fully later in this report in connection with an analysis of the results of the present investigation bearing on this phase of the subject. The questionnaire used, hastily prepared and in some respects incomplete as it was, ran as follows:

Date.....
Name .....Age .....Occupation .....
1. Are there any other cases of typhoid in the household?
2. Date of onset.
3. Are there other cases in the same house?
4. Any cases in the family or house immediately previous?
5. Is there any record of cases in the family or house in the past?
6. Sick person sent away?
7. Physician: Name ..... Address .....
8. Who is nursing the patient? Day? Night?
9. Does the patient drink milk? Supply? Name and address of dealer?
10. The water supply?
11. Did the patient use celery, lettuce, etc.? Supply?
12. Did the patient eat oysters, shellfish, etc.? Supply?
13. Did the patient eat ice cream? Supply?
14. Did the patient eat butter? Supply?
15. Where was the patient working?
16. While the patient was working, did he drink milk? Water? Has patient been recently out of town? Where? Did he use milk? Water?
17. Other members of the family working at present?
18. Are there children going to school? What school?
19. How many in family, including boarders?
20. How many rooms? How many bedrooms?
21. Is there any home industry carried on?
22. Where does the family eat?
23. Who prepared the food for the family?
24. Water closet in the apartment? In the hall? Used by more than one family? Privy in the yard?
25. Disposal of patient's excreta? Disinfected?
26. Department of health visiting? How often? Any instructions from health department? Written or oral?
27. General observations: .....

RESULTS OF HOUSE TO HOUSE INVESTIGATION.

Although in the tables to be analyzed later, in discussing the reporting of cases, only eighty-six such cases are considered because it was for that number only that sufficient facts were ascertained to warrant their consideration in that connection, in the house to house canvass, we had altogether on record ninety-one cases of typhoid fever. Five cases considerably antedated the present epidemic. The results of this investigation though based on a small number of cases are, nevertheless, important from several points of view. The tabulation of these results gives the following definite facts:

1. It was found that in the districts studied on the West Side, the ratio of typhoid cases to families was one to eighty-five; on the East Side, the ratio was one to forty-seven; or, on the average, one to every second house.

2. The proportion of cases that went to hospitals was surprisingly large—sixty out of eighty-six—or fully seventy per cent.

3. There is a large amount of evidence to show a house grouping of cases. It is found that in thirty-three per cent. of the cases there were other cases in the same house, while in thirty-one per cent. of the cases there was a record of a case immediately previous.

4. The most striking evidence bearing on the probability of secondary infection in a large num-

ber of instances is the fact that in seventy-five per cent. of the cases there was a period during which the same person nursed the patient and cooked the food for the rest of the family. One instance was discovered in which the mother cared for the patient (her daughter) at the same time cooking the food for the family; and then herself became ill and went to bed. During her illness, the former typhoid patient got up, and did the family cooking.

5. It was found that "loose" milk, i. e., according to the definition of the health department, any milk which is not bottled, was the kind used in sixty-five per cent. of the families in which typhoid occurred. There was evidence to show that a great deal of this milk had come from the source eventually eliminated by the health department, but no exact figures can be given. It was impossible to obtain in every instance the name of the milk or grocery store where milk was bought. In connection with this subject, it is of interest to note that, according to the health department's records, at the beginning of the outbreak seventy per cent. of the cases on the lower East Side got their milk from the suspected dairy.

6. The facts ascertained concerning other food possibilities were not particularly significant. Thirty-eight per cent. of the patients had eaten ice cream, but there was no evidence of localization of supply. The same can be said for the answers concerning uncooked vegetables, shell fish, etc.

7. An unimportant but not negligible factor concerns excreta disposal. In thirty-four per cent. of the families the toilets were used in common with other families. This is of importance when it is realized that the excreta were disinfected in only sixty-four per cent. of the cases, and then frequently by a chemical with a very low phenol coefficient.

8. Seventy-two per cent. of the cases discovered, i. e., all the cases reported to the department of health, had been visited by the official inspectors. Although it is the practice of the department to visit typhoid cases only once, this rule was not followed in the outbreak districts. Our investigation shows that twenty-three of the cases reported were visited twice, that five of the cases were visited three times, and that two were visited four times. Our inquiry with regard to instructions from the health department did not result in complete and entirely reliable information. The rule of the department of health is that printed instructions be given in each case visited. We found, however, that in five per cent. of the cases visited the people questioned answered that oral instructions alone had been received.

The printed instructions of the department of health, although complete and valuable, are printed only in English and in small type. Moreover, the precautions to be observed are not well emphasized.

9. To determine the interval between the date report was received at the office of the typhoid division and the date of the first visit to the case by the health department inspector, sixty-four of the reported cases which were found by our investigators were tabulated to show the date on which they were reported and the date of the first visit. To be entirely safe, the day on which the inspector's report came back to the typhoid division was considered as the date of the visit. It was discovered incidentally that thirty of these were reported by physicians, fifteen by hospitals, eighteen by inspectors, and one by an unidentified person over the telephone. The period intervening between the date of reporting and date of visiting is indicated in the following table:

Visited.	No.
On same day	18
1 day later	10
2 days later	11
3 days later	7
4 days later	3
5 days later	1
6 days later	4
7 days later	1
8 days later	1
9 days later	0
10 days later	0
Over 10 days	1
Total	64

From this table it can be seen that fifty of the sixty-four cases, or seventy-eight per cent., were visited within the first three days after having been reported; and that sixty-one cases were seen within the first week. The eighteen cases visited in the first were the cases discovered by the inspectors. Eliminating the cases, thirty-two, or seventy per cent., of the remaining forty-six cases were visited within the first three days after having been reported. While it would be highly desirable to have all of the cases visited within the first day or two, if the figures in this tabulation are typical for the city as a whole, it would seem that the force of inspectors, on half time service, covers the field expeditiously.

10. The question with regard to typhoid immunization was not included in our schedule. Consequently our direct information on the extent of the practice is incomplete. The rule of the department is to offer immunization to all the members of the household when a typhoid patient is found. It was ascertained that the department's inspectors frequently obtained permission to administer vaccine, but that on the next day when the official vaccinator appeared he discovered that the family physician had advised the family to refuse vaccination. This is one of the many instances illustrative of the antagonistic attitude sometimes taken by the private physician toward the department of health.

It is obvious that nearly all the foregoing facts are suggestive of the possibility, indeed the great probability, of a high percentage of secondary cases. The health department has estimated that at least ten per cent. of the typhoid incidence in New York city is of secondary origin. The evidence from this study would seem to show that the percentage is much higher, and a greater educational effort to prevent such cases is urgently indicated.

REPORTING TYPHOID CASES TO HEALTH DEPARTMENT.

Prompt notification of all cases of typhoid to the health authorities is, as in the case of all contagious diseases, the indispensable foundation for intelligent action and the exercise of proper sanitary control. There is, however, great carelessness among physicians in reporting cases, which accounts in part for the unnecessary spread of the

disease. The present study bears additional testimony to this regrettable fact. Of the total number of eighty-six cases of typhoid fever found in the house to house investigation in twelve selected districts of the city, seventy two cases were found on the East Side and fourteen on the West Side. Only seven of the fourteen West Side cases, or fifty per cent., had been reported to the health department, while the percentage of the East Side cases reported was very much higher—fifty-four out of seventy-two, or seventy-six per cent. The total number of reported cases in this study was sixty-two, or seventy-two per cent. of the total cases visited. That this is a high percentage of reported cases of typhoid in New York city can be indirectly ascertained in the following way: During the twelve years from 1900 to 1911, 7,755 deaths from typhoid fever were reported in the city of New York, and the total number of cases of typhoid reported for the same period was 42,168, making a total case fatality for New York city of 18.3 per cent., which is over eight per cent. higher than the average normal fatality from typhoid fever. There is no reason to assume that the mortality from typhoid in New York city is higher than in other large cities. The difference in the mortality rate may, therefore, be made a gauge of the degree of completeness with which typhoid cases are reported in the city. On the basis of the normal typhoid mortality rate (i. e., about ten per cent) the 7,755 deaths during the twelve year period represented at least 77,550 typhoid cases. The difference between this figure and the actual number of cases reported permits an estimate of the percentage of cases which were unreported. When computed, it shows that the 42,168 cases reported constituted only fifty-four per cent. of the total number of cases in the city. The figures of the West Side represent, therefore, more truly the degree to which cases of typhoid fever are reported in the city than the figures on the East Side.

It may be unfair to arrive at conclusions based on figures covering a period of twelve years, as conditions change very rapidly. An additional computation based on the experience of the last year alone has therefore been made separately. This computation, based on the 500 reported deaths from typhoid fever in 1912 and the 3,076 typhoid cases reported in that year, indicates that 61.5 per cent. of these cases were reported to the department of health last year.

It is probably true that in a congested district, and particularly during an epidemic, more cases are apt to come to the attention of the health department than in more sparsely populated districts with a more or less normal morbidity incidence. This, in addition to the fact that eighteen of our typhoid cases were found by the health department inspectors, may explain the relatively high percentage of reported cases on the East Side.

Private physicians are not the only offenders in this respect. The present study shows that hospitals share, in equal measure, with the private physicians in this unfortunate neglect of duty. Out of twenty-four nonreported cases, thirteen were in hospitals, and only two of these thirteen were in the hospitals less than two weeks, leaving eleven cases in which there was no obvious reason for nonreporting.

The main reason usually given for delay in the reporting of typhoid cases, compared with that of other cases, is the difficulty of establishing a positive diagnosis in the early stages of the disease. But the present readiness of the department of health to provide, without cost, facilities for examination of blood and of urine, makes an early diagnosis and report usually possible. It is to be hoped that considerations of public good will prompt private physicians as well as hospitals to more punctual reporting of cases of this disease than has hitherto been the practice, and that the health department will take more rigorous and effective steps to enforce the existing law.

THE FOLLOW UP PROCEDURE WITH THE PHYSICIANS AND HOSPITALS.

In a considerable number of the unreported cases, the nurses were able to give the name either of the physician or of the hospital (in some cases of both) that had been associated with the case. Records of fourteen such cases were accredited to ten different physicians in New York city, while eleven unreported cases were recorded as having been associated with six different hospitals. Under the direction of the Bureau of Public Health and Hygiene, a physician was employed to visit the doctors and hospital superintendents in question for the purpose of verifying the nurses' reports and for the purpose of getting an explanation from those responsible persons who had been associated with the cases not reported to the health department. Although our data were not in all instances accurate, a few interesting sidelights were obtained from this follow up procedure.

In the case of a great majority of the physicians and hospitals visited, it was found that no effort is made to keep a record of the date on which a case is reported, or to keep on file the receipts for reports which the department of health furnishes. Both hospitals and physicians assert that, as a matter of course, they reported the cases; but they having no record of having done so. The department, on the other hand, is supposed to furnish a receipt for every report. If it were possible to insist on the filing of these receipts, it would facilitate the activities of the department in this regard, would serve as a protection to the hospital and physician, and would be a valuable educational influence in the matter of reporting in general.

The excuses offered by the physicians for not reporting are various, and in many instances undoubtedly justify their action or lack of action. A failure to make a diagnosis is a frequent reason: the fact that the physician did not see the case more than once or twice and that he had sent blood speciments to the department of health and thought that sufficient, are other examples of the point of view taken by the physician—all of which indicate the necessity for an educational campaign among the physicians on the value of prompt and regular reporting, from both the sanitary and the social points of view.

SUPERVISION OF MILK STORES.

In order to determine the extent of compliance with the requirements of the sanitary code on the part of milk store keepers as to cleanliness and ways of handling loose milk, and also to determine the kinds of raw milk used at present in the outbreak area, an investigation on the East Side was made by the agents of the New York Milk Committee and the New York Consumers' League. The method of making this investigation was to follow up daily the reports made by the nurses in the house to house study. The schedules used required the nurses to ask the name of the dealer supplying milk to the sick person. Each day a special tabulation was made of these dealers, and the stores were investigated by the special field agent of the New York Milk Committee. The investigator was particularly careful to look over the lists of milk tags on file in the stores and to record the type and source of the milk that had been dispensed during the outbreak. Special attention was given to the sources of raw milk.

As a result of this investigation it was found that in at least three instances milk from the suspected dairy was sold raw, although the ruling of the department of health against the sale of raw milk from this source was not rescinded. Few as these instances were, they indicate the need of more constant and more careful surveillance of the milk receiving stations, as well as of the stores and other places where milk is sold or served, than is now possible with the small number of milk inspectors the health department has at its command. It was also ascertained by this investigator that, so far as the comparatively small number of stores visited was concerned, nearly one half of them were selling milk without health department permits. This study was supplemented by an investigation of fifty-seven stores on the East Side by the New York Consumers' League, in which an effort was made to look more thoroughly into the sanitary conditions of the milk dispensing establishments.

The investigation showed that in none of the fifty-seven stores visited was grade A milk sold. The sale of high grade milk was hardly to be expected in the district covered; 89.6 per cent. of the stores sold grade B and 10.4 per cent. sold grade C. It also showed that 70.6 per cent. of the milk sold was raw, and only 29.4 per cent. pasteurized. In view of the fact that only a relatively small percentage of the milk offered for sale in the poorer districts of the city is pasteurized, and in view of the concomitant dangers of consumption of raw milk which is below grade A, the recent action of the department of health, prohibiting the sale of any raw milk except grade A (to take effect February 1, 1914) is most wise and commendable. In commenting on this action, the official weekly *Bulletin of the Department of Health* (November 8, 1913) says: "Commissioner Lederle has repeatedly expressed the opinion that under the present conditions of production and consumption of the milk supply of New York city, the only means of insuring safety from the transmission of infection while keeping down the price of milk, was to adopt the requirement of pasteurization on a large scale."

All the milk at the stores visited was sold in the original cans as delivered, i. e., there was no transference of it from can to can in the store on delivery. It was also found that in eighty-seven per cent. of cases the deliveries were made directly by the dairy companies, and in thirteen per cent. by some intermediate agencies.

The study further showed that in ninety-eight per cent. of cases, the cans containing the milk were covered and that in the same percentage of cases the dipper was found in the can—where it should be. It was also ascertained that in every case the cans were washed before being returned. In connection with this subject it was also found that in 38.3 per cent. of cases the cans were washed with cold water and in 61.5 per cent. of cases with hot water. In no case were they sterilized, as there is no requirement to that effect. This requirement is believed by the department of health to be impractical and unnecessary. The creameries, however, are required to sterilize cans and bottles with live steam. In connection with this subject it may be of interest to note that in at least one epidemic—that in Montclair (N. J.) in 1902, described by Whipple[2]—it was believed that the infection was conveyed by means of imperfectly cleaned and unsterilized bottles.

The general conditions of cleanliness in the stores were also looked into and it was found that, classifying them roughly into three grades of good, fair, and bad, forty-two per cent. would come under the first classification, fifteen per cent. under the second, and twenty per cent. under the third. For thirty-three per cent. of the stores no indication as to classification was made.

SUMMARY.

1. Typhoid fever is acquired by drinking and eating food contaminated by the excreta of typhoid patients. Water, milk, vegetables, oysters and shellfish, are the chief articles of food by means of which typhoid fever germs are carried into the stomach.

2. The comparison of the typhoid death rates of 2.5 per 100,000 population in Hamburg, 3.6 in Berlin, 4.0 in London, 4.1 in Vienna, and 6.7 in Paris with the typhoid death rates of 11.6 in New York, 11.6 in Boston, 13.7 in Chicago, 17.4 in Philadelphia, and 23.2 in Washington, D. C., strikingly indicates how much more there remains to be done along the lines of prevention of this disease in this country.

3. A large percentage of typhoid outbreaks is milk-borne and preventable. The recent serious outbreak in Manhattan (autumn, 1913) had its origin in contaminated milk. This fact again emphasizes the need for efficient pasteurization of all raw and certified milk.

4. The department of health of the City of New York is not equipped financially to control efficiently the production and distribution of the milk sold in this city.

5. The department of health has used its present small force of typhoid inspectors to good advantage.

6. A large proportion of cases of typhoid in this city seems to have originated through careless con-

[2] Whipple, George C. [illegible]

tact with typhoid patients. This is probably the result of:

A. The incomplete reporting of typhoid cases by physicians and hospitals and the consequent insufficient exercise of control by the department of health.

B. The apparent lack of appreciation on the part of physicians and the public of the contagiousness of the disease; and

C. The inadequacy of the educational methods of the department of health concerning sanitary precautions, food preparation and disposal of excreta, and the lack of follow up visits by health department inspectors to ascertain whether instructions given have been carried out.

RECOMMENDATIONS.

The Central Council of Public Health of the City of New York recommends:

1. That the department of health take more rigorous action in enforcing the law concerning the reporting of typhoid fever cases.

2. That the attention of the boards of managers of hospitals be called to the fact that hospitals frequently fail to report cases of typhoid fever and that an appeal be made to them for prompt and complete reporting of all such cases.

3. That the department of health require the hospitals to enter cases of typhoid fever in the special books provided by the department of health for the registration of cases of tuberculosis and venereal diseases.

4. That the department of health be urged to enforce rigorously its rules and regulations with respect to sterilization of milk cans and milk bottles.

5. That the health department's force of inspectors, both for typhoid and milk inspection, be increased and that the medical and sanitary corps of the department be made more flexible; and that in the case of milk supervision special attention be paid to the inspection of the milk at the receiving stations.

6. That the department of health be requested to institute supplementary visits in typhoid cases and to require from its inspectors reports on the continued observance of sanitary rules in the homes of the patients.

7. That the department of health exert its influence in the matter of early sending to hospitals those cases of typhoid fever in which the department's inspectors report inadequate sanitary care.

8. That the department of health consider the revision of its circulars of instruction with the view of making them still more helpful to the public.

9. That the county medical societies of this city be asked to stimulate interest among their members as to the importance and necessity of prompt reporting of typhoid fever cases and of adequate isolation and disinfection.

10. That greater use be made by physicians of the facilities of the Henry Street Settlement[3] in securing adequate disinfection and proper isolation in cases of typhoid; and

11. That the attention of the public be called to the resolution adopted by the New York Academy of Medicine urging that all persons in an infected family and any person who has been exposed in any way to the disease follow up the sanitary precautions usually taken in such cases, subjecting themselves to immunization at the hands either of their private physician or of the department of health.

[3]Visiting nurses may be secured for patients in Manhattan and Bronx by addressing the Henry Street Settlement, 265 Henry street. Telephone number: Orchard 8,200.

Abstracts and Reviews.

THE TREATMENT OF PYORRHŒA ALVEOLARIS.

By D. M. Bertrand, M. D.,
Paris,
Pasteur Institute,
And A. C. Valadier, M. D.,
Paris.

Notwithstanding many efforts, on the part of both physicians and dentists, to conquer the ravages of pyorrhœa alveolaris, which is so frequent and often causes difficulties throughout other parts of the digestive tract, we may say that the treatment has been *in statu quo ante*. Though many have laid claim to wonderful results by purely dental treatment, nevertheless it must be realized that an absolute cure has never, as yet, been attained.

On the other hand, vaccine therapy treatments tried by different men both in England and America, have never been successful, for the disease treated up to the present time by such means has been rapid in its recurrence. Unfortunately the patient never seeks advice until the disease has existed for some time, the teeth are already loosened in their alveolar sockets, and pus flows easily upon pressure above the gingival margin. Upon examination we find that purulent pockets become established more or less deeply in the diseased tissue, in the sphacelated part where the nutrition is bad and where, in consequence, the elaboration of the antibodies destined to wage war against the infecting microbes is very feeble, even nil. It is against this condition that the vaccine therapy of this affection is directed, for the antibodies which have had their birth in another part of the organism will find the greatest difficulty in attacking the virulent mocroorganisms which they are destined to combat.

In consequence of this, it was of capital importance to contrive, not only to immunize the organism and to destroy the tissue which indefinitely nourished the infection, but finally to provoke the proliferation of a new and healthy tissue, capable of maintaining the teeth within their alveoli.

With these principles in mind, we have undertaken to apply this treatment in a number of rebellious cases of pyorrhœa of several years' standing and in which different treatment applied by men of considerable reputation had failed. We first decided upon a bacteriological examination of pus. Our first step was to thoroughly clean the teeth and take away the tartar, immediately after which the mouth was thoroughly washed with boiled water, then by means of a very fine pipette, we obtained a small quantity of pus, which was

placed upon agaragar without peptone, upon blood agaragar, and upon solidified serum. In order to isolate the anaerobic species, we then inoculated deep sugar agaragar. We then spread a small quantity of pus upon two slides which were colored, one by the Gram-Nicolle method, the other by Giemsa.

In every case with which we came in contact there always existed a microbic association, but in every case the streptococci were found, and we discovered by the quantities of colonies which grew upon these different media, that they surely were the species which predominated. In two cases we found them in an absolutely pure state and in one case we found them associated with a spirochete which we were unable to cultivate.

In several cases we found these bacteria associated with *Staphylococcus aureus* (in one case), *Staphylococcus albus* in another, and *Staphylococcus citreus* in several others. In two we found the association of the streptococcus and of *Bacillus pneumoniæ* of Friedlander, which appeared in numerous colonies. Once we found it associated with *Micrococcus catarrhalis*, and twice with a pneumococcus.

We then prepared a sensitized virus against the streptococcus, staphylococcus, pneucococcus and bacillus of Friedlander. For *Micrococcus catarrhalis* we made a vaccine following the principle of Wright, for we had not prepared animals at this time to obtain a serum containing the antibodies. As soon as the virus was ready, we began to make vaccine injections either in the thigh or in the lumbar region. In order to obtain immunity against the infecting bacteria, after two injections, when the antibodies began to take hold within the circulation, we began a mechanical and dental treatment—Younger's—which was carried on at the same time as the vaccine treatment. After a time varying from four to five injections, it was impossible either by a microscopic examination or by cultures to discern the presence of the bacteria which we had originally obtained. The teeth had become firm in their alveoli, the gums and mucous surfaces had a clean and healthy appearance. We continued, however, with three or four supplementary injections in order to clinch matters. We have kept in touch with quite a number of cases six months after treatment, which show no recurrence and which seemed to be permanently cured. Our results were so encouraging that we have decided to continue our efforts, for up to the present time, other treatments tried have not proved a safeguard against a recurrence of the disease.

Diagnosis of Arteriosclerosis.—L. F. Bishop, in *Archives of Diagnosis* for October, 1913, is willing to diagnosticate arteriosclerosis whenever a person is found suffering, in the absence of any detectable local disease, from general deterioration of health, increasing cardiac discomfort on exertion, slight albuminuria, irregularities of blood pressure, and the persistent presence of indican in the urine. The diagnosis is confirmed by a history of abuse of protein foods, an attack of one of the predisposing diseases, or great nervous strain.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXLI.—How do you treat frostbite? (*Closed.*)

CXLII.—How do you treat chronic constipation? (*Answers due not later than January 15, 1914.*)

CXLIII.—How do you treat gallstone colic? (*Answers due not later than February 16, 1914.*)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (*but not* REQUIRED) *that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The Prize of $25 for the best essay submitted in answer to Question CXL was awarded to Dr. Gustavus Eliot, of New Haven, Conn., whose article appeared on page 25.

PRIZE QUESTION NO. CXL.
SENILITY.

(*Continued from page 27.*)

Dr. Cecilie F. Lande, of New York, writes:

A patient, if seen early enough, may be made to recover mental and physical powers, corresponding to his age, only under one condition, to wit, he must be surrounded by a family, for whose sake he is anxious to prolong his life, or the love and devotion of the latter must be strong enough to impress him with the fact that life is worth living, even for a short span. The physician, having convinced himself of favorable condition, should use his power of suggestion, and impress the patient at every possible occasion with courage and confidence in his recuperative powers.

Rest in bed is paramount, in order to save what little strength may be left. The bed should, if possible, stand in a spacious room, having southern exposure, but not exposed to direct drafts; a hot water bag stowed away in it to come handy when the temperature falls toward morning, or a warm drink served, so as to maintain a pleasantly warm sensation in the patient.

If the bowels need attention, no cathartics, even the weakest ones, should be used, as they may exhaust the last flickering peristaltic power, but weak salines, well diluted, should be administered in the morning, followed in due time by a nonirritating and cleansing enema. Special care must be exercised not to tax the patient's strength more than absolutely necessary.

Examination of the urine will indicate treatment, but in my experience a judiciously planned diet of a maximum amount of carbohydrates and a minimum amount of proteids, a generous amount of neutral or light mineral waters, have often diminished or eradicated the most obnoxious features of the urine.

Bathing in the shape of full tub baths of a temperature pleasant to the patient, with gentle friction

of the skin during and after the bath, and, if possible, the encouragement of an unembarrassing perspiration as a factor for elimination, is an important item in the treatment.

Body temperature and the maintenance of its equilibrium during day and night must be a matter of attention, as any deviation from the normal will seriously interfere with the circulation and naturally with metabolism. The physician may find this a most trying task. The usually cherished cool sleeping rooms do not appeal to the aged. The temperature of the living as well as the sleeping rooms should at no time register below 70°F., since the senile system can not accommodate itself to any severe and sudden changes in the temperature.

As to the agents to provide the necessary calories through the patient's food, I have already mentioned carbohydrates for one; the second are fats, and the last but not least is alcohol. Milk and eggs should be excluded unless the digestive powers are fully restored. It is best to exclude meats entirely from the dietary, as the usually deficient teeth and mastication will prove more of a hindrance than a help to the upbuilding of the system, not to mention the toxins developing from imperfectly digested proteids. As to fats, their melting point must not excede the internal temperature of the stomach; thus, clarified butter and olive oil as fresh as possible, should be used instead of suet, lard, or tallow whose melting point ranges from 160° to 240°F. Alcohol is best supplied in the form of old port wine, sherry, or tokay. Brandy or whisky is best given in hot water and sugar, the latter especially possessing great caloric value.

Breathing exercises should be given to produce deeper respirations. A more varied dietary, including fish, green vegetables, and fruit, also moderate physical exercises, may be allowed when the patient shows improvement.

Dr. Charles T. Leslie, of Pittsfield, Mass., observes:

As much as in any disease, prophylaxis is most important in keeping at bay the symptoms of advanced life. Some of the points to mention by way of prevention are, as regards diet, "be temperate in all things," drink sparingly of alcoholic beverages, eat no more than enough to satisfy hunger and but little of meats. Prevent constipation and autointoxication. To quote Metchnikoff, "if it be true that our precocious and unhappy old age is due to poisoning of the tissues (the greater part of the poison coming from the large intestine inhabited by numberless microbes), it is clear that agents which arrest intestinal putrefaction must at the same time postpone and ameliorate old age." Hence the use of milk and buttermilk or cultures of lactic acid bacilli is theoretically most beneficial to one's regular diet. Keep the body warmly clothed and housed, and surround the patient or individual with congenial company—free him from worry, and the chances are that the further evidences of dissolution will be long in appearing.

As to the symptoms of senility, without organic disease, which are amenable to treatment, to say what is normal for old age and what is abnormal may be a matter of very fine discrimination. The wrinkles in the skin and the loss of the youthful complexion seldom need treatment! The gain in weight often present in elderly life does not often occasion other than mental discomfort. The loss of pigment in the hair is due to an organic change. If the lack of mental vigor is so complete as to render the patient unable to care for himself, then some other mind must do the thinking for him. There may be mild degrees of indigestion, where some whip in the form of a bitter like tincture of nux vomica is permissable and helpful. When the old person tires easily he must attempt less and take more rest of body. The eyes, the ears, and the teeth must be appropriately treated. The patient who has escaped the ravages of alcohol, gout, lead, any specific disease, hard work, and worry, and presents himself at the age of three score years and ten without any evidences of organic disease, is to be congratulated and wished a hearty godspeed.

Dr. C. Herbert Church, of Newark, N. J., remarks:

Granting that you have some vitality and a reasonable amount of money, trained nurses, modern appliances, etc., to work with, first, do all that you can to arouse hopefulness and a desire to live; use all the psychotherapy you can, all the time and in every way, even to hypnotism if necessary. Then stop all waste of strength in the way of excitement, worry, etc., and keep the patient interested in something useful. Make him think he is still of some use in the world. In both quantity and quality of food see that your patient is well but not overnourished with the least possible tax on the digestive powers. Use the food chopper and foods that need little mastication, then get the patient to chew it well to mix it with the saliva. Be especially careful in the use of meats, meat extracts, spices, salt, stimulants, etc., and do not let the patient wash his food down nor spend his time worrying over his stomach or some dietetic fad. Push the fruit juices, as scraped apple, orange juice, well diluted lemon juice, and push water drinking between meals.

Do not feed too often. Give the stomach a reasonable rest after the digestion of each meal. The next thing is to clean out just as thoroughly as possible without weakening too much and keep all excretory organs working well. Do not irritate nor wear him out, but coax him along. Water drinking and fruit juices will give great service. You cannot get urine and perspiration out of a patient if you do not put water in, and half of your cases of constipation can be cured by water, while fruit juices are one of Nature's best liver tonics and general internal soaps.

Electricity in the form of the wave, sinusoidal, and other currents over the organ or its spinal nerves, will stimulate liver, kidneys, and intestines. Heat, light, and vibration, used in the same way, will often work wonders. Massage will help both general and organ circulation. Light, air, and sun baths and the flesh brush, if properly used, will have a general tonic effect and especially help the skin as a respiratory and excretory organ. Abundance of fresh air at all times with your patient kept warm is one of the best medicines.

Ozone treatments properly given are a help in the same direction. Oil rubs as used in marasmus will often help, but do not let the skin get clogged. If, as is said, the bacteria causing senility are found

in the colon, and buttermilk is their great enemy, why not give high enemas of warmed buttermilk and put the remedy in good working condition right where it is needed.

One cause of the trouble is that the screws and bolts of the machine have not been kept tight and so allowed the machine to shake itself to pieces. Every case must be individualized and you must do you best to tighten each washer and smooth up all the parts as best you can, but be careful in your efforts to smooth that you don't clog as well.

In regard to stimulants, strychnine, alcohol, or what not, either local or general, remember there is nearly always a secondary depression, so be very careful in their use. If the patient has become accustomed to them, you will probably have to keep them up to a certain extent, but not in all cases. Sometimes a little stimulant will push an organ into doing more than enough work to overbalance the harm, but the tendency with too many is to give a barrelful of stimulant where a pint would do more good. More judgment is needed in the handling of stimulants than in almost any other phase of the case.

Think, and then use good common sense and you will keep your old patient as lively and happy as possible till human power has reached its limit.

Dr. William Brady, of Elmira, N. Y., writes in characteristic style:

Old age is a relative state: that is to say, a doctor himself never grows senile—in his own estimation; with his patients, however, it is often otherwise; and with his colleagues likewise.

There was the classical case of old Doctor Hammersmith, for instance. Doctor Hammersmith had the saving grace of optimism, but circumstances beyond his control proved too much for him. A congenial group of his friends gathered at his home on the occasion of his fortieth birthday, intending to give him a pleasant little surprise. But when they got there it was the doctor himself who sprang the surprise, for they found him in a joyous, hilarious mood, though it was only half past nine o'clock.

However, everybody sat down at the table without waiting for any urging and sailed right in, after the manner of our fearless profession when there are good things to eat and drink, and by eleven o'clock the evening was, so to speak, humming along right merrily. At the final stroke of eleven on the doctor's fine old $16.50 hall clock, just as Jordan launched into a detailed clinical report of his last empyema, in bounced the doctor's buxom young wife (third in the line, I think) with face aglow and a birthday cake all dressed up with forty gleaming candles.

Of course every one applauded and called for a toast. The doctor rose slowly, looked at the cake, rubbed his eyes in a dazed, uncertain way, and looked once more. The happy smile faded from his gleaming countenance, he turned a ghastly color, clutched at his heart and toppled over into the arms of the guest at his left.

The coroner certified that death was due to senility superinduced by diplopia fugitans; contributing cause, the birthday cake.

In the writer's opinion, senility is wholly a matter of how you feel. There are days when you feel as old as Noah, with Methuselah doddering anxiously on before. And then there are other days when your friends conspire and greet you on all sides with a "Why, how do you do, Henry. Say, but you're looking fine. Isn't this great weather though? Come have a glass of buttermilk, do!"

I used to take pride in estimating my adult patients' ages by palpating their radial arteries. Sometimes I could guess as close as a decade to their chronological vintage just by feeling the degree of sclerosis present. But I found this honesty a very poor policy. At present I guess at least two decades less than the blood pressure indicates, and I do it so seriously and so positively that patients who formerly declared my treatment worthless now make wonderful progress on my nerve tonic.

Bad psychology makes more senility than our treatment does, I firmly believe. Bad psychology has a killing effect. Once let a white old man or a gray old woman absorb the suggestion that old age is a pathological condition accompanied with definite chronic symptoms, and no treatment you can devise will ward off those "cold gradations of decay" that blight the cheer of so many firesides.

Never, never ask a person past middle age how old he is. And never, never, never admit that any symptom, no matter what it may be, is due to senility. Such things are on a par with the folk medicine that deals with the "change of life." If there is no other way, tell the complaining patient he will outgrow it, and assure him you are perfectly serious.

Before we create a new specialty under the title of "geriatrics" we must establish the pathopoiesis of infancy, puberty, and adolescence. Then let us say, if we can, where geriatrics shall begin, and what disease entities, if any, are peculiar to senility.

Optimism of the highest order and an utter ignorance of geriatrics are the essentials of success in the treatment of the aged. Cells and tissues never grow old; minds and habits do. And we can influence minds and modify habits. The true specific for senility is—ignore it, and practise medicine.

Therapeutic Notes.

A Calmative Enema.—Mialhe, in *Paris médical* for July 12, 1913, is credited with the following method of preparing an enema to be employed as general nerve sedative: Make an infusion of valerian root, heating for half an hour:

℞ Valerianæ ..... ʒiiss (10 grammes)
Aquæ bullientis, ... ʒviss (200 grammes)
Fiat infusum.

Deinde adds:

℞ Potassii carbonatis, ... gr. viiss (0.5 gramme)
Asafoetidæ, ... gr. xv (1 gramme)
Vitelli ovi, ... No. i.
Misce.

The asafetida should be ground up with the carbonate, moistened with the yolk of egg, and the infusion then added, little by little.

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CHARLES E. DE M. SAJOUS, M.D., LL.D

CLAUDE L. WHEELER, A.B., M.D.

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AN ANNOUNCEMENT.

It is perhaps natural that the prestige conferred by age, dignity, careful editing by a strong staff whose names the NEW YORK MEDICAL JOURNAL is proud to publish, and contributions from the most distinguished men in the profession, should excite envy and ill speaking, even to the point of gross inaccuracy and misstatement. Obviously, however, we cannot be swerved by disappointed self constituted dictators to the medical profession from our purpose to continue to issue a journal worthy of the medical metropolis of the United States, the acknowledged centre of science and letters in this country. Our contributions, our business policy, our high aims and sincere desire to subserve the best interests of our readers have in turn been made the subject of sneering malevolence in quarters whence we had a right to expect only esteem and cooperation in our efforts to aid and uplift the medical profession. We have other duties than to criticise our competitors, and must therefore dismiss with this note any further consideration of attacks dictated by envy and a petty and unprofessional spirit of jealousy.

THE RECENT TYPHOID FEVER EPIDEMIC IN MANHATTAN.

In another part of this issue we are publishing a report on the recent typhoid fever epidemic in Manhattan prepared by the Central Council of Public Health of the City of New York, an organization brought into existence through the efforts of the Public Health, Hospital, and Budget Committee of the New York Academy of Medicine. This council represents the large majority of the important civic organizations of the city interested in the promotion of public health, and affords a means for a combined expression of opinion.

When the extent of the typhoid outbreak on the lower East Side began to grow disquietingly large, the council decided to assist the department of health in their effort to check it. With the assistance of the Henry Street Settlement nurses, and agents of the other constituent bodies of the council, they made a house to house canvass in the infected areas to ascertain the extent to which cases were being reported, to study the essential facts bearing on etiology, to observe the sanitary precautions taken, to gauge the effectiveness of the health department's control and their methods of work, and to examine the sources of the milk supply and the conditions under which milk is sold in the retail stores and groceries. This careful and painstaking study brought out striking facts which deserve careful consideration.

A very large proportion of cases were of secondary origin. In thirty-three per cent. other cases were found in the same house. A most important factor in the secondary dissemination of the disease was the home nursing by members of the family. A relatively small number of cases, especially on the West Side, were reported to the health department. In this neglect to report typhoid fever cases hospitals shared in an equal measure with the private physicians. Fully seventy per cent. of the cases discovered by the nurses under the direction of the council went to hospitals.

The suspected milk which was ordered pasteurized was found in several instances to be sold raw, though the health department's requirement for pasteurization had not been rescinded. It was also ascertained that in some instances private physicians advised against immunization by the health department inspectors, and finally it was discovered that the work of the division of typhoid fever during the recent epidemic had been very efficient and that they had covered the field expeditiously. They failed, however, in one point, effective hygienic instruction. It was found, for example, that the sanitary precautions were not observed in many instances, also that the instructions were given exclusively in English,

which a large proportion of the families could not read.

On the whole, the report is complimentary to the work of the typhoid division of the health department. It is of interest to note that the present epidemic was milk-borne; and as a large proportion of typhoid outbreaks in recent years were due to milk, the report highly approves the recent decision of the health department requiring all milk below grade A to be pasteurized. This measure will prevent a great deal of typhoid.

MEDICAL ASPECTS OF TRANSPORTATION DISASTERS.

The rapid strides made in mechanical perfection in recent times have given what has proved to be a false sense of security, that the safety of operation can be left to the automatic in mechanisms, and that the human physical element is a negligible quantity. This mechanical ideal totally disregards the fact that human physical development and acuity must keep pace with the mechanical, and that the latter is really an outgrowth of the former. In order to achieve the highest degree of safety from the operation of these mechanical devices, it is necessary to develop the human element to as high a degree as possible.

In navigation this necessity has in some degree been recognized and enforced for a long time, especially as regards the visual acuity and color perception of those engaged in actual navigation. Color perception for red and green is especially important, for these colors are the ones used in signals, and blindness for these colors makes safe navigation not only almost impossible but fraught with a deal of danger. The United States, having entire control over the navigable waters, has delegated to the United States Public Health Service the examination of all navigators to see that they conform to the visual and color requirements before licenses are issued or renewed. Even here, however, aside from such really gross pathological lesions, no other attempt at a selection of human fitness comparable with the mechanical magnitude is made.

With railroads and other transportation vehicles not even this regulation is in force, although all forms of transportation which engage in interstate traffic are under the control of the United States, which has plenary power in such matters. While navigation is an important medium of transportation, that on land is surely as great, if not greater. It is inconsistent to require a pilot to have normal vision and color perception, when his field of navigation is wide, speed slow, and assistants are usually many, while engineers and other transportation operators who run mechanisms of high destructive power are required to have no uniform standard of fitness. All such persons engaged in interstate traffic should be required to undergo periodical examination by medical officers of such a body as the United States Public Health Service. But the physical requirements should be enlarged to embrace, not only visual and color requirements, but all physical and mental conditions, which would guarantee the highest efficiency and safety by the operators.

Special attention should be paid to the devotees to alcohol, and its use should be a bar to license. The heat and the stress of a "run," especially in locomotive engines, act very badly on those addicted to alcohol either steadily or dipsomaniacally. Many examples of poor judgment, ignoring of signals, physical inability, or exhaustion would then be eliminated. Alcoholic sclerosis, its allied mental phenomena, and incipient general paresis, are incompatible with work of this kind.

In short, legislation should be introduced as a measure of logical progress, putting under uniform control all operators of interstate vehicles, allowing the issuance of no licenses or renewals except after medical examination. The examination should take into consideration all physical elements necessary to the operation engaged in,—especially cardiovascular scleroses, mental disease (especially general paresis), and the alcoholic tendency and psychoses. And the time may come, let it be hoped, when many individuals will be barred from these occupations because temperamentally unfitted for them.

AN INQUIRY INTO THE CAUSE OF RHEUMATISM.

Many attempts have been made by writers on medicine and bacteriology to define rheumatism in the concrete—the fever, the acute symptoms, the chorea—to express adequately this or that manifestation, to find a single formula. The value of such attempts has most often been in the unity and method of observations made by the way. Rheumatism, like all other diseases presented to clinical experience, has a complexity of causes, and the definition of it becomes intelligible and useful in proportion to its distinctness. Studies which bring into connection with each other the various manifestations of a disease, periods of remission and exacerbation, forms of infection and bacteria, which the inadequacy of man's penetration constantly tends to oppose to each other, have a great stimulus for the intellect, and are almost always worth understanding. It is so with the researches

of Poynton and Paine (*Researches on Rheumatism,* 1914), made in the region of rheumatism, which seek to establish a continuity between the most characteristic signs of rheumatism—the nodule, the exudation, the fever—and the elementary nature and morbid products of an isolated microorganism, *Diplococcus rheumaticus.*

To regard all diseases as modes of infection has more and more become the tendency of modern medicine; and, as if this tendency extended sometimes too far beyond us, perhaps to mislead, Poynton and Paine are philosophically careful to avoid a facile acquiescence in their own theory. The diplococcus, they say, is not the "only cause of acute rheumatism" (*Lancet,* September 22, 1900). It is the *"only bacterial cause"* (*Lancet,* December, 1905). It is present in the nodules, the blood, the joints, the urine; and fever, arthritis, nervous symptoms, pericarditis and endocarditis, processes which some writers reduce to various forces, are but a few of many resultant combinations (*Transactions of the Pathological Society,* 1904; *Medico-Chirurgical Transactions,* LXXXV). These citations reappear in the work referred to above.

Poynton and Paine begin with that which is without—the diplobacillus, its characters in the cultivations and the lesions experimentally produced in animals. Its life is supposed to be an insulated motion—the passage from the tonsils or some other focus of infection, the destruction and impairing of the tissues of the heart and joints, the modification of the dynamic processes of heat. The action of the diplobacillus is independent of other organisms, like the staphylococcus; it is causal, and fulfills Koch's postulates. The theory of causation, as conceived and expounded in this work, is much to be praised; the diplobacillus as a cause is distinct in kind, but a clear apprehension of the opposite principle, that the cause, or more properly causes, of rheumatism are simply everything without which the effect would not result, is the foundation of all true knowledge of etiology. We are disposed to commend this position.

BE CAUTIOUS IN LAUDING RADIUM.

In our issue for December 20, 1913, we animadverted upon the fact that but for the prominence of the surgeons who spoke enthusiastically of the effects of radium in cancer at a recent medical meeting in Philadelphia, perhaps little but skepticism would have greeted the remarks. Professor Ernst Schweninger, of Munich, is now reported to have raised an energetic protest against such premature optimism. Indeed it would be most unfortunate if, in the case of radium, the history of tuberculin and salvarsan was repeated. We cannot but think it to be the duty of the profession, in spite of any successful use in a few expert hands, to speak in the most guarded terms of the possibilities of radium in malignant disease, especially as the newspaper reports have been so sanguine in their nature.

The result of the general publicity will be to force the hand of many a surgeon, who will, most justifiably, wish to operate, yet will find his life saving lancet held back until the patient has been satisfied that radium is not going to dissipate the growth—when it may be too late to accomplish anything. We may recall two instances of epithelioma of the buccal cavity, well known to the profession on account of the prominence of the victims in the medical journal world, where radium was tried early and persistently, but without affording, at any stage of the disease in its progress toward the fatal outcome in each case, the slightest hope of even a mitigation of the symptoms, or of a retarding effect on its relentless march.

VENEREAL PROPHYLAXIS.

Now that such good results are reported by the army and navy medical officers from the use of the prophylactic packet in the reduction of the venereal incidence among the men, it is time that similar methods were employed elsewhere where venereal diseases are likely to be prevalent. Such a place exists obviously in the merchant marine. With the members of this service no organized attempt has thus far been made in teaching prophylaxis, although as a class they form a larger body of men than the combined numbers in the army and navy. The United States is already put to a large expense in the support of the various marine hospitals and the Government hospital for the insane. In the former the great part of the patients are sufferers from acute or chronic venereal infection or its complications. In the latter, many of the mental conditions are directly traceable to venereal infection. Crews who are entitled to treatment in the marine hospitals should be required to establish among themselves the most approved methods of prophylaxis. This would also increase their own efficiency, for it is a fact that aside from the few accidents occurring aboard vessels the greater part of the incapacited during any one voyage are so because of venereal disease. The cost of supplying a whole crew with prophylactic packets would hardly equal the cost of treating one case, and would probably be less than the loss occurring from the incapacity of one of the crew.

The method of venereal prophylaxis can take no better hold with better results than among the crews of merchant vessels, since, because of their wide field of travel, they would act as missionaries

in this work. There can be little doubt that the venereal infections of a given community are largely augmented by importations from vessels touching such places. The venereal question will nearly have been solved when the sources of infection mentioned shall have been reduced, when venereal infections shall be treated by the health authorities as are other contagious diseases, and when the public shall have been educated to the real danger from these diseases.

The plea that the teaching of these prophylactic measures increases immorality is too theoretical and problematic to deserve much more than passing attention, in the face of the actual harm done by diseases which could have been prevented by these measures. If only those infected through immorality were concerned we might be tempted to let them "take their medicine"—though even such a way of thinking is not worthy of modern civilization—but the greatest sufferers are the innocent victims of these diseases, infected directly, or indirectly, or through heredity. Venereal diseases, when once established, have a tendency toward permanency, whereas immorality is a changeable factor, varying with the society and with codes of morals. Besides, no cases of ophthalmia neonatorum or congenital syphilis have ever been reported as a result simply of a breach of the moral code. The longer one reflects on the proposition that it is immoral to prevent disease, the more preposterous does it appear. It is our obvious duty as medical men to stamp out disease wherever we find it; therapeutically if necessary, prophylactically if possible. From any enlightened viewpoint nothing could be morally more indefensible than to permit any infection to ravage the community, and if this has occurred in the past it is because our hands have been tied by the concealments of the victims, some innocent, some afraid.

MOSQUITOES AND MALARIA IN ARKANSAS.

In a study of malaria in Arkansas, the *Public Health Reports*, XXIX, 1, for January 2, 1914, records that mosquitoes of the species *Anopheles maculipennis* were caught in houses in every place visited, except Augusta. They were found usually in the bedrooms, behind furniture, pictures, clothes, or in the dark corners of the room. It was not unusual to find them also in the outhouses, barns, and storerooms. *Anopheles punctipennis* was also found. *Anopheles crucians* is said to make its appearance late in the fall. *Anopheles maculipennis* must be considered as the species which is responsible for transmitting malarial fevers in the counties visited. In all places visited, breeding places of anopheles were found and the larvæ and pupæ collected. The evidence obtained in these surveys indicated that there were two general classes of breeding places to be considered, namely, those of a constant character and those of a temporary character. Those of a constant character are such places found along poorly drained creeks, cypress brakes, marshy places in woods, ditches, and low places in fields. The temporary places were found around or near houses and served as intermediate places between the constant source and the houses of persons, making for short flights for mosquitoes from place to place. These were such places as poorly drained ditches, gutters, barrels, pools of water overgrown with grass or other vegetation, hoof prints of cattle, and the like. It was not unusual to find anopheles larvæ to be green in color when found breeding in pools of water covered with green scum or algæ. In barrels containing rain water, with dead leaves of trees or cotton seed floating on the surface and sometimes a green growth along the edges of the water, larvæ and pupæ of the anopheles were found. The bearing these conditions have in the prophylactic measures must be considered, as sanitary measures recommended were to the effect that temporary breeding places must not be lost sight of in order to make for the flight of anopheles as far removed from houses as is possible, and thereby to confine them to the constant source where these mosquitoes breed. The destruction of the constant source of breeding places requires a large expenditure of money and involves an engineering problem of some magnitude, thus making it impracticable to advise the undertaking of mosquito elimination for controlling malaria.

RELAPSING TYPHOID FEVER.

The curve of typhoid fever—we do not mean the temperature curve, but the immense range of the bacillus in the body—is well exemplified in some cases of relapse described by D'Aloia in *Riforma medica* for December 20, 1913. He mentions, among other cases, a soldier who twice had typhoid fever in two years. Each attack was followed by a relapse. The peculiarity of some of the other cases which he observed is the seemingly innocuous character of the fever. Thus, in twelve cases reported by Hagenmüller, the existence of an infection was not discovered until an autopsy revealed it. It is a question how these relapses arise. D'Aloia ascribes them to a special susceptibility of the body in individuals, but a new exacerbation of typhoid fever stands for more than an increase in the virulence of the bacillus. In short, the cause is a reinfection produced by the bacillus which had previously remained latent in various organs of the body, particularly in the liver. The reunion of the infection and the typical symptoms of typhoid fever, though easily surmised, has not been a main feature of the disease under common observation. We may remark that these relapses must bear a curious relation to vaccination and prophylaxis.

Obituary.

SILAS WEIR MITCHELL, M. D., LL. D., F. R. S.,

of Philadelphia.

In the death of Dr. S. Weir Mitchell, science and letters have lost one of their most gifted men. Born in Philadelphia, February 15, 1830, he acquired from his father, Dr. John K. Mitchell, for many years professor of chemistry in Jefferson Medical College and a poet of no mean ability, a taste for the fields in which he gained distinction. He received his academic education at the University of Pennsylvania, but left, owing to illness, before completing the course, and entered Jefferson Medical College, receiving the degree of M. D. in 1850. The first fourteen years of his career were devoted solely to medicine. He became a member of the staffs of the Southern Dispensary and of St. Joseph Hospital, but toxicology, particularly that of venoms, received his special attention. Indeed, his researches in this direction are today included among his most valued productions. The outbreak of the Civil War furnished him the opportunity as surgeon in charge of one of the military hospitals, for important studies of gunshot wounds and other military injuries, including their influence on the nervous system. His noted papers on Gunshot Wounds and Other Injuries of Nerves, Malingering Especially in Regard to Simulation of Diseases of of the Nervous System, and Reflex Paralyses, the latter in collaboration with Dr. W. W. Keen and the late Dr. G. R. Morehouse, are still regarded as standard. Then followed papers indicating his predilection for the field of research, much of which suggests present day laboratory methods; among these may be mentioned his studies of woorara, rattlesnake venom, the action of opium on the pigeon, the alkaloids of opium and the subcutaneous use of various anesthetics. Materially aided by appointments as physician to the Presbyterian and the Orthopedic Hospitals, Doctor Mitchell then produced various papers and small books which soon gave him worldwide renown as a neurologist. Of these, Hints to the Overworked or Wear and Tear, which might be read with profit by the average business man of our day; Diseases of the Nervous System, Especially of Women, Nurse and Patient and Camp Cure, and Fat and Blood and How to Make Them, which introduced his rest cure, attracted special attention, the last named work being translated into several languages.



DR. SILAS WEIR MITCHELL.

Since these earlier contributions appeared, his scientific productions have been relatively few, though much of his time up to his death was devoted to practice.

Doctor Mitchell entered the literary field as far back as 1864 during the Sanitary Fair for the wounded of the Civil War, as a writer of juvenile stories; these and contributions to the *Atlantic Monthly* were widely read; but, on being advised by Oliver Wendell Holmes to abandon letters until he had acquired professional success, he returned to them only in 1880 with his poem, A Decanter of Madeira, which won the instant and approving recognition of critics. Then followed the remarkably productive period which has just closed with *Westways,* published in 1913. Novels, the most striking of which was *Hugh Wynne,* and some of which have been dramatized, poems, stories, dialogues, etc., appeared in rapid succession, all attesting to the brilliancy of his mind.

The Adventures of a Quack was one of his novels which contained much of particular interest to physicians. In fact, the medical man in reading his novels will recognize in almost every case the hand of the skilled neurologist in the portraits painted. In *Roland Blake,* for instance, a typical case of hysteria is drawn; the progress of a well defined case of melancholia is shown in *Far in the Forest;*

while senile decay is accurately described in *Hugh Wynne*. One of his early novels purported to be an autobiography of a man who had lost both arms and both legs and who became a convert to spiritualism; his lost legs were materialized and enabled the body to walk around. The air of verisimilitude was so successfully maintained that spiritualists have even cited the incident as proof of materialization. Beside the works named, *The Adventures of Francois, Francis Villon, Characteristics, A Madeira Party, Francis Drake, Dr. North and His Friends*, and *John Sherwood, Ironmaster*, are among the more important of his novels.

His versatility in science and letters has often caused him to be compared to Benjamin Franklin. Throughout his entire life children figured prominently. He was said to have been the first to urge the medical inspection of school children. He also traced the headaches of children to abuse of their eyes. Many of the advanced ideas in the treatment of children now in practice have been attributed to him.

Doctor Mitchell was the recipient of many honors. Chief among these may be mentioned the degree of LL. D., from Harvard, Edinburgh, Princeton, and Toronto; the honorary degree of M. D., from the University of Bologna; the F. R. S., of England; the Fellowship of the American Philosophical Society; and honorary membership in a large number of European academies and scientific societies. He was twice president of the College of Physicians of Philadelphia, and to his efforts is in great part due the fact that it now possesses one of the handsomest buildings of its kind in the world. In recognition of his efforts the management gave his name to one of its lecture halls. It will now serve as a lasting monument to his memory.

Doctor Mitchell married twice. His first wife was Miss Mary Middleton Elwyn, a daughter of Mr. Alfred Langdon Elwyn, and his second wife was Miss Mary Cadwalader, daughter of Dr. Thomas Cadwalader.



HALL OF THE COLLEGE OF PHYSICIANS, THE MAIN AUDITORIUM OF WHICH IS KNOWN AS THE S. WEIR MITCHELL HALL.

Doctor Mitchell was gifted with charming personality. His kindly, gentle manner made friends of all those he met, while his strong, clean intellect served to inspire them. With Dean Penniman we may well quote from his poem, Evening, to express what, to those who best knew him, is the meaning of his departure from life:

I know the night is now at hand,
The mists lie low on hill and bay,
The autumn sheaves are dewless, dry,
But I have had the day.
Yes, I have had, dear Lord, the day;
When at Thy call I have the night,
Brief be the twilight as I pass
From light to dark, from dark to light.

News Items.

Philadelphia County Medical Society.—The Southeast Branch of this society has elected the following officers to serve for the year 1914: Vice-president of the county society, Dr. Nathaniel Blumberg; chairman, Dr. Simon Wendkos; clerk, Dr. Morris Ginsburg.

Theft of Radium.—The fame of radium has spread so widely that the rapacious robber is at work in this new field. St. Luke's Hospital in Chicago has lost a supply and now comes the report that the Hahnemann Hospital in this city has been mulcted in the same way, it is suggested by speculators.

A Brooklyn Hospital Opening.—The Bushwick Hospital is to be opened on February 1st. The building itself is going on rapidly and will be finished without delay. Citizens are organizing to collect funds, $20,000 being needed to win a sound financial position. Contributions continue to be made at a gratifying rate.

Health Train and Sanitation.—It is proposed in Michigan to extend the teaching of hygiene by means of a train, carrying inspectors and health officials with a collection of pictures and exhibits. Lectures are given by the way. The plan, which has already been carried out by the Board of Health of Michigan, is supported on the general ground of public welfare apart from the standpoint of official inspection. The idea seems to be that a community is not only taught, but both the conscience and purses of its heads are opened.

Typhoid Prophylaxis in the Army and Navy.—The further reports of the excellent results of vaccination in the military and naval service show apparently how valuable and efficient this mode of prevention can be made. In the army, in 1913, among 80,000 officers and men, there were but two cases of typhoid. The navy had but seven, of which five took place on far distant tropical stations. Of great importance is the recent compulsory vaccination in the navy; the five cases mentioned happened before the rule was made.

Resolutions Adopted by the Medical Board of Bellevue Hospital.—At a meeting held on January 2, 1914, the board resolved as follows:

The Medical Board of Bellevue Hospital announce with deep regret the death of Dr. Charles Phelps. Doctor Phelps entered Bellevue Hospital as a member of the interne staff in 1859, was one of its oldest graduates, and for thirty-five years since has been visiting or consulting surgeon to this institution. During all this time Doctor Phelps has never spared himself in the service of the hospital, giving abundantly of his time and skill to the suffering. His valuable advice, enriched by vast experience, was frequently sought in the counsels of his colleagues and always freely given.

Therefore be it resolved, That this obituary notice be spread upon the minutes of this board, and that a copy be sent to his family and to the NEW YORK MEDICAL JOURNAL and to the *Medical Record.*

C. J. STRONG, M. D., *secretary, medical board.*

The Virginia Hospital at Richmond.—In Virginia medical circles the event of last week has been the offered gift of the Virginia Hospital to the city of Richmond. It is proposed to deed the hospital absolutely, unless the very reasonable suggestion that the staff should be appointed from the medical faculty of the Medical College of Virginia can be called a condition. The plan appears to find favor with physicians and men of business who believe that it will promote the efficiency of hospital management and public health service. The poor, who will be admitted free, will have the care of competent professors from the faculty of the university. Unfortunately the plan in this respect may be defeated through a political tangle. For the deed of the hospital must be sanctioned by the General Assembly, a member of which nurses the amendment that any patient should be allowed to call in his family physician. Dr. George Ben Johnson has pointed out the inconvenience and drawbacks of this proposal. This week the news comes to hand that the hospital staff will probably be appointed by the faculty of the medical college. Although it is still uncertain whether the assembly will concur, it is said that the board of aldermen have voted eleven to one for the appointments. In fact the proposed method of appointment is warmly defended.

The Herter Lectures.—The Herter lectures of the University and Bellevue Hospital Medical College will be given during the week beginning January 12, 1914, at Carnegie Laboratory, 338 East Twenty-sixth Street, New York. Professor Sven Hedin will lecture on Colloids and Their Relation to Biological Chemistry.

The Clinical Congress of Surgeons of North America.—The next session of the Clinical Congress of Surgeons of North America will be held in London, England, the week of July 27, 1914. The invitation extended by the London Committee through Sir Rickman Godlee, Sir Arbuthnot Lane, and Mr. Herbert Paterson was of such a flattering nature that it was accepted without reservation. In planning vacations for 1914, physicians should make the clinical congress in London the objective point, and make at once a tentative sailing reservation.

London surgeons have been making active preparations for more than a year for entertaining the clinical congress, and their organization plans are nearly complete. The invitation is backed by the hospitals and teaching institutions of London through a representative committee of its surgeons. The date selected is propitious; it comes at the end of the social season when the hotel accommodations are ample; immediately preceding the vacation season of the London surgeons; at a time when the weather in London is delightful and corresponds to the season usually selected by American surgeons for their own vacations. This session is destined to be of unsurpassed importance. There will be four evening sessions devoted to scientific programs for general surgery and three evenings devoted to surgery of the eye, ear, nose, and throat. Coupon tickets to all clinics and demonstrations that are bulletined will be provided and equitably distributed in advance. American surgeons will find it greatly to their advantage to make arrangements through the Transportation Department, Clinical Congress of Surgeons of North America, 31 North State Street, Chicago. Several attractive itineraries will be arranged for those who wish to visit the medical centres on the Continent or to take sight seeing excursions either before or after the congress. Steamship reservations should be made at once, as transatlantic travel is heavy at that season. Return passages engaged for dates between August 1st and 15th will secure the low midsummer rates.

Resolutions Adopted by The Federation of American Societies for Experimental Biology, Philadelphia, December 31, 1913.—1. We the members of The Federation of American Societies for Experimental Biology—comprising The American Physiological Society, The American Society of Biological Chemists, The American Society for Pharmacology and Experimental Therapeutics, and The American Society for Experimental Pathology—in convention assembled, hereby express our accord with the declaration of the recent International Medical Congress and other authoritative medical organizations, in favor of the scientific method designated properly animal experimentation, but sometimes vivisection.

2. We point to the remarkable and innumerable achievements by means of animal experimentation in the past in advancing the knowledge of biological laws and devising methods of procedure for the cure of disease and for the prevention of suffering in human beings and lower animals. We emphasize the necessity of animal experimentation in continuing similar beneficent work in the future.

3. We are firmly opposed to cruelty to animals. We heartily support all humane efforts to prevent the wanton infliction of pain. The vast majority of experiments on animals need not be and, in fact, are not accompanied by any pain whatsoever. Under the regulations already in force, which reduce discomfort to the least possible amount and which require the decision of doubtful cases by the responsible laboratory director, the performance of those rare experiments which involve pain is, we believe, justifiable.

4. We regret the widespread lack of information regarding the aims, the achievements, and the procedures of animal experimentation. We deplore the persistent misrepresentation of these aims, achievements, and procedures by those who are opposed to this scientific method. We protest against the frequent denunciation of self sacrificing, high minded men of science who are devoting their lives to the welfare of mankind in efforts to solve the complicated problems of living beings and their diseases.

FREDERICK S. LEE, M. D., *chairman.*

Pith of Progressive Literature.

MEDIZINISCHE KLINIK

October 5, 1913.

School Scoliosis.—Georg Müller says that if the cyphotic position of the spinal column, therapeutically applied by Abbott, is the most favorable for the rotation of the vertebræ, then it is also true that the cyphotic position is the most favorable condition for scoliosis of the vertebral column. Daily experiences teach that children with weak and relaxed musculature of the back and trunk with drooping and round shoulders have a marked inclination to scoliosis. Since the schools abet the cyphotic position of the children, it is to be considered as a causal factor in a large number of the scolioses. According to Müller, the danger of school scoliosis can be counterbalanced by having the children, who show the cyphotic school posture, wear a brace. The latter also improves the general condition of these usually pale, poorly nourished children by improving the breathing movements and the supply of oxygen.

Does Syphilitic Infection Influence the Length of Life and Working Capacity?—Reckzeh asserts that all statistics prove that a past syphilitic infection curtails the length of life. The mortality of syphilitics is due chiefly to the metaluetic brain and spinal cord diseases and secondary disease of the heart and bloodvessels. Of the greatest importance for the prognosis of the disease is *quoad vitam* the duration and the results of the treatment, also age and sex of the patient. Bad social conditions, bodily and mental fatigue, alcoholism and any excesses shorten the lease of life. The constitution of the patient obviously influences the course of the disease, while the same can be said of the accumulative diseases, for example gout, diabetes, tuberculosis From the point of view of the insurance physician, the following may be said: When four or more years have elapsed since the infection and treatment has been thorough and no signs of syphilis are present and no other damaging influences, there is no objection to life insurance with certain definite stipulations.

October 12, 1913.

Reinfection with Diphtheria.—From F. Reiche's statistics the conclusion may be drawn that recovery from diphtheritic infection does not confer lasting active immunity to this disease. A systematic relation between the first infection and the later infections (time of occurrence, severity of attack) cannot be drawn from these figures. It seems that in the reinfections the number of complications and indeterminate factors are as numerous as in the primary infection, whose course depends on the virulence of the invading organism and varies extensively. Only one rule can be deduced, i. e., with increasing age the chances for a second infection increase.

October 19, 1913.

Venous Thrombosis in Disease of the Heart.—F. Glaser describes a case of cardiac disease in a young girl in whom a thrombosis of the superior vena cava began with the symptoms of a double sided parotiditis, as in a similar case reported by Cheadle-Lees-Poynton, and it is possible to explain the circumstance that a thrombotic occlusion of the superior vena and its branches, particularly in young females suffering with heart disease, is frequently associated with chlorosis as in this case.

Experiences in Modern Urology, Particularly with Intravesicular Operations.—O. Kneise lays down the following points: 1. More attention is to be paid to the cystoscope than has hitherto been given, and it ought to be the concern of every hospital to have on its staff at least one good cystoscopist. 2. In the therapy of vesical tumors the incision operations should be discarded as far as possible and intravesicular methods adopted. 3. More attention should be given to functional kidney diagnosis. 4. Vesical tuberculosis should be kept in mind.

Kaolin Glycerin Paste in Dermatology.—P. G. Unna holds that the therapeutic action of this paste is due chiefly to the glycerin. By increasing the insensible water vapor the paste causes an increased flow of water to the superficial tissues and the serous soaking causes their softening.

October 26, 1913.

Pseudoneuralgias.—M. Serog describes the pains of pseudoneuralgias as more diffuse, with tendency to many changes, appearing consecutively in different parts of the body. If the seat of the neuralgic pain remains persistently in the same place, it can be distinguished from the real neuralgia by its nature. It is not so violent, somewhat more constant, or there may be peculiar sensations Double sidedness speaks in favor of pseudoneuralgia, when a symptomatic, diabetic neuralgia can be excluded. Movement intensifies the pain of real neuralgia, often diminishes the pain in pseudoneuralgia. In the latter we also find pain limited to the area supplied by a certain nerve. Pressure points may be found; they are not constant, however; they vary, or they are the expression of a general hyperesthesia. Psychic influence on the pain cannot be used for a differential diagnosis. The proof of functional nerve disease which may accompany pseudoneuralgias is more important, e. g., hysteria and neurasthenia. Pseudoneuralgia may also be confounded with neuritis. Care must be taken to detect pareses, atrophies, absence or weakening of tendon reflexes, disturbances in sensibility. The periodicity of pseudoneuralgias should also be noted. They may appear in some of the manic depressive conditions, and overshadow various phases of the latter. The treatment of this kind of neuralgia consists in rest in bed, and the administration of opium (tincture, pills, or pantopon). In the other forms psychic therapy is indicated.

ZENTRALBLATT FUR GYNAKOLOGIE.

[illegible]

Unusual Cause of Spontaneous Rupture of the Uterus during Delivery.—Solowij reports a case in which there was an extensive tear in the anterior wall of the uterus during delivery. The abdomen was opened and the operator found that the lower portion of the posterior wall was densely adherent to the sigmoid and its mesocolon. The adhesions could not be separated without injuring

the bowel. The tear in the anterior wall was due to the unusually dense adhesions posteriorly, the latter causing an abnormal stretching, with rupture, of the unattached area. The patient died shortly after the operation.

Retrogression of Bladder Conditions in a Case of Cervical Carcinoma Treated by the X Ray.—Segivart reports a case in which there was present a diffuse carcinoma of the cervix with a marked infiltration of the left parametrium. Cystoscopic examination showed an extensive bullous edema of the floor of the bladder. **Treatment** with the x ray and mesothorium was instituted. At the end of three weeks the bladder condition was much improved, the inflammation less, and the edema much decreased. Treatment was discontinued for three weeks, at the end of which time the uterus had become movable and smaller, the parametrial infiltration could scarcely be felt, the enlarged carcinomatous portio was normal in shape, and a large myoma had almost disappeared. In the bladder no trace could be seen of the bullous edema. The disappearance of the bladder condition was due to a retrogression of the carcinomatous process.

Early Symptom of Extrauterine Gestation.—Solowij calls attention to what he considers a valuable symptom of extrauterine gestation in certain cases. If at the first examination there is nothing present in Douglas's pouch, while later there is an increase in resistance, the diagnosis of an extrauterine gestation may be made. He reports such a case, in which he made the diagnosis, although the Abderhalden reaction proved negative. At the operation there was found a small clot in Douglas's pouch, and just above on the right side was a tubal gestation sac. Close to the abdominal end of the tube was a small opening through which blood had oozed.

Problem of the Cross Fire Action of the Röntgen Ray in Gynecological Therapy.—H. Meyer discusses the advantages and disadvantages of x ray therapy. He believes that those rays which pass through a three, or better yet, a four mm. aluminum filter are better adapted for deep therapy in gynecology than the weakly filtered or unfiltered rays. By means of a diagram he shows how the most intense deep action may be obtained with a minimum effect on the surface tissues. Such a method would be particularly advantageous in the treatment of carcinoma, and there is no doubt that the danger of recurrence would be greatly diminished.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE.

November, 1913

Hemangioma of the Spinal Cord.—Roman reports a case of a man who was admitted to the hospital suffering from paralysis of the legs, bladder, and large intestine. At the autopsy there was found, in the neighborhood of the ninth dorsal nerve, an extensive hemangioma simplex. This had destroyed some of the cord tissue and pressed aside other areas.

Nature of the Mononuclear Round Cells Present in the Inflammatory Exudate of Serous Cavities.—Pappenheim, as a result of intraperitoneal experiments upon guineapigs, concludes that the lymphoid, mononuclear elements of peritoneal exudates do not come from the blood, the lymph, or the tissue juices. He believes that they are formed locally in the subserous tissues of the omentum.

PRESSE MÉDICALE.

December 6, 1913.

Minute Pathology of the Gallbladder in Cholelithiasis.—P. Lecène, after describing the lesions of the gallbladder most commonly met with at operation, states that he has observed, in some patients with long standing gallbladder symptoms, finally severe enough to necessitate surgical intervention, noninflammatory changes in this organ, e. g., a slight degree of subserous fibrosis and slight round cell infiltration of the muscular coat. In one case he refers to, the mucous membrane of the gallbladder was thrown into numerous deep invaginations or diverticula, including one so large as to extend almost to the serous coat and containing a reddish black substance representing a calculus in process of formation. Such changes as these are not of infectious causation, but due to distention of the gallbladder. That they exist is an argument in favor of cholecystectomy in operative work on this organ. The possibility of intramural calculi is to be remembered. Cholecystostomy should be done only when removal of the gallbladder is contraindicated.

Technic of Prostatectomy under Local Anesthesia.—M. Chevassu recommends that local anesthesia with a 0.5 per cent. novocaine solution, together with temporary ethyl chloride general anesthesia, be employed in prostatectomy for hypertrophied prostate. He has used it in over fifty cases. After cleansing of the skin with iodine tincture, the first step in the operation consists in plunging the needle of the syringe into the skin 4.5 cm. above the upper border of the pubes, and expelling six to eight c. c. of the analgesic fluid into the subcutaneous tissues while the needle is being pushed toward the pubes, which it finally reaches. The incision is 3.5 to four cm. long and begins one cm. below the point of introduction of the needle. The subcutaneous fatty tissues should also have been anesthetized, by an injection somewhat deeper than the first. After the incision has been made, the rectus abdominis muscle, its anterior sheath, and finally, after the latter and the muscle have been cut into, its posterior sheath are rendered analgesic, a curved hypodermic needle being used. Retractors are applied laterally after incision of the posterior sheath, the bladder slightly distended with warm sterile air through a catheter, the prevesical tissues anesthetized and scraped upward, including the peritoneum, with a third retractor, the more superficial layers of the bladder anesthetized, two guy threads passed through them, each one cm. from the midline, the thickness of the bladder wall determined by gradually plunging in the needle until the intravesical pressure causes the piston to rise, the bladder wall anesthetized through its entire thickness with about two c. c. of the novocaine solution, the bladder opened with the scalpel sufficiently to admit of the passage of a finger, fresh guy threads passed through the whole thickness of the lips of the bladder wound, and the interior of the bladder explored with the finger, calculi, if present, being removed.

The total amount of nocovaine solution used averages thirty c. c., but may be increased to fifty or sixty c. c. if necessary. Immediately before the enucleation of the prostate is begun, three c. c. of ethyl chloride are given by inhalation. Two fingers of the left hand are placed in the rectum as a support for the prostate and the index and middle fingers of the right hand gently inserted in the bladder. The plane of cleavage of the hypertrophic tissue is sought with the index finger, which is inserted into the prostatic urethra, and has merely to rupture the urethral mucosa at this level in order to enter unfailingly in the proper stratum. The growth may be removed either in a single mass, when small, or in two portions when larger. Section of the urethra is carefully performed with the finger nail. A broad Fryer tube is used for five days for suprapubic drainage. A rubber tube forty-five cm. long, with two apertures near its middle, is also used, passing in through the urethra and out through the suprapubic wound. Such a tube facilitates irrigation and the removal of clots through the Frever tube.

Multiple Cardiac Valvular Lesions.—M. Letulle points out that in one half of all cases of mitral stenosis, with or without insufficiency of the same orifice, the tricuspid valve is the seat of a stenosis of like origin and duration. When a case presents a presystolic thrill within the apex, an apical systolic murmur transmitted to the axilla, and besides, a basal diastolic murmur transmitted downward along the sternum, there is therefore, one chance in two that a diagnosis of fourfold valvular disease—mitral stenosis and insufficiency, tricuspid stenosis, and aortic insufficiency—will be correct. Moreover, since tricuspid stenosis is very often accompanied by tricuspid insufficiency, a fivefold valvular disturbance is not infrequently indicated by the three signs referred to. In a case cited by the author, and of which illustrations are given, a sixth lesion, aortic stenosis, was found at autopsy. In short, the possibility of a fourfold, fivefold, or even sixfold valvular disorder should be thought of in all cases where mitral disease and aortic insufficiency coexist.

ROUSSKY VRATCH.

September 21, 1913.

Absorption from the Intestines.—N. A. Dobrovolskaya has studied the question of absorption since 1910 and presents reports of extensive experiments, which, while not showing the actual point at which absorption takes place, indicate that during digestion there is an increase of amidonitrogen in the blood, the result of absorption of amidoacids from the intestines.

Differential Diagnosis of Hysteria.—N. A. Urman observed that in cases of hysteria the patient experiences an extremely unpleasant subjective sensation when the patellar reflex is elicited. The effort to suppress this feeling causes hyperemia of the face, slight tremor of the body and a resentment to the point of tears.

September 28, [illegible].

Reestablishment of Motion in Ankylosed Joints.—R. R. Vreden interposes some unabsorbable tissue between the ends of the bones of an artificial joint, to prevent union. The materials used by him are pieces of muscle, fascia and pig's bladder. The latter is prepared by placing it for three days in benzin and three days in ether, then boiling thirty minutes in ninety per cent. alcohol. The bladder is then preserved in equal parts of sterile glycerin and ninety per cent. alcohol with five per cent. carbolic acid.

Repeated Injection of Curative Serums in Man.—W. N. Klimenko analyses all the reported cases of fatal anaphylaxis following the administration of serum and finds that with one exception (Dreyfuss's case) death could be attributed to causes other than anaphylaxis. In some cases it was either the disease or some intercurrent infection which may have been accountable for the fatal issue, while in others it was the method of administration, either intravenous or intraspinal. The introduction of serum into the spinal canal may by itself cause a fatal meningitis. Admitting the possibility of anaphylaxis in man, it is not of grave import. The author presents records of 282 cases of repeated administration of serum, and only in thirty-three, or 11.9 per cent., were symptoms of anaphylaxis observed. These comprised general erythema in all, fever in seven, nausea and vomiting in two, and edema without albuminuria in two. In none were the manifestations serious. The author believes that by employing only the subcutaneous or intramuscular method of administration the danger from anaphylaxis is reduced to a negligible quantity.

October 5, 1[illegible].

Mode of Infection in Relapsing Fever.—W. K. Stephansky verified the observations of Nicolle, Blaizot, and Conseil by the following experiments: A number of lice—pediculus capitis—were kept in a moist chamber and fed twice daily on the shoulder of one of the employees of the station. On April 21 thirty lice were placed for half an hour on the arm of a patient suffering from relapsing fever, in the beginning of the second relapse. The blood showed a large number of spirochetes. Half an hour after the feeding a few of the crushed lice showed spirochetes. Two hours later the organisms could not be demonstrated. Four days later an infected louse was crushed and examined for spirochetes, but the latter could not be found. Similar results were obtained with lice examined on the eighth, tenth, eleventh, twelfth, thirteenth, and fourteenth days after infection. On the fifteenth day many spirochetes were discovered in one louse. The crushed louse was rubbed up with physiological salt solution and injected subcutaneously in the left arm of a monkey. Some of the preparation was also rubbed in on the denuded surface of the right arm. The monkey remained well for seven days. On the eighth day it developed a typical attack of relapsing fever with an intermission of eleven days between the two attacks. On the sixteenth day after the lice were infected two lice were crushed and one showed spirochetes. On the seventeenth day another louse was examined with positive results. From that time on spirochetes could no longer be demonstrated. Experiments were also performed with thirty-five young lice hatched by the infected insects, but no spirochetes could be found, nor could infection in a monkey be induced by the contents of these lice. These experiments

demonstrated that the louse is the carrier of relapsing fever, that the spirochetes undergo a certain cycle of development within the body of the louse, and that the infection is not transmitted by the bite of the insect, but is derived from the crushed louse, the contents of which come in contact with an abrasion on the skin. The harmlessness of the bite of an infected louse was shown by the fact that the man whose duty it was to feed the lice with his own blood was repeatedly bitten by the infected lice and yet remained well.

Treatment of Leucemia with Benzol.—A. S. Lebedeff reports a case of leucemia successfully treated with benzol. The patient, a woman thirty-eight years old, presented in addition to the usual signs of leucemia a blood content of 3,420,000 erythrocytes, 143,000 leucocytes and thirty-two per cent. hemoglobin. The administration of arsenic, ferratin, and the application of x rays were of no benefit. She was then treated with benzol, in doses of 0.5 to 1.0 gm. two to five times daily, with the result that the leucocytes diminished to 46,800. No effect was observed on the size of the liver and spleen. The general improvement of the patient led her to leave the hospital, making further observation impossible.—I. Ph. Dialektoff reports a case of leucemia in a man fifty-two years old, who failed to respond to treatment with x ray as well as radium. The administration of benzol brought about a reduction in the number of the leucocytes from 205,000 to 45,250 and a decrease in the size of the spleen and lymphatic glands.—A. M. Skoradumoff reports a case of myelogenous leucemia in a woman thirty years old, in whom the administration of benzol brought about a reduction of the leucocytes from 280,000 to 12,500 as well as a decrease in the size of the spleen.

Diagnostic Significance of Precipitin Reaction in Intestinal Infections, Particularly in Meat Poisoning.—M. P. Izabolinsky and B. L. Patzevitch report experimental data which show that an attempt to produce specific precipitins by injection of various intestinal bacteria failed, owing to group reactions. The precipitin reaction for the paratyphoid and the Gärtner bacillus was not strictly specific.

BRITISH MEDICAL JOURNAL.

December 13, 1913.

Significance of Phleboliths.—J. Hall Edwards has been concerned in the taking of over 20,000 radiographs in the last eighteen years and has never seen a phlebolith occurring outside of the pelvic area, though he has frequently found shadows of calcareous arterial plaques. Phleboliths are also seldom encountered in persons below forty years of age, while over that age they are not uncommon. The significance of the presence of these concretions varies inversely with the age of the patient, and their presence in young persons (less than forty years of age) is a sign of early degenerative changes of an importance nearly as great as the presence of atheroma. Evidence is abundant for the belief that phleboliths do not occur in perfectly healthy persons, at least not until they reach an advanced age. It is not proved that they are the result of a natural senility. The presence of these concretions is almost direct evidence of an existing or preceding disease. One further feature of interest attaches to the presence of phleboliths, namely, the fact that they are very often found in patients who complain of symptoms suggestive of calculus in the urinary system. In such cases shadows of phleboliths may be found on both sides of the pelvis, in which case they are always the more numerous on the side corresponding to the pain.

December 20, 1913.

Typhoid Paratyphoid Vaccination with Mixed Vaccines.—Aldo Castellani prepares a mixed vaccine as follows: Typhoid, paratyphoid A. and paratyphoid B bacilli are grown separately and are separately emulsified in saline solution. The strengths of the emulsions are determined by bacillary count and the mixed vaccine is made up so that each c.c. contains 500 million typhoid and 250 million of each of the two paratyphoid bacilli. The bacilli are either killed by heat at 53°C. or are attenuated by heat at 50°C. for one hour. Such a vaccine is used for prophylactic inoculation of man, the first dose being 0.6 c.c. of vaccine, twice this dose a week later, and the second dose is repeated, where possible, after another week. For children, women, and feeble persons smaller doses are used. Castellani has previously demonstrated that in animals the simultaneous inoculation of two different bacteria led to the production of agglutinins and immune bodies to each organism in essentially the same abundance as in either inoculated singly. The same fact could be shown to hold true for the inoculation of three bacteria into animals. Reasoning from these observations, he thought that in regions in which paratyphoid fever was prevalent, it would be advantageous to immunize against the two common strains of this organism as well as against the typhoid organism proper. Observations on a series of normal persons to whom the mixed vaccine described was given have confirmed this belief in so far as laboratory determinations of agglutinins in the blood serve to indicate the degree of immunity. It was also noticed in these experiments on man that the agglutinins were present for all three of the organisms. This mixed vaccine has now been used in several thousand cases and no ill effects other than the usual local reactions similar to those encountered after simple antityphoid inoculation have been seen. One medical man has been inoculated thirty-five times with the mixed live, but attenuated, vaccine at intervals of one or two weeks, and has experienced no ill effects whatever. From his personal experiences Castellani is lead to believe that the immunity resulting from prophylactic inoculation does not last very long, probably not over two years.

Typhoid Cholecystitis.—Albert E. Morison reports four cases of this condition and calls attention to the fact that the symptoms do not always refer to the gallbladder, but that a careful examination will usually lead to the correct diagnosis, for which a positive Widal is a necessity. The chief symptoms are malaise and sickness, slight evening rise of temperature, and occasional attacks of pain with some indefinite rigidity of the abdominal muscles. These attacks may recur every three or four days, and they may be associated with higher

temperature and vomiting. One of the patients in whom this condition was proved to be referable to typhoid cholecystitis, had never had typhoid fever, and no history of exposure to typhoid could be established. A positive Widal test confirmed the diagnosis. Morison deplores the frequent resort to surgery for the cure of these cases, and states that the efficient use of large doses of sodium salicylate is promptly curative.

So Called Rat Bite Disease.—Mitchell I. Dick and W. J. Rutherfurd take exception to the name applied to the symptom complex which so frequently results from the bite of a rat, first, because the term is not specific, any illness transmitted by the bite of a rat coming under the term, though in practice it is usually applied to a fairly definite clinical entity. Secondly, if the case here reported is rightly interpreted, the same symptoms may result in the absence of any known bite from this animal. In the case under consideration the symptoms were classical in every respect and the patient lived in a rat infested house, but he was unable to recall ever having been bitten. So typical were his symptoms that when he was shown a description of "rat bite disease," he was able to recognize his own case as being of the same nature except for the occurrence of a bite.

LANCET.

December 20, 1913.

Development of the Pharynx by Muscular Exercises.—Francis Warner says that in children with adenoids the pharynx is generally relatively small—sufficiently so to interfere with respiration, deglutition, and clear speech, even after the removal of the adenoids. This condition is particularly frequent among the small headed children so often found among the feebleminded. Warner believes that it is possible to promote the development of the bony pharyngeal walls by the use of appropriate exercises of the pterygoid muscles; there is an increase in the strength of the jaw muscles, and both deglutition and speech improve. It seems probable to the author that there is also an increased growth of the sphenoid bone, together with an increase in the width of the space between the ptergoid plates which constitute the lateral walls of the pharynx above. The exercises are briefly lateral, vertical, and anteroposterior movements of the lower jaw, made against resistance offered by the hand of an instructor who holds the jaw firmly. Made in this manner, the exercises are not associated with either facial grimaces or grinding of the teeth. After removal of adenoids it is also very important to train the child to breathe through the nose, and to give him ample training in the isolated steps in proper breathing to insure adequate ventilation of the lungs.

Fatal Case of Pellagra.—F. E. Rainsford's case carries this disease into one more civilized region, in which its presence has hitherto not been demonstrated. The patient was an old insane woman, confined to an asylum in Dublin, Ireland. There was nothing unusual in the symptomatology or the course of the disease, but the etiological factor was certainly not associated in any way with maize or maize products.

Use of Vaccines Graduated by Their Capacity.—Lewis C. Bruce has obtained thoroughly satisfactory results in the estimation of the strength of vaccines by the simple method of diluting them to an arbitrary degree of opacity. After the organism is grown it is made into an emulsion with normal saline solution and this is placed in a five eighths inch test tube and diluted until it is possible to read clearly through it type of a definite size. From this emulsion the desired further dilutions may be made. The absolute simplicity of the method is offered as its chief recommendation, particularly when one has to prepare a large number of vaccines for clinical use.

Repair of Flexor Tendons of the Hand.—C. Max Page suggests that, aside from infection, the two factors which lead to unsatisfactory results from operative attempts to repair these tendons are, failure of primary union between the cut ends of the tendon, and incomplete restoration of function due to adhesions or, more particularly to too great an injury to the supporting synovial sheath If the profundis tendon is divided in the finger distal to the proximal interphalangeal joint the central end of the tendon will not retract far, owing to the presence and strength of vinculum. On the other hand, if the tendons are severed proximal to this point, both of them (profundis and sublimis) may retract far into the palm. A division anywhere in the thumb is followed by more or less extensive retraction of the tendon, even high into the wrist. In any case the first step is the effort to recover the central end of the tendon by means of a pair of sinus forceps passed up within the theca. If this fails an incision is made some distance above the site of the injury, extending parallel with the tendon sheath and exposing without entering it. This incision should be made at the level of the neck of the metacarpal bone in the fingers, proximal to the wrist joint in the thumb, along the ulnar border of the flexor carpi radialis. In the finger the sheath is thinnest at the point exposed by the incision and is to be opened here only. The central end of the tendon is caught and drawn down through this opening. Then a bullet end probe, having an eye in the end, is passed up within the theca from the original traumatic opening to the one through which the tendon is protruding. By means of this the tendon can be pulled down through the intact sheath and sutured to its distal end. A similar procedure is followed in the case of the thumb tendon in the wrist. In children, in whom it is often impossible to secure good apposition of the two ends of the tendon by simple suture, one may hold each end in its proper respective position and pass a suture through it and the theca, thus fixing the ends in close approximation. The finger or thumb should be put up in a position of flexion and no tension should be made on the sutured tendon for at least a month, preferably longer, as tendinous union is slow. Under gas anesthesia the tendon should be completely mobilized in its sheath after union is firm, or about eight weeks after the operation. Exercises will restore the function completely. This method has the prime advantage over those usually employed of leaving intact the strong fibrous theca which is of fundamental importance in

the perfect function of the tendons of the fingers and the thumb.

Rat Bite Fever Treated with Neosalvarsan.—N. F. Surveyor's case had lasted for eight years, resisting all the usual forms of treatment. The patient was given a single intramuscular injection of seven tenths gm. neosalvarsan and recovery from that time was both prompt and continuous. Further treatment consisted in the administration of arsenic by mouth. The neosalvarsan was tried on account of the recurrent and periodic nature of this disease, which strongly suggests the possibility of a protozoal parasite as the cause. Tests and examinations of her blood were made with a view to discovering the etiological factor, but all were negative except one similar to the Wassermann. In this the reactions were doubtful, using rat and guinea pig hearts as antigens.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

December, 1913.

Diseases of the Stomach.—Alexander McPhedran emphasizes the fact that as the nervous relationship of the stomach to all parts of the body is wider than that of any other organ, its reflex or referred disturbances are proportionately the most frequent and varied. These referred disturbances are caused, not only by local diseases, but by general conditions, psychical as well as physical. Furthermore, psychical disturbances are present in most cases of organic disease, and more or less influence the symptoms due to organic disease, not rarely overshadowing them. The great majority of gastric disturbances are secondary to general conditions, or local disease elsewhere than in the abdomen, as nervous diseases, organic and functional; abnormal blood states, as from anemia, renal and cardiac inadequacy, and unsanitary conditions of living. After these, and making up much the greater number of the remaining minority, come local diseases within the abdomen, such as those of the appendix, the gallbladder, the duodenum, and less often the pancreas. Disease and inadequacy of the cecum and large bowel, leading to stasis and constipation, should be added. In many cases a differentiation between organic and referred disturbance of the stomach can be made only by a painstaking, repeated examination and a critical study of the patient's history.

Pyloric Spasm.—Charles G. Stockton speaks favorably of medicinal treatment in this condition. Often it needs surgical intervention, but the immediate need of such a procedure may seem less when the precise and imminent cause of the symptoms is apprehended. The remarkable efficiency of gastric sedatives, of a clyster of chloral and bromides, a hypodermic injection of codeine, or hot fomentations, or of the applications of ice, may be explained if we keep in mind the nature of pyloric spasm. There are few remedies known which act especially upon vagotonic fibres of the pneumogastric nerve, and these have other effects, yet some of them may be employed for their selective action. Atropine in full doses may relieve the condition as if by magic. The writer has also obtained very gratifying results from adrenalin; it has not uniformly succeeded, but in most it has given complete relief. Gastric lavage with water at the temperature of 105°F. has likewise proved useful.

BOSTON MEDICAL AND SURGICAL JOURNAL.

December 25, 1913.

Medical and Social Aspects of Mental Disease Due to Alcohol: Conference Held at the Psychopathic Hospital, Boston, before the Legislative Commission on Drunkenness, November 24, 1913.—These notes are in the form of seven papers by Walter Channing, Michael J. Murray, Herman M. Adler, George E. Eversole, A. Warren Stearns, Mary C. Jarrett, and E. E. Southard, the five last being physicians connected with the Psychopathic Hospital.—Adler divides alcoholic mental diseases into simple drunkenness, delirium tremens, pathological intoxication, acute alcoholic hallucinosis, Korsakow's psychosis, alcoholic jealousy psychosis, dipsomania, alcoholic epilepsy, various residual dementias following various forms of alcoholic disease, and forms as yet ill defined or not yet generally recognized, e. g., the peculiar variant of delirium tremens called Stearns's alcoholic amentia. He also gives a differential diagnosis between delirium tremens and acute alcoholic hallucinosis in parallel columns, with a few cases as examples, and quotes Kraepelin to show the best methods of treatment of excited states.—Eversole speaks of consensual amyosis to blue light, that is a reaction of the pupils to blue light that is either sluggish or wanting, a condition that he shows by a table to be quite common in alcoholic subjects.—Stearns describes three cases of alcoholic amentia, a disease that presents some of the characteristics of both delirium tremens and Korsakow's psychosis. It starts with a spree, is marked by tremor, sluggish pupils, speech defect, marked clouding of consciousness, poor memory, recent and remote, with complete amnesia for attack, normal emotional tone, restlessness, incoherent flow of thought, perseveration and paraphasia, lasts from four to six weeks, and ends in complete recovery. Aftercare, moral suasion, and institutional requirements form the subjects of two other papers. Alcoholic mental disease forms at present about one ninth of the Psychopathic Hospital's work. The mortality has been very low, about five per cent. In delirium tremens and alcoholic hallucinosis it is virtually nil. A high mortality, about thirty-five per cent., attended the Korsakow cases. These results are superior to those of general hospitals, and are attributed to the methods of treatment, chief among which is placed hydrotherapy.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

December 27, 1913.

Control of Cancer.—J. C. Bloodgood presents conclusive evidence that the number of cures of cancer can be increased, and states that, consequently, the control of cancer appears to be a matter of education: and the chief object of the American Society for the Control of Cancer is to hurry on this education, so that more lives may be saved today. He adds the following argument in favor of surgical treatment in the precancerous or in the

very early malignant stage, when the lesion is still relatively benign: Cancer in this stage is an "economical disease," at least relatively. The expense of treatment is little, either to the hospital or to the patient, and the period of disability is short.

Municipal Regulation of Milk Supply.—E. O. Jordan concludes that the municipal regulation in the United States at present seems to lack little in the way of legal authorization or of support by enlightened public opinion. Dairy inspection, bacterial control,, and proper grading appear to have been carried farther in this country than elsewhere. Perhaps the points in most immediate need of improvement are, 1, the definition and proper control of the process of pasteurization, and, 2, the adoption and enforcement of suitable milk supply regulations in cities with less than 50,000 population.

Epilepsy in Children Traced to Single Alcoholic Intoxications on the Part of One or Both Parents Otherwise Teetotalers.—Matthew Woods says he knows no better explanation of the advent of at least some of these unsound members into otherwise healthy families than that which tells that they entered while at least one of the sentinels was drunk. This theory, suggested by the chapter on alcohol in Richardson's *Diseases of Modern Life,* Metchnikoff's *Studies of the Blood,* and certain recent investigations by German writers, will enable the physician to trace the origin of many cases of epilepsy of unknown cause back to their probable source. Long ago, Richardson pointed out the changes effected almost instantly on the constituents of the blood, and Metchnikoff, since, has shown in particular its effect in producing temporary paralysis of the white cells—the phagocytes.

Results of Staphylococcus Spray Treatment in Diphtheria Carriers.—W. A. Womer, of New Castle, Pa., states that the spray, which was prepared in the municipal laboratory, was delivered personally to the attending physician or nurse, with explicit directions as to its use. The cases were in two classes of patients: those who had showed clinical symptoms and still harbored the bacilli, and those who had not presented any symptoms, but were healthy carriers. The results, which are given in detail, were not very encouraging, and the author presents the following conclusions: 1. The use of the spray caused no unpleasant symptoms. 2. It did not appreciably lessen the period of quarantine. 3. The preparation and distribution of the spray entails a large amount of work if there are many cases. 4. Apparently, most of the carriers do not spread the disease after sixty days from the day the disease begins. 5. Public health officials could work more effectively if they had some practical method of determining the virulence of diphtheria bacilli found in the throats of carriers.

Apparent Food Poisoning of the Type Known as Botulism or Allantiasis.—P. G. Stiles, who is assistant professor of physiology in Simmons College, Boston, relates this case, which occurred in his own person. Food poisoning of a narcotic type must be rare, compared with the form familiarly associated with the term ptomaine. Strongly contrasted with the relatively common cases of the latter are those in which there is little or no pain and no significant temperature, but a profound complex of disturbances affecting the higher nerve centres. In a few instances a picture like this has been observed when the offending food has been the mussel. Sausage poisoning, botulism, or allantiasis is another intoxication following the eating of protein food decomposed by Bacillus botulinus. A few hundred cases have been recorded, with a mortality approaching forty per cent., but little has been said of the protracted convalescence in patients who recovered. Sausage has been the cause of the great majority, but other articles of diet have been implicated. In his own case the attack was apparently due to minced chicken, which was served on toast at a restaurant, and it could not be discovered that any other cases of poisoning were reported. The latter fact may be accounted for in the following way: It is stated that liver is a favorite medium for the growth of Bacillus botulinus, and it is not unreasonable to suppose that an infection might be focal in a single organ and be served, as in giblets, to but one person.

MEDICAL RECORD

December 27, 1913.

Solving the Mystery of Bright's Disease.—John Aulde says that the modern conception of nephritis when studied from the scientific viewpoint is rather hazy, because it assumes the presence of poisons which are nonexistent. There is ample proof that the vast majority of cases arise from certain chemical deviations in the body fluids—blood and lymph—and tissues, all of which is outlined below, showing the causative and consecutive factors, with ultimate results.

Causative: Toxines, such as suppuration (catarrh), infectious diseases (bacteria), and autoinfection (cytotoxines). Disordered digestion, from sloppy dietary, nitrogenous foods, and magnesium excess. *Consecutive:* Acid excess, diminished alkalinity of the blood and lymph, demineralization (calcium depletion), and impaired metabolism (tissue change). *Ultimate effects:* Magnesium infiltration by simple replacement, chemical transformation, or union with calcium.

The term, acid excess, is employed provisionally to designate a diminished alkalinity of the blood. The *ultimate effects,* in the form of magnesium deposits, will be understood by reference to the foregoing. For example, it must be evident to the most casual observer that a sloppy dietary will seriously impair the digestive capacity; again, nitrogenous foods (meats) are recognized as being responsible for acidosis. While there is no literature relating to the deleterious effects of foodstuffs containing magnesium in excess, such foods seriously affect the digestive apparatus, because they obtund sensation. Next, a diminished alkalinity of the blood leads to demineralization, and the pivot upon which demineralization turns is calcium depletion. The hypothesis of magnesium infiltration simplifies the treatment of kidney diseases in a marked degree, inasmuch as we assume a common pathology. In fact, there is no essential difference between the treatment of "magnesia kidney" and "magnesia heart," aside from medication conducted to counter-

act the effects of bacterial invasion. 1. Restore the digestive capacity by a suitable dietary, together with the employment of appropriate remedies for the purpose of correcting functional defects, sepsis, and excessive bacterial flora. 2. Neutralize acid excess by the administration of suitable alkalies. 3. Promote magnesium dissociation by the use of calcium salts, alone or combined with iodine to act as an alterative upon the organic deposits which hinder or destroy the capacity of the nerves for the uninterrupted transmission of impulses.

Treatment of Pneumonia by Bacterial Vaccines.—H. A. Craig believes the best method of procedure to be to administer a polyvalent stock vaccine of pneumococcus and streptococcus, of each thirty million, at as early a date as possible. Make sputum smears and cultures (blood cultures in early cases, lung puncture in late ones), and prepare an autogenous vaccine. If there is no definite response in thirty-six or forty-eight hours, repeat or, preferably, give an autogenous vaccine. If there is a response, as evidenced by the improvement of the patient, defer reinoculation three days, or until the first symptoms of retrogression in the general condition or the physical signs. Maintain the doses, or increase every two or three days, until complete recovery occurs. Generally, about three doses are necessary. As to results, Craig states that they are certainly an improvement on all other methods of treatment; for we should use all other means which we have found of benefit in conjunction with the vaccine treatment. Vaccine treatment, properly carried out, is capable only of good.

Appendicular Infection, with Abscess Formation; Should the Appendix Be Removed at Primary Operation?—G. S. Foster, after receiving replies to this question put to a number of surgeons, finds that among these there still remains doubt as to which method to employ. He holds that if we can leave opsonic and complement association undisturbed, produce a limited field within which phagocytosis can take place, and retain a localized involvement of the peritoneum, we have reached the height of our aim. It is his opinion that, except when the abscess is just below or within the abdominal wall (provided that few, if any, adhesions have formed and the appendix is easily accessible), such a high standard can always be reached by simply opening the abscess, using the muscle splitting incision, setting free all pus which will come out with very light pressure, and then introduce a cigarette drain, and wait for Nature to adopt her conservative course. Removal of the appendix could be done at a secondary operation, provided it had not already sloughed and come away on the drain.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

November, 1913.

The Surgery of Exophthalmic Goitre.—J. M. Batchelor says it is generally agreed that ligation should be done in the very mild and in the very late or aggravated cases, when other and harsher measures would not be tolerated. Often the operation is performed in steps, allowing intervals of from a few days to a few weeks. Excision of gland substance is applicable, first, to cases of the second and third stage in which cure has not been effected by ligature, or which have been sufficiently improved to permit of the more radical operation; second, in cases where it is apparent that visceral degeneration is not extreme. The amount of gland to be removed cannot be measured by any rule that is applicable to every case. Removal of one lobe and the isthmus usually meets the necessities of a case, and this is regarded as a thyroidectomy, as practised by most surgeons. The dangers of thyroid surgery relating to anesthesia, infection, hemorrhage, and shock have been reduced to a parity with those connected with any other major surgical operation. The one intrinsic danger is acute hyperthyroidism. Crile believes that the final causative factor of this is traumatic stimulation of the brain, imparted by nerve impulses originating in the field of operation, and recommends blockage of nerve impulse by the use of a local anesthetic. To eliminate the emotional element he advises that the patient be kept in ignorance of the day fixed upon for operation, and that at the last moment the anesthetic should be administered without the patient's knowledge. These methods are based upon the scientific principles of anoci association, and should always be employed in the graver types of the disease.

Medical Aspects of Exophthalmic Goitre.—H. P. Jones, after giving a *résumé* of the characteristic manifestations of the affection, states that since September 1, 1912, he has treated medically over ninety cases, of which about forty are still under treatment. Most of these he expects to progress gradually to recovery, as the others have done, and anticipates that operative assistance will be required in less than ten per cent. of the whole number treated. He employs the following remedies: Quinine neutral hydrobromate (any of the quinine salts has the power of neutralizing the thyroid secretion, and this is preferred simply because it is best tolerated); the salicylates, aspirin, and drugs of this class (also neutralizing thyroid secretion); bromides or cannibis indica, to control excessive nervousness and the physiological action of quinine; and trional, veronal, etc., in some instances, for insomnia. Purgatives are useful in removing indican, and he recommends a combination of podophyllin, cascara sagrada, and oil of black pepper; also sodium sulphate, given with potassium bitartrate. Proteins are added to or taken from the diet as may be indicated both by the urine and the patient's weight. The Bulgarian lactic acid bacteria are always of great value.

The Transmission of Pellagra from Man to Monkey.—W. H. Harris reports two experiments on monkeys, and in closing his recital of these says it would seem that pellagra may be transmitted to the monkey (*Macacus rhesus*) by means of a Berkefeld filtrate derived from the tissues of the human patient; at least, the animals develop all the essential clinical signs and symptoms, together with the pathological picture present in the disease in man. They further suggest that the etiological factor of pellagra may be a member of the large group of Berkefeld filter passers, such as fowl plague, vaccinia, foot and mouth disease, molluscum contagiosum, poliomyelitis, etc.

Proceedings of Societies.

SOUTHERN MEDICAL ASSOCIATION.

The Seventh Annual Meeting, Held at Lexington, Kentucky, November 17, 18, and 19, 1913.

The President, Dr. FRANK A. JONES, of Memphis, in the Chair.

(Continued from page 46.)

Medical Resurrection and Reconstruction in the South.—The Southern Medical Association in its influence for good should have the hearty co-operation of every southern physician. It should be for the physicians, by the physicians, and of the physicians. Every southern medical college worthy of living, though its lot might be hard for a few years, should be handled with justice.

Importance of Pediatrics as a Special Study.—Dr. L. E. LA FETRA, of New York, said that there was an enormous mortality before the normal time of birth, due to miscarriages, prematernity and stillbirths. An investigation made in Philadelphia showed that in 1911 there were 39,975 babies born, and of these 2,131, or about five per cent., were stillborn. There were also 559 premature births and in which the baby died, and there were during the same year 10,666 miscarriages. This meant that one out of every five of these pregnancies resulted in a miscarriage or stillbirth. Just think of the blasting of hopes, the discouragement of womanly effort these figures implied! Something must be done to prevent this enormous loss of life before its portals were fully entered.

Secondly, they had a very large mortality during the first few days and weeks of life. The health officer of Washington had stated that in 1911, out of 957 deaths in the first years of life 151 occurred on the first day, 130 between the first and seventh days, and 114 between the seventh and thirty-first days; that is, 395, or about forty per cent., of the deaths of the first year occurred during the first month and about one sixth on the first day. These figures were not exceptional, for in 1910, out of 1,070 deaths 150 occurred on the first day, and in 1909, out of 1,042 deaths, 140 occurred on the first day. They could set down one sixth of the mortality of the first year as occurring on the first day, and almost one third of the first year mortality as occurring during the first week. This first week's mortality was not due to the milk or the manner of feeding, but to earlier acting causes, such as hereditary weakness or disease, malformations, difficult or mismanaged childbirth, and septic infection.

Thirdly, they had a large mortality during the remainder of the first year. This was due to difficulties with nutrition and to infection, particularly to gastrointestinal and respiratory diseases. Along with this mortality there went a morbidity whose prevention was possible to a large degree.

Malaria.—Dr. R. H. VON ESDORF, of Mobile, stated how he had been directed in 1912 by the United States Public Health Service to make an investigation of the geographical distribution and prevalence of malaria in the State of Alabama. In July, 1913, the same work was extended to include the States of Arkansas, Mississippi, Georgia, South Carolina, North Carolina, and Florida. The campaign was one of education. Lectures had been given in schools and to the people to acquaint them with the exact facts in regard to the conditions prevailing in their own towns, particularly with regard to mosquito breeding places. In addition, he had lectured at universities and had taken high school classes and made surveys and taught these individuals how to identify the larvæ, and they readily learned and made surveys of their own. To save time he had advocated forming organizations, using boy scouts, and getting girls interested so as to make these surveys for local health officers. In connection with the intensive studies he gave an outline for studying the geographical and climatic conditions in each place; also the social, hygienic, and economic conditions that prevailed in the particular places, the industries, and how they were affected and infected, so that the economic question was also being studied in this conservation, and estimations were being made from an economic standpoint in each one of the localities, so that undoubtedly it would prove of value when they got all of this information together to stimulate and arouse greater public interest and greater public demand for doing this work.

Treatment and Cure of Malaria.—Dr. C. C. BASS, of New Orleans, stated that perhaps the most perfect specific in medicine was quinine for malaria, but like a few other specifics it was a specific only when properly administered. The asexual cycle of malarial plasmodia which caused the common symptoms of malaria in man took place partly in the blood stream and partly in the capillaries. The plasmodia lodged in the capillaries and remained until they segmented. The time spent in the capillaries varied with the different species of plasmodia. The estivoautumnal parasite, the most malignant of all, remained lodged in the capillaries for at least thirty-six out of each forty-eight hour period or cycle. During the time the parasites were lodged in the capillaries they were beyond the reach and effect of quinine in the blood stream. Therefore, it was necessary to keep quinine in the blood for a period of at least forty-eight hours, preferable seventy-two hours or three days. Thirty grains of quinine on each of three consecutive days always destroyed all asexual plasmodia in the patient. There were no exceptions. Relapses resulted from reproduction in some manner not now well understood of sexual plasmodia or gametes which were usually present in variable number. They reproduced in seven days and multiples of seven days, and gave rise to the relapses occurring usually on the seventh, fourteenth, twenty-first, and sometimes twenty-eighth days. Gametes were not killed by quinine or any other drug, but their products of reproduction were killed by quinine. Thirty grains of quinine once a week for six weeks would always sterilize the blood of all plasmodia after the asexual parasites had been destroyed by the first three days of quinine treatment. Continuous administration, especially of small doses of quinine, favored or increased the number of gametes and insured relapse or chronicity. The routine treatment for malaria, from which there should seldom be variation, comprised thirty grains of quinine during each of three consecutive days, fol-

lowed by thirty grains on the same day of the week on which the last of the three days fell, for a period of six weeks.

Malaria during the First Three Months of Life.—Dr. B. H. Booth, of Drew, Mississippi, outlined the usual treatment of malaria during this period as follows: Cold baths to reduce the temperature, if practicable; if not, then hot ones. Small doses of heroine and atropine, or morphine and atropine to control the convulsions and equalize the circulation, not losing sight of the fact that young children, as a rule, bear morphine badly, hence it must be given very guardedly. As a good mercurial purgative, he preferred a mixture of calomel and the time honored mercury with chalk, followed by plenty of castor oil, as hot as could be given, also quinine which could be administered by mouth best in some syrup, or used in the form of an inunction, the soluble salts dissolved in alcohol and glycerin, or by hypodermic injections of quinine and urea salt, remembering that an infant at this age would bear well proportionately large doses of both the mercurials and quinine. The hypodermic administration of the quinine was to be preferred to any of the others, as it was more prompt in action, more sure in results, and really easier on the child than either by the mouth or inunction, as it was administered in two doses, was comparatively painless, and allowed the child more rest beside being much less trouble to the attendants.

After the acute symptoms had subsided, iron in such forms as to be easily assimilated, with pepsin, in appropriate doses, would cause a quick recovery from the emaciated condition.

Pellagra.—Dr. Seale Harris, of Mobile, stated that the published death rates for pellagra were too high and gave no idea of its actual prevalence. In beginning the treatment of pellagra, he usually gave several small doses of calomel, one twentieth grain every hour until one quarter grain was given, then bismuth subnitrate in from one half to one dram doses with five grains of salol every two to four hours as might be necessary to control diarrhea. He had rarely found it necessary to use opium. Where there was absence or deficiency of hydrochloric acid, dilute hydrochloric acid with pepsin often relieved the gastric symptoms and would not infrequently control diarrhea. Colonic irrigation with normal salt solution was often helpful, and in some cases, where there was pain in the rectum, suppositories gave great relief. When there was stomatitis with ptyalism the chlorate of potassium given internally yielded splendid results. Mild antiseptic mouth washes, as diluted liquor antisepticus alkalinus, were helpful. Lombroso thought that arsenic and the chloride of sodium were antidotes for the toxines from spoiled corn, and the author had used both in large doses. The salt was usually mixed with the food. Fowler's solution of arsenic was the best preparation and should be given in ascending doses of from one to fifteen, or even twenty drops three times a day, or until the physiological effects were obtained. He had used atoxyl in a number of cases, but had not been pleased with the results. Salvarsan had also been used with varying results by different observers. He was inclined to think that the arsenic must be taken into the alimentary canal to get the beneficial results. He had seen very remarkable improvement in the digestion and general nutrition of patients with pellagra follow the use of Fowler's solution. There was no disease or condition with which he was familiar in which the confidence of the patient was more important than pellagra.

Etiology of Pellagra; Experimental Inoculation of Monkeys and Rabbits.—Dr. W. A. Dearman, of Long Beach, Mississippi, was prompted and led to make investigations along the line of insect transmission by the marked seasonal spring incidence of pellagra, the rise and fall of pellagra and malaria in his section along the Gulf Coast. The first of his activities in this direction was with the bedbug. He was successful in collecting from a bed, which a pellagrin had occupied for six months, a large number of these human parasites, including about fifty large and small; these were kept in a wide mouthed, well ventilated jar. He induced these bedbugs to bite and abstract blood from the large vein underneath the wing of a full grown chicken. It was necessary to extinguish the light before they would begin their activities in sucking blood; after a few minutes they were removed to a test tube and there could be seen several discrete ecchymotic spots on the skin overlying the vein where they had been active in abstracting blood. This process was repeated at intervals every other day for about three weeks; a great number of the bugs, by this time, were dead, owing to their deadly combat. Up to this time, a period of about four months, no lesions had developed in this chicken.

On several occasions, his attention was attracted by the malignancy of certain cases of pellagra, in one as well as other members of the same household suffering from the disease, or in individuals who had frequently visited these homes, in which homes and on whose premises there were found mangy dogs, heavily infested with fleas (*Tænicocephalus serraticeps*), which dogs were in the habit of sleeping on the beds in the day time. One of these patients, a negro woman, gave a history of having been heavily infested with fleas from this dog, and had noticed no signs of her pellagrous condition until she had come into possession of the dog. He bought the dog and immediately placed him in a cage with a full grown Rhesus monkey, keeping them continuously associated for thirty-seven days; the monkey soon became heavily infested with fleas. The dog soon died from emaciation and a black diarrhea. Up to this time, a period of three months, no signs of pellagra had developed in the monkey.

Plague, under the name of black death, which once decimated the populations of the earth, having made its gruesome appearance first on our shores in coast cities and towns, and being principally transmitted by the rat flea, induced him to investigate this insect as a probable transmitter of pellagra. Furthermore, pellagra was principally a European disease, coming to our shores in exactly the same manner, first making its appearance, according to statistical records, on the coast of the Carolinas, and later invading new territory in the interior with alarming rapidity. Samples of cornmeal were obtained from pellagrous homes and from local dealers. Moulds were cultivated, isolated aerobically and anaerobically, suspended in physiological salt solution, and experimentally injected

and fed to rabbits, chickens, pigs, and monkeys. In none ever developed any lesions resembling pellagra.

From what he had gained in the way of experimental inoculations with blood of pellagrins in the incipiency of the disease, and the report of Everett S. Lain's investigations on skin diseases among 5,000 fullblood Indians of Oklahoma (*Journal A. M. A.*, lxi, p. 168, July, 1913), without finding a single case of pellagra, although they subsisted principally on spoiled corn, he doubted very materially that the cause of the disease lurked in spoiled corn. The condition known as pellagra, which was becoming so alarmingly prevalent in the southern States, invading new territory, leaving death, insanity, and invalidism in its wake, terrorizing our American people and yielding to no therapeutic applications, was a disease in all probability insect borne. The dog and cat flea should be looked upon with suspicion, not to the exclusion of other possible transmitters, and further experiment, study, and observation were lacking and yet were needed to discover all the facts relating to its etiology.

Abderhalden Test.—Dr. WILLIAM KRAUSS, of Memphis, said that the causes of failure of the Abderhalden test might be enumerated as follows: 1. The serum. It must be fresh, uncontaminated, secured after a fast of eight hours to eliminate the products of digestion, and pale almost to colorlessness. It must be obtained through a dry sterile needle sheer into a dry, sterile centrifuge tube and immediately centrifugalized, and the serum not pipetted off if the test was made within a few hours. The serum must not be opaque. 2. The placenta. It was now directed that the placenta be chopped up and entirely freed of blood immediately after it had been Creded. This required some hours. The pieces were thrown into boiling water containing a few drops of acetic acid, boiled five minutes, expressed, boiled again in a smaller amount of acidified water, and this tested with ninhydrin, and, if positive, boiled again. He then advised percolation with distilled water, incubation with normal serum, further percolation, reboiling, and percolation. Before each test boiled and percolated again. 3. Faulty dialyzing thimbles. Even the No. 570a thimbles must be rigidly tested. After a test they must be passed through many changes of distilled water. Some tap waters might clog them, also bacterial growth, and rough handling might make them leak. 4. Old or improperly stored ninhydrin solution. It should be fresh, of exact strength and stored in amber bottles. 5. Faulty technic. The outside of the thimbles must be rigidly guarded from contamination by placenta or serum. The immersion must be to the exact prescribed depth and the proper distance between the thimble and wall of the outer cylinder preserved. Doctor Krauss used a system consisting of a test tube open at the bottom upon which the thimble was slipped. Near the top was a vent hole to establish equal air pressure within and without the tube. The test tube fitted a perforated rubber stopper through which it could be lowered to the desired depth. A pledget of cotton saturated with chloroform was put into the mouth of the test tube and a cork over that. Incubation could then be done in a bacterial incubator without chloroforming any cultures that were in the incubator. Doctor Krauss preferred Schwartz's plan of boiling five c. c. of the dialyzate with 0.1 c. c. ninhydrin. He used a marked wide test tube and restored the bulk after boiling for one minute. There had been no failures either way in the two tests made since adopting his latest technic, but he expected to meet them with more experience. Inactivated serum was the best control.

Tuberculosis.—Dr. E. C. THRASH, of Atlanta, attempted to show that tuberculosis was as certainly an alimentary disease primarily, as was typhoid fever. His experience in handling large numbers of children of tuberculous parents had been that practically all of them had tuberculous adenitis, and were positive to the Moro and Von Pirquet test, showing that they had become infected from their parents, but he rarely found one with lung involvement. Most of the children examined post mortem at the Grady hospital, that had died of chronic, wasting diseases due to disturbances of nutrition, had shown tuberculous infections in the lymphatic glands of the abdomen with normal lungs.

Distinction between an Infection by Tubercle Bacilli and Tuberculosis.—Dr. MARY E. LAPHAM, of Highlands, N. C., stated that tuberculosis entered every home. All children were infected before maturity. It was impossible to avoid the infection. Children should be examined by experts in order to detect the first changes before harm had been done. They should not allow children to become victims before they knew it. Tuberculosis in well people was most dangerous because it was never suspected. Good health and tuberculosis were perfectly compatible. All animals had tuberculosis because the bacilli were universally present in their food. Four hundred thousand children in the United States were infected with tubercle bacilli from the milk of cows. It was not enough to protect a child from exposure to contagion. The insidious development of an ever present infection demanded detection by regular examinations. They should not wait until the horse was stolen before they locked the barn door. They should remember the relation of the universal presence of acidfast bacilli to the universal tuberculosis of animals. The relation of the etiology of tuberculosis to an intestinal infection was as common as that by the colon bacilli. The infection by tubercle bacilli was not prevented by quarantine or segregation. The development of this inevitable infection must be arrested by its prompt detection. This could be assured only by regular examinations by competent experts. The prevention of tuberculosis could never be accomplished by obliteration. Detection and no delayed diagnoses were their surest safeguards. A scientist should be employed to teach the people the comprehension of the truths concerning tuberculosis.

The Postsanatorium Tuberculous Patient.—Dr. L. B. MORSE, of Hendersonville, N. C., set forth some general rules for the guidance of exsanatorium patients: 1. Care of a good physician. 2. Close approximation of the sanatorium life, particularly in the beginning. 3. Rest in bed for one week. 4. Increased exercise (walking) with exceeding care both as to time and distance, and not-

ing results. 5. Precaution to "rest before getting tired." 6. Regular hours a conscientious habit, as to rest, exercise, meals, and sleep. 7. Keeping away from every sort of place of amusement and entertainment until thoroughly cured. 8. Reducing visiting to a minimum. 9. Maintaining, if possible, a good body weight. 10. Scrupulous care regarding the morning bowel movement. 11. With increasing strength, increasing pride in the maintenance of a good bodily posture. 12. Tabooing all dissipation. 13. Protection of the patient, if possible, from all worry and strain. 14. Not remaining in the same room with a patient suffering from any sort of acute inflammation of the nose or throat. 15. Finally, remembering always that the things that made one well, in the main, were the things that would keep one well.

Diagnosis and Treatment of Tuberculosis.—Dr. Dunning S. Wilson, of Louisville, said that the essentials were, first, prompt diagnosis; secondly, cooperation of the patients; thirdly, institutional training, and, fourthly, continuation of the treatment at home, bearing in mind that even the earliest cases of tuberculosis were not permanently benefited in less than a year of prescribed routine. Certain improvement and basic parts of the routine must become fixed habits of life if a relapse was to be prevented.

Value of Rest, Physical and Mental, in Tuberculosis.—Dr. Wallace J. Durel, of New Orleans, stated that his purpose was to show that though they could derive some beneficial effects by the use of exercise, absolute rest must replace the latter in active tuberculosis, and modified rest in quiescent and arrested tuberculosis. They knew that exercise entertained the formation (to excess) of tuberlin protein poisons; and that the effects of the latter (in excess) upon the body cells of the human organism were deleterious to the improvement of the tuberculosis patient. The effects of exercise upon the leucoytes, especially the neutrophiles, partly accounted for the harm done by exercise. Rest was essential in active incipient tuberculosis, during the first weeks or months of treatment. Rest was absolutely essential in all cases of febrile tuberculosis.

Definite written orders, specifying rest in the reclining posture, and at definite periods, were essential for good results in all forms of tuberculosis. In quiescent and active tuberculosis, the physician must be positive in his assertions, and must not allow himself to be influenced by sympathy or antagonism, and thus permit his patient to cease carrying out the prescribed rest. The loss of weight, temperature, acceleration of the pulse, disturbance of digestion, and the neutrophile index, were the only means for determining when a patient must return to absolute rest, after the taking up of exercise. The practice of keeping patients in sanatoriums for a specified time of three months, was not of much benefit to the poor tuberculosis patient.

That the recovering tuberculosis patient must be prepared and trained by varieties of exercise, in order that he might resume his previous work, was more theoretical than practical. It was not a question of preparing the tuberculosis patient for his work or occupation, but one of ridding him of his tuberculosis, and of his incapacity for work, and of the danger of infection to his fellow men. The farm and autoinoculative plans of providing for the quiescent tuberculous had not proved of greater value than those measures where rest was the prime factor and exercise the secondary factor. The psychic or mental condition of the tuberculous patient must be carefully studied. Worry and uneasiness must always be alleviated.

Phases of the Tuberculosis Problem.—Dr. W. R. Kirk, of Hendersonville, N. C., maintained that the tuberculosis problem was primarily a medical one, but the social side, which struck the marrow of the question in the maintenance of life itself, could not be ignored. Any controversy as to their relative importance was a waste of time and energy, but that a combination of all the combative forces would be necessary to overcome the greatest menace to human life. He would urge a thorough comprehensive and cooperative union, working upon the unit system, of all the forces in the field, medical, social, economic, and administrative. The tuberculosis problem differed somewhat in each section of the country. The South did not suffer from crowded tenements, sweat shops, and foreign elements of population as in other sections, but they had the negro. He thought tuberculosis was slowly solving the negro question in the South with its frightful mortality to that race, but it was also a constant source of danger to the whites. This phase of the problem was put up to the State board of health and he deplored the lack of interest and cooperation in the medical profession in the work of the public health board, and suggested the appointment of a committee for closer cooperation with tnose boards in an advisory rather than administrative capacity.

Letters to the Editor.

A DECLARATION OF INDEPENDENCE.

Elmira, N. Y., *January 5, 1914.*

To the Editors:

In a communication entitled Why is Nasal Catarrh so Prevalent in the United States? by Dr. Wolff Freudenthal, in the January 3d Journal, the author declares that he will never give his consent to "the demand that every person who sneezes should be isolated and treated like a person dangerous to the community. That is what some overzealous medical men are advocating."

Who are these fanatics? Stand 'em up in a row and shoot them at sunrise! Or better, take four or five specimens of them while they are overheated and suddenly expose them to a low temperature and a strong current of air, as Doctor Freudenthal does in his paper. Each will come down with his favorite malady, according to the author. Then, like Doctor Freudenthal, you may conclude that:

> 3. Exposure to draughts, rain, snow, and all inclemencies of the weather ought to be practised by the youth, in order to prevent the most preventable of all diseases—cold—!

Personally I feel I have a perfect right to sneeze—openly—once in a while, so I won't catch "cold." Any doctor who would isolate me for doing so would have to employ force.

Wm. Brady, M. D.

P. S. Should Doctor Jacobi feel it necessary to flay Doctor Freudenthal for these views, here's hoping he won't confound the author with Osler, as he did when he flayed me!—W. B.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Die Untersuchung der Luftwege. Ein Vortrag zur Einführung in die modernen Rhinolaryngologie für Aerzte und Studierende. Von. Dr. P. H. GERBER, a. o. Professor und Direktor der königlichen Universitäts-Poliklinik für Hals- und Nasenkranke zu Königsberg i. Pr. Mit 49 Textabbildungen und 12 Abbildungen auf 4 Tafeln. Würzburg: Curt Kabitzsch, 1913. Pp. 45.

The author presents this small monograph of forty-five pages on the examination of the air passages for the use of physicians and students. Beginning with a brief history of the development of the specialty, he takes up and considers in a terse manner the examination of the nose, the nasopharynx, the pharynx, the larynx, the trachea, and the bronchi, describing the modern methods of direct examination of the deeper air passages, including the suspension laryngoscopy of Killian. The illustrations including the x ray pictures are well executed, numerous, and instructive. This small work must prove of interest to those beginning the study of the nose and throat.

Anatomy, Descriptive and Applied. By HENRY GRAY, F. R. S., Fellow of the Royal College of Surgeons, Lecturer on Anatomy at St. George's Hospital Medical School, London. A New American Edition from the Eighteenth English Edition. Thoroughly Revised and Reedited. With the Basle Anatomical Nomenclature in English. By ROBERT HOWDEN, M. A., M. B., C. M., Professor of Anatomy in the University of Durham, England. Illustrated with 1120 Engravings. Philadelphia: Lea & Febiger, 1913. Pp. 1407. (Price, $6.)

The new American edition of Gray's anatomy, revised by so able a master as Robert Howden, embodies the terminology based on scientific foundation known as the Basle anatomical nomenclature, which aims to provide a uniform basis for translation into all languages employed by scientific men, and often referred to, therefore, as the international nomenclature. But few changes have been made in the subject matter. The paragraphs on surface anatomy previously appended to separate sections, have been collected and recast into a special chapter. A large number of illustrations—about two hundred—have been added, the majority from original preparations, a decided improvement over the preceding editions. On the whole, "Gray" is worthy of its brilliant reputation as a textbook.

Interclinical Notes.

The small band of American medical writers will feel a pang keener than that of the practitioner at the loss of the dean of their guild, Dr. S. Weir Mitchell. While he added a notable treatment to the armamentarium of the neurologist and family physician, he will obviously be best remembered by his writings for the general public, novels marked by ingenuity of construction as well as a singularly felicitous style, and evidencing assiduous research into historical lore for material. He was the successor of Oliver Wendell Holmes as the acknowledged leader among medical scribes, as well as a personal friend and literary pupil, and is said to have possessed the same happy and genial temperament as the Autocrat, although without the latter's fluency and power of repartee in conversation. We extract a grain of comfort from the contemplation of these two masters, to wit, the likelihood of a calm longevity from the pursuit of our craft.

* * *

There is a doctor in William Slavens McNutt's story in the January, 1914, *Ainslee's,* The Right Thing, but we doubt if we should tell our readers much about him. It is alleged that his name was coupled in shame with that of the wife of another man. The author might have hushed up this disgraceful affair, as the doctor plays but a small part in this exciting and stormy tale.

If a middle aged or elderly critic of modern women's dress is asked at what period he considers female attire to have been all that it should be, he is not unlikely to reply that, in his opinion, the period of the seventies of the last century was characterized by due modesty in styles. Yet we read in the poems of William Ernest Henley, *In Hospital,* XXVIII, Discharged, written in 1874:

> As of old,
> Ambulant, undulant drapery,
> Vaguely and strangely provocative,
> Flutters and beckons. O yonder—
> Is it?—the gleam of a stocking!

We ask our suppositious critic to note particularly the words "as of old," which go to show that, although female dress has differed in detail throughout the ages, the object has apparently always been the same.

* * *

The following letter was written to a prominent specialist of New York by a young son of a distinguished man of letters. It contains suggestions for a new career for youthful and ambitious littérateurs. There is a reasonable presumption that the writer has never read *Molly Make Believe,* a short story of great recent popularity, in which the heroine carried out a somewhat similar project; the coincidence of plans, therefore, is a remarkable one. The unethical offer of fee splitting may be forgiven on account of the writer's youth.

Dear Doctor Blank, the letter runs, before I came to Bermuda I meant to get in to see you about a small money making scheme I have had in mind for some time. Things prevented my seeing you, so now I write. I have had some success as a cheerful letter writer. I would like to be advertised by some doctor, possibly by you, as a nameless person who will correspond with people who are out of key with the world. You could call me Tell-tell, the Fairy, or anything you chose, and could prescribe me for patients to whom pharmaceutical remedies would be of no use. Charge them your regular price a visit and let them pay, say, a dollar for the first letter, fifty cents for the second, and thirty cents for all succeeding ones, deduct from your receipts whatever you think right, and credit me the balance. Aside from a natural desire to make money, my object in proposing to try this scheme is twofold. By the letters patients wrote me revealing their inner lives I would gain much first hand information concerning character, etc., and I would, if successful, be instrumental in lightening the load of things. The climate here is so lovely that I shall not lack ideas. For many people, mere description of the wonders of these blessed isles would be enough to take them out of themselves for a brief recuperative period. I am not a quack if I do propose you a new medicine, and I wish you would give me a trial.

* * *

A startling story of the methods of one quack, an obesity specialist, is being told where physicians gather. It appears that a lady interested in reducing her weight paid a visit to this man, and after the usual preliminaries, laid down the fee of fifty dollars. In return she received from the specialist a small capsule, which, he said, comprised his entire treatment, with instructions to swallow it forthwith in his presence. Her suspicions being aroused, the patient managed by some sleight of hand to convey the capsule into her muff, although she pretended to swallow it. Having safely recrossed the North River, the lady hastened to her family medical adviser in New York with the mysterious capsule. The physician who has not heard the story will be most unlikely to guess what the microscope disclosed to be the contents of this obesity remedy; it was nothing more or less than the scolex or head of a tapeworm, whether *Tænia* or *Dibothriocephalus,* our informant does not state. The villainy of such therapeutics is not in the least beyond the capabilities of the average quack, but a weak point of the story, to our mind, lies in the possibility of the existence of a source of worm heads sufficiently large to afford an income attractive to a quack. Another point is, would the scolex of a worm as it exists in the human host be required, or would the embryo, the cysticercus from beef or pork, be needed to do the work? Has the quack perchance, in deciding to use this worm as a bait for suckers, found a method of cultivating it out-

side of an animal host? These points must be cleared up or we shall have to relegate a promising story to the marines or other audience of historic credulity.

Meetings of Local Medical Societies.

MONDAY, *January 12th.*—Association of Alumni of St. Mary's Hospital, Brooklyn; Corning, N. Y., Medical Association (Annual); New Rochelle, N. Y., Medical Society; New York Ophthalmological Society (Annual); Society of Medical Jurisprudence, New York (Annual); Waterbury, Conn., Medical Association (Annual); Williamsburg Medical Society, Brooklyn, N. Y.

TUESDAY, *January 13th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); Medical Society of the County of Schenectady, N. Y. (Annual), Practitioners' Club of Jersey City, N. J.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine); Newburgh Bay Medical Society; New York Obstetrical Society; Jamestown Medical Society; Rome, N. Y., Medical Society.

WEDNESDAY, *January 14th.*—Alumni Association of City Hospital, New York; Alumni Association of Norwegian Hospital, Brooklyn; New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx, New York; Alumni Association of the City (Charity) Hospital, New York, Brooklyn Medical and Pharmaceutical Association (Annual); Richmond County, N. Y., Medical Society (Annual); Dunkirk and Fredonia Medical Society.

THURSDAY, *January 15th.*—New York Academy of Medicine; German Medical Society, Brooklyn (Annual); Newark, N. J., Medical and Surgical Society; Aesculapian Club of Buffalo, N. Y.

FRIDAY, *January 16th.*—New York Academy of Medicine (Section in Orthopedic Surgery); Clinical Society of the New York Post-graduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society (Annual); Alumni Association of Roosevelt Hospital; Saratoga Springs Medical Society.

Official News.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending January 3, 1914:

Hart, W. L., Captain, Medical Corps. Ordered to Galveston, Texas, about January 1st for temporary duty during absence of Major E. W. Rich. **Ingold,** J. G., Lieutenant, Medical Corps. Detailed to accompany Fifth Cavalry to Fort Leavenworth. **Kinard,** K. W., Lieutenant, Medical Corps. Granted twenty days leave. **McMurde,** H. B., Lieutenant, Medical Corps. Has been ordered to Fort Bliss for treatment. **Philips,** H. F., First Lieutenant, Medical Reserve Corps. Leave of absence for five days is granted. **Sherwood,** J. W., Lieutenant, Medical Corps. Granted leave of absence for one month and fifteen days, effective about December 15, 1913.

Births, Marriages, and Deaths.

Married.

Anthony—Binder.—In Trenton, on Wednesday, December 24th, Dr. Robert Anthony, of Rockford, Ill., and Miss Helen Claudine Binder. **Bauer—Meredith.**—In Jamaica Plain, Mass., on Saturday, December 27th, Dr. Louis Hopewell Bauer, of Washington, D. C., and Miss Helena Meredith. **Blitzenstein—Sheriff.**—In Philadelphia, on Thursday, December 25th, Dr. Samuel Blitzenstein, of New York, and Miss Esther Sheriff. **Brown—Caldwell.**—In Mattapan, Mass., on Wednesday, December 24th, Dr. Edison W. Brown, of Beachmont, and Miss Catherine Caldwell. **Diamond—Tenenbaum.**—In Philadelphia, on Sunday, December 28th, Dr. Louis Diamond and Miss Clare Florence Tenenbaum. **Forcey—Sunday.**—In Philadelphia, on Saturday, January 3d, Dr. Charles Budd Forcey, of Anbridge, Pa., and Miss Florence Isabel Sunday. **Horton—Liipfert.**—In Winston-Salem, on Thursday, December 18th, Dr. M. C. Horton, of Raleigh, N. C., and Miss Theodosia Liipfert. **Kaplan—Englander.**—In Newark, on Sunday, December 21st, Dr. Benjamin Edwin Kaplan and Miss Estelle Englander. **Murphy—Friend.**—In Sheridan, Wyo., on Saturday, December 6th, Dr. L. P. Murphy and Miss Harriet Friend.

Died.

Allen.—In Independence, Mo., on Sunday, December 21st, Dr. R. W. Allen, of Dallas, Texas. **Baker.**—In Salisbury, Mo., on Sunday, December 21st, Dr. James H. P. Baker, aged seventy-six years. **Banga.**—In Chicago, Ill., on Wednesday, December 24th, Dr. Henry Banga, aged sixty-six years. **Capps.**—In Fort Worth, Texas, on Friday, December 19th, Dr. E. D. Capps, aged forty-seven years. **Cheney.**—In Towanda, N. Y., on Saturday, December 20th, Dr. W. M. Cheney. **Curts.**—In Paterson, N. J., on Wednesday, December 31st, Dr. James A. H. Curts, aged thirty-six years. **De Silva.**—In Atlantic City, N. J., on Thursday, January 1st, Dr. J. Francis de Silva, aged thirty-eight years. **Edwards.**—In St. Louis, Mo., on Monday, December 22d, Dr. Thomas Alvin Edwards, aged fifty-eight years. **Hollenberg.**—In New York, on Thursday, January 1st, Dr. Beno A. Hollenberg, aged seventy-four years. **Kelley.**—In Bridgewater, Mass., on Monday, December 29th, Dr. John T. Kelley, aged thirty-eight years. **Kelly.**—In New Orleans, La., on Monday, December 22d, Dr. Hugh Kelly, aged fifty-seven years. **Martinez.**—In San Francisco, Cal., on Thursday, December 11th, Dr. Felipe Martinez. **McCord.**—In St. Paul, Minn., on Sunday, December 21st, Dr. Eugene Woodworth McCord, aged fifty-nine years. **McKittrick.**—In Eau Claire, Wis., on Thursday, December 18th, Dr. Peter McKittrick, aged forty-eight years. **McManus.**—In Martinez, Cal., on Monday, December 15th, Dr. Frank A. McManus. **Mitchell.**—In Philadelphia, on Saturday, January 3d, Dr. S. Weir Mitchell, aged eighty-three years. **Moore.**—In Van Alstyne, Texas, on Wednesday, December 24th, Dr. S. W. Moore, aged eighty-three years. **Musson.**—In Philadelphia, on Sunday, December 28th, Dr. Emma E. Musson, aged fifty years. **Obetz.**—In Detroit, Mich., on Saturday, December 20th, Dr. Henry L. Obetz, aged sixty-two years. **O'Connor.**—In Brattleboro, Vermont, on Friday, December 26th, Dr. Frank H. O'Connor, aged forty-three years. **Parker.**—In Woodbury, N. J., on Monday, December 29th, Dr. Thomas E. Parker, aged fifty-nine years. **Person.**—In Stanton, Neb., on Wednesday, December 31st, Dr. Syl. Person, aged fifty-six years. **Phelps.**—In New York, on Tuesday, December 30th, Dr. Charles Phelps, aged seventy-nine years. **Pole.**—In Lewisburg, W. Va., on Monday, December 29th, Dr. Henry Stier Pole, aged sixty-eight years. **Reed.**—In New York, on Saturday, December 27th, Dr. Howard Beck Reed, of Sea Bright, N. J., aged twenty-nine years. **Schenck.**—In Wynnewood, Pa., on Saturday, December 27th, Dr. Joseph Howard Schenck, aged sixty-six years. Smathers.—In San Francisco, on Monday, December 8th, Dr. C. Z. Smathers. **Smith.**—In Carnegie, Pa., on Monday, December 22d, Dr. Andrew Smith, aged seventy-eight years. **Stearns.**—In Los Angeles, Cal., on Wednesday, December 17th, Dr. W. H. Stearns. **Stedman.**—In Boston, Mass., on Thursday, December 25th, Dr. James P. Stedman, aged fifty-six years. **Steiner.**—In Lima, Ohio, on Saturday, December 27th, Dr. D. W. Steiner. **Thralls.**—In Hymera, Ind., on Friday, December 19th, Dr. R. T. Thralls, aged sixty years. **Townsend.**—In Newport, Me., on Saturday, December 27th, Dr. Frederick P. Townsend, aged seventy-three years. **Vetrees.**—In Jacksonville, Ill., on Monday, December 22d, Dr. C. M. Vetress, aged seventy-six years. **Wright.**—In Churchland, Va., on Monday, December 15th, Dr. Thomas J. Wright, aged sixty-eight years. **Ziegler.**—In Nicetown, Pa., on Wednesday, December 24th, Dr. George W. Ziegler, aged fifty-two years.

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Original Communications.

HYPERTONICITY AND HYPOTONICITY OF THE VAGUS AND THE SYMPATHETIC NERVOUS SYSTEM.

*Neurochemical Synergism of the Normal Body and Its Suggestions for Physiological Therapeutics.**

BY JOHN C. HEMMETER, M. D., PHIL. D., SC. D., LL. D.,

Baltimore, Md.,

Professor of Physiology and Clinical Medicine, University of Maryland.

The autonomic nervous system means that portion of the nervous system which appears to be self-governing, and independent of the control of nervous impulses which arise in the cells of the cerebral cortex. The neurons, which constitute the centres of the autonomic nervous system, originate the various nervous impulses which travel to the peripheral organs, such as the bloodvessels, walls of the intestines, sweat glands, etc. The fibres which convey these impulses constitute the efferent portion of the system. These central nerve cells are, however, to some extent influenced by impulses which reach them from the periphery. The fibres which convey these impulses constitute the afferent portion of the system.

THE EFFERENT FIBRES OF THE NERVOUS SYSTEM.

The largest part of the unstriped muscle (involuntary muscle) of the body is under the control of the autonomic nervous system. As examples of the organs of the body innervated by this system, the following may be mentioned: The heart (cardioinhibitory and cardioaccelerator nerves), the bloodvessels (vasoconstrictor and vasodilator nerves), the stomach and intestines (visceromotor and visceroinhibitory nerves), the secreting glands, especially the gastric glands, pancreas, and liver (secretoexcitor and secretoinhibitory nerves), and the iris (pupillocontractor and pupillodilator).

The nervous impulses which govern these various organs of the body arise in nerve cells situated somewhere in the central nervous system. Autonomic nerve centres are situated in the midbrain, in the pons Varolii, in the medulla oblongata, and in the gray matter of the spinal cord. The efferent impulses leave the central nervous system by finely medullated nerve fibres, some of which travel in the cranial nerves and others in the anterior nerve roots of the spinal nerves. For the most part those nerves which convey the autonomic nerve impulses sooner or later travel to a ganglion, where the medullated nerve fibre or preganglionic fibre arborises around one or more nerve cells in this cell station. New fibres arise in these ganglion cells which are nonmedullated (postganglionic fibres). If these postganglionic fibres pass back to the neighboring spinal nerve they are termed gray rami communicantes. These fibres convey impulses to the bloodvessels (vasoconstrictor), to the sweat glands, and to the hairs of the part (pilomotor) which is supplied through that particular spinal nerve.

The nerve conveying the autonomic impulses may make cell stations in one of three regions: In the proximal lateral ganglia, which form the sympathetic nerve chain; in the more distantly placed ganglia, such as the semilunar ganglia which lie upon the large arteries of the abdomen; or in the terminal ganglia, such as are present in the walls of the viscera, namely, those in Meissner's and Auerbach's plexuses which are present in the walls of the stomach and intestine, and the ganglia present in the walls of the heart. The positions of the cell stations upon the autonomic nervous system have been demonstrated by Langley's nicotine method, which shall be described briefly in the following.

VEGETATIVE NERVOUS SYSTEM.

The so called vegetative system, whose efferent nerves supply the involuntarily active organs, is in contrast to the voluntary nerve system, histogenetically and pharmacologically. The organs which this vegetative system supplies are the glands and the organs with unstriped muscles, viz., the intestines, bloodvessels, the unstriped muscular tissue of the skin, the iris, etc. Physiologically, certain cross striped muscles should be placed on the same footing with the foregoing unstriped organs, such as the heart, cross striped muscles of the esophagus and penis, and of the iris in some animal species, for instance, birds, whose iris, in contradistinction to that of the mammals, is cross striped. The characteristic feature of the innervation of these body tissues is that their functions, although they may be partially influenced by it, are more or less independent of the central nervous system. It has, therefore, been designated by Langley, once for all, as the autonomic nerve system. We adopt, however, the term "vegetative nervous system" and reserve "autonomic" expressly for that part of the vegetative nerves which is not originated from the chain of sympathetic ganglia.

Origin. The efferent fibres of the vegetative system reach their effective organs—the muscles of the circulatory organs, of the digestive tract, of the reproductive organs, of the glands, etc.—by

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means of paths which emanate from peripheral nerve centres. While the fibres have their origin, indeed, in the central nervous system, it is a peculiarity of the vegetative nerves that they never proceed direct to the periphery but come, somewhere on their course, in contact with neurons, respectively, or ganglion cells.

Sympathetic fibres. That set of sympathetic fibres, which run out from the middle section of the spinal cord in the thoracic nerves and the first four or five lumbar nerves by means of the rami communicantes to the sympathetic ganglion chain, superior and inferior cervical ganglion, and also the stellate ganglion, and from them join the spinal nerves as so called gray rami communicantes, are in an anatomical, evolutionary, physiological and pharmacological sense different from the other vegetative fibres. These sympathetic nerves supply the bloodvessels, glands, and unstriped muscular organs of the whole body. They form a homogeneous part of the vegetative nervous system.

Cranial and sacral autonomic fibres. Almost all these organs receive still another species of vegetative nerves, which emanate partly from the brain and medulla, partly from the sacral portion of the spinal cord. We term this second part of the vegetative system the cranial and sacral autonomic nervous system. From the middle brain autonomic fibres run out which pass into the oculomotor nerve, proceed to the ciliary ganglion, and then, as short ciliary nerves, supply the sphincter of the iris and the ciliary muscle. From the medulla oblongata emanate autonomic nerves, which contain, in the chorda tympani, secretory fibres for the salivary glands and vasodilator fibres for the oral cavity. From the facial nerve and the glossopharyngeal, moreover, secretory and vasodilator fibres pass, which enter the trigeminus and supply the mucous membranes of the head (mouth, nose, pharynx). Finally, autonomic fibres pass from the medulla oblongata, which, following the path of the vagus nerve, disperse into the intestines. These are the inhibitory fibres of the heart, contractile fibres for the bronchial muscles, motor fibres for the esophagus, stomach, intestines and secretory fibres for the stomach and pancreas. This system could be designated as the cranial-bulbar, or, in brief, as the cranial-autonomic. The influence of this system is strongest at the oral end of the digestive apparatus and the adjoining parts of the head and then diminishes in scope and intensity. Near the anal end of the digestive system its influence is relieved, as it were, by sacral autonomic fibres, which emanate from the first sacral nerve of the spinal cord and innervate, as pelvic nerve, the anal parts of the digestive system, viz., descending colon, rectum and anus, and likewise the bladder and genital organs.

A third nervous system which controls the hollow organs, e. g., the intestine, is the one which Langley has called the "enteric system." This consists of peripheral centres working independently, which receive impulses from the central nervous system through autonomic and sympathetic connections.

Two allied systems. The sympathetic nerves form a physiological unity, and their terminals exhibit everywhere the same pharmacological reaction (epinephrin). According to the investigations of Langley, the cranial-bulbar and the sacral autonomic system belong together physiologically. The most striking proof of this physiological relationship is their similar behavior under the action of a certain set of poisons, to which we shall revert later. Just as the functions so also the pharmacological reactions of the cranial-sacral autonomic fibres present distinctly opposing characteristics to those of the sympathetic system, even though all vegetative nerves seem to possess about the same structure in general.

General structure of the vegetative system. All vegetative nerves disclose, in accordance with this similar structure, a common pharmacological reaction, the discovery of which was an important step toward the comprehension of their structure. We refer to the action of nicotine, which selects its point of attack always at some definite place in the path of all vegetative nerves. According to the general scheme of arrangement, the vegetative nerves never proceed, like the animal fibres, directly from the central nervous system to the organs they control, but the fibres, emanating from the gray substance of the central nervous system, proceed first to a ganglion. In this ganglion the central fibre ends in a synapse which comes in contact with ganglion cells, from which the nerve fibres continue on their way to the effective organ. Hence one can designate such nerve fibres, which proceed out of the central system and before they have reached the ganglion, as preganglionic fibres, and their continuations from the ganglion cells as postganglionic fibres. At single points during the entire length of the nerve an interruption takes place, a switching from the preganglionic to the postganglionic fibre. This switching over may occur in the first ganglion which the nerve reaches, e. g., in one of the vertebral ganglia, which, corresponding to the spinal ganglia, are arranged segmentally in the sympathetic chain. Other vegetative fibres pass through one and sometimes two ganglia in their course without interruption and terminate in prevertebral ganglia that are situated in more advanced and peripheral locations, e. g., the nerve fibres of the splanchnic in the solar plexus, or the pelvic nerves in the hypogastric plexus; or they terminate in still more advanced and distal ganglia, which are imbedded directly in the organs themselves.

The vertebral ganglia, with the exception of the superior and inferior cervical ganglia, supply the vegetative structures of the skin, trunk and exterminate in prevertebral ganglia that are situated bloodvessels and unstriped muscles (pilomotors) of the skin. The prevertebral ganglia supply exclusively the intestines. The stellate ganglion and the superior cervical ganglion, which can be looked upon as fused from vertebral and prevertebral ganglia, send out both intestinal and skin nerves.

Similar reaction from nicotine. In whatever region the place of the termination of the central fibre and its switching over may be found, and no matter which function the postganglionic fibre may possess, whether as motor, inhibitory or secretory, the place of the switching over is paralyzed by nicotine after a preliminary period of excitation. *This*

is a general law. To be sure, the various ganglia exhibit different degrees of sensitiveness. There is much variation in this matter in the case of different animal species, e. g., nicotine is far less effective on the intermediate ganglion 'tween stations of a dog than in the case of the cat and rabbit.

Langley employed nicotine for the local poisoning of the separate exposed ganglia by means of painting them with a diluted 0.5 per cent. solution, so as to determine the question whether an efferent vegetative nerve fibre passes a certain ganglion without communication or whether at the painted locality a switching over in the line of conduction has taken place. If the excitation of a nerve centrally from the ganglion has the same effect after the application of the poison as before its use, then the nerve fibre passes uninterruptedly through the ganglion; if, on the other hand, there is no effect after the use of the poison, then the fibre terminates in the ganglion and the postganglionic fibre originates there. By means of this method Langley demonstrated the interruption of numerous sympathetic and cranial-sacral nerves in the various corresponding vertebral and prevertebral ganglia. One example may illustrate this. The excitation of the cervical sympathetic below the stellate ganglion causes contraction of the bloodvessels of the upper extremity and simultaneously, also, dilatation of the pupils, widening of the lids, and a change of the width of the bloodvessels and of the secretive functions of the mucous membranes of the head. After the application of nicotine to the stellate ganglion, the excitation of the cervical sympathetic has no effect on the width of the blood vessels of the extremity, but the phenomena on the eye and the mucous membranes of the head remain the same. Hence, the vascular nerves of the extremity stand in communication with nerve cells in the stellate ganglia, while the nerve fibres of the pupils and the mucous membranes of the head pass through this ganglion and find their intermediate stations only when they reach the cervical ganglia. If nicotine is injected into the circulation, then the excitation of all preganglionic fibres is ineffective, while, on the other hand, the excitation of the postganglionic fibres produces all the phenomena of the nerve in question. Hence the nerve fibres and peripheral terminals remain subject to excitation, only the intermediate stations in the ganglia—those we have designated as the points of switching over —being poisoned by nicotine.

RECIPROCAL FUNCTIONS OF THE TWO SYSTEMS.

The action of the nicotine extends, also, to all ganglia of the vegetative system, irrespective of the fact as to whether they are of sympathetic origin or belong to the autonomic system. In other respects these two groups of vegetative nerves exhibit opposing features in their conduct, both physiologically and pharmacologically. It is of great importance that most organs possess a twofold innervation, on the one hand from the sympathetic system and on the other from the related, or corresponding, cranial or sacral systems. Almost everywhere where the organs possess a twofold innervation, the one is antagonistic to the other; to wit, the stimulation of the sympathetic fibre produces an effect just opposite to that of the autonomic fibre. For instance, if the sympathetic splanchnic nerve checks the movements of the intestine, then the autonomic fibres of the vagus excite the upper sections of the intestine, and the sacral fibres of the pelvic nerve the lower sections. If the sympathetic nerve affects the dilator of the iris, then the autonomic branch of the oculomotor exerts an influence on the antagonistic sphincter of the iris. The heart checking action of the vagus fibres is opposed by the accelerator of the sympathetic. In brief, nearly all organs, which are known to possess an innervation from both these systems, are affected by them in an antagonistic manner. A group of organs, viz., the blood vessels and glands of the skin of the trunk and extremities, are of course, so far as we know today, only innervated by the sympathetic system.

Epinephrine, a sympathetic poison. The difference in the physiological conduct of the two vegetative systems is also exhibited in their pharmacological reaction. There is a group of poisons which affects only the sympathetic and one which affects all the various autonomic terminals. Thus, epinephrine (from the adrenal bodies) excites the nerve endings everywhere where they are terminals of sympathetics, that is to say, the action on the organs is always the same as the excitation of the corresponding sympathetic fibres. Epinephrine, on account of its action on the nerve terminals of sympathetic fibres, produces constriction in all vascular territories. It superinduces an enforcement and acceleration in the rapidity and strength of the heart beat, just like the excitation of the accelerator. It causes enlargement of the pupils, like the cervical sympathetic, and increases the secretion of the salivary glands, to the extent that they can be induced to action through the sympathetic nerves. At such places, however, where the sympathetic fibres display an inhibitory influence, e. g., on tissues in the stomach and intestine, or on the bladder, epinephrine will not cause an excitation, but a checking influence. Especially striking are those cases in which the stimulation of the sympathetic fibres in one species of animal causes contraction, but in another species of animal produces inhibition of the same organ, as, for example, in the case of the bladder. Epinephrine always acts just as the stimulation of the sympathetic would act (Elliott, *Journal of Physiology,* XXXII, 1905). We can say, therefore, that the excitation or inhibitive effect of epinephrine selects only those terminations of the vegetative nervous system which belong to the sympathetic system.

Effects of epinephrine on various tissues are analogous to the effects of stimulating the sympathetic nerves that supply those tissues: 1. In all bloodvessels epinephrine causes constriction. 2. As we have seen in previous experiments, it increases the contractile force of the heart. 3. The pupil is dilated (mydriasis). 4. The muscle of the intestine in all mammalia is inhibited, with the single exception of the ileocecal sphincter. 5. The stomach in mammals is relaxed, but in the frog it is brought to contraction, so that both of these effects correspond with those obtained in stimulating the sympathetic nerve going to those tissues, in

the respective species. 6. The effect of stimulation of the sympathetic nerve for the bladder and uterus varies in different animals; but no matter what this effect is, a similar one is produced by the application of epinephrine.

Ergotoxin. In ergot, Dale discovered another poison, ergotoxin, which makes a still closer selection of nerve terminals of the sympathetic system, in that it only paralyzes those terminals of the fibres which exert a stimulating effect, but does not affect those which cause inhibition. After large doses of ergotoxin, the stimulation of the vasoconstrictors causes no narrowing of bloodvessels. The accelerator nerves are not affected, but the inhibitive effects of the splanchnic on the intestine, or of the sympathetic nerves in case they inhibit the bladder, remain intact in their function.

Poisons for the autonomic terminals. Adrenalin has no effect on the sacral autonomic terminals, but there is another group of poisons which attacks just this end apparatus and which, with one exception, exerts no effect on the sympathetic nervous system. The principal members of this group are, on the one hand, atropine, and on the other, muscarine, pilocarpine, physostigmine, and also choline. Among these, muscarine stimulates the terminals of the autonomic fibres and atropine paralyzes these terminals. The poisons of the muscarine group bring about, accordingly, contraction of the pupils; atropine counteracts the influence of the autonomic motor oculi, and hence causes pupil enlargement. Muscarine affects the heart similarly to the stimulation of the vagus; atropine paralyzes the effect of the vagus, and thus permits the quickening influences of the sympathetic fibres to gain supremacy. Muscarine causes spastic contraction of the bronchial muscles; atropine relieves the spasm. Muscarine and pilocarpine cause severe contractions of the muscles of the stomach and intestine and of unstriped muscles of other organs; atropine in certain doses relieves the tension of these muscles. Muscarine and pilocarpine cause secretion in all glands; atropine arrests this. But these poisons attack, also, the glands of the skin, although an innervation of the skin glands by autonomic fibres, i. e., nonsympathetic fibres, is as yet unknown. One is almost tempted to believe that this exception is only an apparent one, and that an explanation will be found on further investigation. Incidentally, let it be said that the points of attack of the poisons here considered are not fully known. This much has been determined, however, that all of them attack the end apparatus of autonomic nerves, and the various end apparatus of this system are thereby marked as belonging together by this common pharmacological behavior.

Reactions of poisons on autonomic centres. Similar pharmacological, i. e., chemical reaction, points to similar chemical structure. It will be necessary, therefore, to accept as a fact the common structure of all sympathetic end apparatus and likewise, in the case of the autonomic end apparatus among themselves. But also in their points of origin, located in the central nervous system, these two great groups seem to differ and to individualize in their peculiar chemical reactions. Picrotoxine, which produces a number of interesting effects not to be considered here, stimulates all cranial and sacral autonomic nerves, motor oculi, chorda, vagus, pelvic nerves, and what is more, not at their end apparatus but exclusively at the central point, or origin. The autonomic centres exhibit, hence, all the same chemical reactions. This same statement cannot be made of the sympathetic central apparatus, for up to the present only a few data exist pointing in that direction.

Variety of poison stimulations of the vegetative system. Nicotine, then, attacks the ganglia of the entire vegetative system, epinephrine only the terminal of the sympathetic fibres, the atropine-muscarine group specially the terminals of autonomic nerves. In addition to the poisons referred to, there are many other substances which act on special sections of the vegetative nervous system. Since all organs which have a twofold innervation will be affected in the same manner by the stimulation of the one system and the paralysis of the other, the same changes of functions can be brought about from different points of attack; thus, enlargement of the pupils will occur through stimulation of the sympathetic nerve terminals in the iris by the use of adrenalin, as by paralysis of the terminal of the motor oculi through atropine. Thus the heart beats rapidly by stimulation of the terminals of the accelerators through large doses of caffeine, as through paralysis of the vagus through atropine. It will appear that uncommonly numerous and complicated effects of poisons are therefore possible on the vegetative nervous system.

AN EXAMINATION OF THE FUNCTIONS OF THE VEGETATIVE NERVOUS SYSTEM.

Since the pharmacodynamic examination of the functions of the vegetative nervous system by Eppinger and Hess has been developed for clinical purposes, a series of important results may yield to further investigation. The various and diverse symptomatology of functional nerve disturbances appeared at last ready to be systematized and the point of view which was to determine the classification was derived from knowledge obtained through physiology and pharmacology. Eppinger and Hess, in particular, attempted to outline a disease, "vagotony," and differentiate it from the manifold mental disorders. The two authors believed themselves justified, on the basis of clinical considerations and the results of their investigations of the functions of the vegetative nervous system, in defining a functional derangement of the autonomic nervous system, or extended vagus territory. On the one hand, all symptoms of such patients apparently could be interpreted as caused by the state of irritability of the autonomic nervous system; on the other hand, Eppinger and Hess noticed that pilocarpine and atropine were very effective in the case of such patients, while epinephrine exerted no action. Likewise, however, just as there are persons who respond relatively not at all to epinephrine, but strongly to atropine and pilocarpine, there are also persons who, on the application of epinephrine, exhibit phenomena of strong stimulation of the sympatheticus, but are not susceptible to pilocarpine and atropine. "Data to the effect that persons to whom we administered doses

of atropine and pilocarpine and also of epinephrine had responded vigorously to the former two and in the same measure to the third, are completely wanting" (Eppinger and Hess). Thus these two able authors were led to assume two antipodal systems of diseases, or dispositions, the vagotonic and the sympathicotonic dispositions, respectively diseases.

The Eppinger-Hess point of view, however, soon had to undergo modifications owing to data which had come to hand in the meantime. The justification of placing vagotony and sympathicotony in opposition to each other seemed doubtful as soon as it became evident that in some cases pilocarpine and atropine, as well as epinephrine, produced strong reaction in the same person. And Eppinger and Hess, in conjunction with Potzl, were themselves the first to obtain data of this character from certain neurasthenics. In the case of manic depressive insanity they observed regularly, along with the change of the various stages of the disease, fluctuations in the tonus of the vegetative nervous system, these fluctuations being the same for both systems. Falta, Newburgh and Nobel noticed in the case of diabetic patients afflicted with multiple sclerosis and a bronchial asthma with tetany, strong response to pilocarpine, as well as to epinephrine, and Falta was able to demonstrate in conjunction with Kahn that this phenomenon was normal in the case of tetany. More recently Petren and Thorling have made investigations with "a rather heterogeneous clinical material" and succeeded in refuting the Eppinger-Hess assumption that epinephrine and pilocarpine cannot produce a reaction on one and the same individual. On the other hand, they admit that cases of pronounced vagotony and sympathicotony, respectively, do exist, and they find with ulcer of the stomach, particularly, relatively very often a strong "vagotonus." Petren and Thorling retain this term, although they expressly assert that in all probability the whole matter is not concerned with an increased tonus of the autonomic or an abnormally diminished tonus of the sympathetic system, respectively, but rather with the fact that frequently one and the same individual is strongly susceptible to pilocarpine as well as epinephrine, which is hardly to be explained otherwise than through the assumption of greater irritability to stimuli of autonomic, as well as of the sympathetic nervous system. In opposition to the assumption of an increase in the tonus, and supporting that of greater irritability to stimuli, these two concepts are to be sharply differentiated. Petren and Thorling offer as additional proof that they, in contradistinction to Eppinger and Hess, could discover no parallel relation in this matter of sensitiveness to pilocarpine and atropine. If a strong pilocarpine action was assignable to an increased tonus in the vagus system, then a strong atropine action could be expected to result from the elimination of this nerve system with this increased tonus. But when we assume an abnormal irritability, instead of increase of tonus, it is easy to see that, notwithstanding the strong reaction to pilocarpine, the nerve system in a state of increased irritability might yet be resistant to the paralyzing action of atropine.[1]

A number of casual observations, which affected the theoretic foundation of the whole question and explained clearly many phenomena hitherto little or not at all heeded, induced Bauer, even before he could possibly have known anything of the investigations of the Swedish scientists, to make an examination of the functions of the vegetative nervous system, using clinical material of the most varied character, not the result of any particular selection, but in greater part exhibiting neuropathic phenomena.

In addition to the pharmacodynamic methods of testing functions, there exists, as is well known, a few mechanical or physical methods which can be applied to our examinations and combined with pharmacodynamic methods. These are the tests for: 1. Dermographism; 2, irregular respiratory pulse; and, 3, the Aschner reflex, or reflex by pressure on the optic bulb influencing the vagus. Further physical methods, such as the Czermak vagus pressure test or the Erben phenomenon, we shall not consider here, because they were not employed consistently in our investigations.

Dermographismus has been regarded for some time as a neuropathic stigma. Polonsky devoted much attention to this symptom recently. He discovered the existence of "vasomotor afterblushing" in the case of all the patients examined by him to the number of 116 from the psychiatric and nerve clinic of the Berlin Charité. Of these, sixty-seven suffered from functional, and forty-nine from organic neurotic affections. Polonsky interprets the vasomotor afterblushing as pathognomonic, as an affection of the central nervous system, and suggests that it is to be regarded as a general indication of the fact that the system has lost its normal condition of equilibrium, or is to be regarded as an indisposition, but not a characteristic feature of special disorders of this central nervous system. Everything likely to affect the organism, such as psychic influences, alcohol, coffee, abuse of nicotine, menstruation, pregnancy, etc., has a tendency, according to Polonsky, to increase this vasomotor afterblushing. Springtime is also supposed to superinduce it.

More important than the investigations of Polonsky is the peculiar reaction of certain individuals on vigorous rubbing of the skin, to which attention was called by Hess and Königstein. This phenomenon, to which Hess and Königstein have applied the term "perverse reaction," consists in that these individuals, in contradistinction to almost all others, do not respond with vasodilatation, but with vasoconstriction, to the mechanical skin stimulation, and simultaneously show a stimulating reaction of their pilomotor nerves. I was in the habit of terming this phenomenon, before the publication of the Hess-Königstein work, as "white" or "goose skin" dermographism. Hess and Königstein interpret as perverse reaction, moreover, that seen when individuals respond with anemia instead of hyperemia to heat, and by redness instead of pallor to cold. Such people have frequently a pale facial color, and become still paler under the action of psychic influences, when others would respond with blushing.

H. E. Hering, more than all others, has pointed out the practicability, for purposes of functional investigations, of the cardiac vagi, the respiratory arrhythmia of the pulse. As is well known, the irregular respiratory pulse consists of an increased

[1] For new physiological conceptions of Tonus, see Starling's *Physiology*, pp. 357-380.

acceleration of the heartbeat and the decrease in size of the pulse waves during inhalation, but during expiration the pulse becomes less frequent and larger. A number of isolated references to this form of pulse arrhythmia were already extant in the literature, when Lommel devoted especial attention to the matter and could demonstrate the nervous origin of the pulse arrhythmia and its dependence on highly increased irritability of the vagus. With animals (the dog) when the vagi have been severed, or atropine has been administered, likewise in the case of fever (vagus paralysis), the previously existing respiratory arrhythmia disappears. Even when the thorax of the animal has been opened wide, and hence no stretching or any other mechanical agency is applied to the breathing apparatus, the respiratory pulse arrhythmia remains. It is, hence, not the result of respiratory mechanical conditions (pressure variations) of the thorax and lesser circulation. On the basis of further considerations, Lommel believed that "an excessive sensitiveness of the cardioinhibitory vagus centre" was the cause of the respiratory pulse arrhythmia; to which must be added that the normal respiratory influences change the existing degree of irritability of the vagoinhibitory centre to a marked degree. According to Hering, respiratory arrhythmia is only, then, pathological when it becomes strongly noticeable even with very light respiration. A strongly accentuated form of it seems to be normal with young individuals. The "infantile type" of heart irregularity, so defined by Mackenzie, is, according to Hering, the irregular respiratory pulse. Lommel and Hering observed the respiratory pulse arrythmia especially in persons who were recovering from febrile diseases, those suffering from neurosis and from cerebral diseases with stimulation of the vagus centre. The irregular respiratory pulse in the case of heart disorders is not causally related to the latter. Hamburger regards the irregular respiratory pulse as a characteristic symptom of nervous children. The existence of an irregular respiratory pulse proves, according to Hering, the presence of a tonus of the heart inhibitory fibres. Also, the very noticeable diminution of the number of heart beats after holding the breath for some time is supposed to demonstrate the functioning of the heart vagi. Hering regards the determination of the irregular respiratory pulse as a more valuable functional test of the heart vagi than the Dehio atropine test—pulse rate increase after atropine—because failure of this atropine test could depend upon a certain degree of immunity to atropine. This fact, emphasized by Hering, is being corroborated by the new investigations of Fleischmann with reference to the different degree of detoxication of atropine by blood serum.

The third mechanical method which can be recommended for examination of the functions of the vegetative nervous system is the *bulbus pressure phenomenon*, described by B. Aschner, who, starting from the observation of von Wagner-Yauregg that persons affected by stupor can be brought back to consciousness in a surprising manner, if only for a short period, through a pressure on the optic bulbs, tried to revive persons that were in deep stupor, the result of narcotics, by the same method. Along with flushing of the face, some retching movements, deep inhalation, and opening of the eyes, Aschner noticed in the case of his patients a cessation of the pulse with consequent bradycardia. Breathing, also, became slower and deeper. Corresponding experiments on animals showed without doubt that this was a result of a reflex, the afferent path of which was formed by the first branch of the trigeminus. Pressure on a branch of the trigeminus in the eye cavity, after removal of the bulbus, also produced the vagus reflex; not only the first branch of the trigeminus, but also the second and third can form the centripetal joint of the reflex curve. Through mechanical or electric stimulation of the third branch, similarly, expiratory cessation of respiration and pulse diminution, respectively, cessation of heart beat can be brought about. With regard to the second branch, Kratschmer had already observed, in 1870, the same phenomena by means of stimulation of the nasal mucous membrane with tobacco smoke. According to Aschner, the inhibitory action of the reflex affects the respiration most prominently in the rabbit, and the heart in the case of a human being (nonsmoker) and dog.

Eppinger and Hess described the development of this Aschner phenomenon in the case of several of their vagotonic patients, and remarked, incidentally, that the phenomenon can frequently be demonstrated only by determination of the pulse curves. Moreover, Eppinger and Hess also produced very pronounced bradycardia in certain cases by stimulation of the nasal mucous membrane with ammonia vapors. Miloslavich followed up the development of the Aschner reflex systematically with a series of heart neuroses, and determined that at times very remarkably intensive bradycardia, sometimes a reduction of from eight to ten beats a minute in the pulse, followed on bulbus pressure. In other cases, however, the pulse remained the same. Miloslavich, in agreement with Eppinger, explains this behavior from the fact that there are some heart neuroses that respond to vagus stimulation and others to sympathicus stimulation. In addition, Miloslavich found this reflex regularly present in epileptic attacks, while it was always absent in hysteria. In the case of deep alcoholic intoxication this reflex is also present. The reflex from the eye to the heart makes, therefore, as Miloslavich states, no especial impression on normal persons in a state of wakefulness, but does so with a vagotonic person, who is under the influence of a narcotic, and in all other forms of unconsciousness, coma, etc.

The functions of the vegetative nervous system have been tested by Eppinger and Hess (*Zeitschrift für klinische Medizin*, 67 und 68; also Die Vagotonie. Sammlung klinischer Abhandlungen, herausgegeben von Noorden, 9 und 10) and by the authorities quoted in the preceding, and especially by Julius Bauer, who was working at the medical clinic of the University of Innsbruck. The results of these various authors do not permit of any dogmatic or categorical conclusions concerning the relation of the autonomic to the sympathetic nervous system. The tests were made by the physical methods which I have described, namely, counting the pulse during the pressure upon the eye bulbs, the so called Aschner reflex, which is an inhibition of

the vagus by pressure on the first branch of the trigeminus nerve. In this connection I may state that the second and third branches of the trigeminus may also serve as afferent paths of conduction to the vagoinhibitory centre. By stimulation of these branches, slowing of the pulse may be brought about in susceptible individuals. Kratschmer, quoted according to Aschner, described slowing of the pulse by stimulation of the nasal mucosa with tobacco, and I have personally observed in human beings who were not addicted to the use of tobacco and who were very susceptible to the smoke, that a slowing of the pulse was noticed when they were compelled to draw in even the diluted smoke of tobacco. Eppinger and Hess (*loco citato*) effected pronounced slowing of the pulse by irritation of the nasal mucosa with fumes of ammonia. This may explain the beneficial action of the various ammonia smelling salts when applied in cases of fainting with rapid heart. I am personally studying a male patient at present in whom pressure upon the eye bulb to a moderate degree will completely arrest the heart for five or six beats. It will then recover, but as long as the pressure upon the eye lasts, will not exceed forty beats a minute, the patient's normal heart rate being sixty-eight. Any influence of the eye bulb pressure upon the heart rate is pathological. It is never observed with perfectly normal individuals. If it, therefore, can be produced in a human being, it is justifiable to conclude that the person is in a vagotonic condition. It should be added that conditions of narcosis, unconsciousness, alcoholism, and coma should be excluded, and such states are not fit conditions for this experiment.

In addition to these physical methods of investigation, patients were studied by injecting chemical substances under the skin in order to study whether the physiological effects could be brought out in an exaggerated or in a diminished manner according to the state of the patient, particularly according to the vagotonic or sympathicotonic state. I have repeated these pharmacological studies on a number of patients, which I shall detail under a special heading, and used the tests employed by Bauer (*loco citato*), Petren und Thorling (*Zeitschrift für klinische Medizin,* lxxiii, 1 und 2, 1911). We injected subcutaneously the following test chemicals in the doses assigned: Pilocarpine, 0.007 gram up to 0.01 gram; epinephrine, 0.0007 gram, on the average 0.0005 gram. I also used atropine sulphate in doses of 0.0005 gram. Eppinger, Hess, and Potzl (*Wiener klinische Wochenschrift,* 1910) used 0.001 gram of pilocarpine to the kilogram weight of human being, and of atropine and epinephrine they used 0.0001 gram to the kilogram; which are, in my opinion, enormous doses and entirely unnecessary for the elicitation of the physiological effects of the drug. When epinephrine was given, the patient was ordered to take 100 grams of dextrose two hours before the injection, in order to test whether the assertions of Eppinger, Hess, and Potzl were correct regarding the excretion of glucose in the urine under these doses of epinephrine. With the doses of epinephrine that were used by me, namely, about 0.005 gram, I have not in a single instance observed glycosuria, and consider the production of this condition as an indication that too much epinephrine has been given. A pronounced epinephrine effect on the organism can be produced long before doses are reached which will cause the appearance of glucose in the urine. It is, in my opinion, therefore, not justifiable to push epinephrine to the glycosuria point. In connection with this subject, I may call attention to the possibility that the epinephrine injections for the purpose of testing the functional power of the kidneys as regards the threshold of excretion for glucose always require such large doses that the patient or animal is, in my opinion, in a distinctly pathological condition of metabolism when this glucose excretion sets in.

I also made experiments on animals and human beings with ergotoxin, and used it on three cases of Basedow's disease in which I had, by exclusion, reached the tentative opinion that the tachycardia was due to excessive stimulation of the accelerator nerves (sympathetic) on the heart. As is well known, ergotoxin makes a very narrow selection of the nerve terminals of the sympathetic system. It paralyzes the terminals of those special fibres that exert an excitatory effect. It has no influence on the inhibitory sympathetic fibres. For instance, after large doses of ergotoxin stimulation of the vasoconstrictors can no longer produce narrowing of bloodvessels; the accelerator nerves of the heart are no longer effective, but the inhibitory effects of the splanchnic on the intestine or of the sympathetic nerves on the bladder, in those animals in which these nerves do inhibit the bladder, continue to exist. In these three cases of Basedow's disease with pronounced tachycardia, ergotoxin actually did produce slowing of the pulse, and in such small doses that no other, especially no unpleasant pharmacological effects were noticed. If any one of these chemical substances was given to the patient, the rate of the pulse and respiration was recorded; the blood pressure was taken by the Tycos sphygmomanometer; the temperature by a one minute thermometer in the axilla; also, a record of the testing by the Aschner reflex, the dermographism, and the respiratory pulse arrythmia. The urine was examined one hour before and three hours after the injection. The condition of the sweating and salivation was noticed in all instances. These substances are all poisons of one sort or another, and should be used with doses rather smaller than larger than I have indicated, because it will be found that there are individuals of extreme sensitiveness to any one of these chemical substances, and the chief aim should be, after the consent of the patient has been obtained, not to produce any physical discomfort. Especially is care necessary with atropine, pilocarpine, and epinephrine.

In looking over the results obtained we note that there are effects of a pharmacodynamic nature discovered in testing the sympathetic, as well as the autonomic nervous system that cannot be classified in the scheme of Eppinger and Hess. Especially must their dogmatic statement be corrected that pilocarpine stimulates and atropine paralyzes all of those autonomic nerve fibres whose function is promotion of an action. There were known exceptions to these statements even before the work of Ep-

pinger and Hess was published. These are especially the effect of pilocarpine and atropine on the sweat glands, which are innervated by sympathetic fibres, and the effect on the inhibitory vagus fibres on the heart by pilocarpine and atropine. Bauer (*loco citato*) states that the most frequent effect of epinephrine, namely, the acceleration of respiration, the tremor, the augmentation of the Aschner reflex, and the respiratory arrythmia, are not caused by excitation of the sympathetic, but by excitation of the subcortical brain centres, and the reasons which he assigns (pp. 88 and 89, *locus citatus*) are most convincing. The epinephrine tremor closely resembles the tremor of Basedow's or Graves's disease, and can be produced by the injection of 0.0015 milligram of epinephrine in some individuals. Lewandowsky (*Archiv für Anatomie und Physiologie*, p. 360, 1899. *Zeitschrift für die gesammte Neurologie und Psychiatrie*, Ref. ii, p. 824, 1910, und 4, 1911) makes the following statement: "It is certain that most kinds of tremor are conditioned centrally, though in rare instances they may be of peripheral origin." Kraus, Friedenthal, Brokin, and Trendelenburg assert that epinephrinemia is constantly present in Basedow's disease, and Kraus has brought forward convincing proof that other blood glands beside the thyroid are pathologically deranged in Basedow's disease. It is of importance to mention this in connection with the preceding remarks. These facts, taken together with the general augmentation of the reflex excitability and the excitatory effect on the central and peripheral vagus (Verworn, Amberg, Langley, and Neujean) and the rarely observed provocation of sweating by epinephrine are observations which considerably reduce the so called elective affinity of epinephrine. We have then observed that subcutaneous injections of pilocarpine, instead of causing slowing of the pulse, may, in man, cause acceleration; for it is known that pilocarpine can reduce the facility of response of the heart to vagus stimulation. Concerning atropine, it has been observed by Bauer that, instead of quickening the pulse, it may cause slowing, and it has been furthermore observed that in rabbits pilocarpine may produce glycosuria and polyuria.

Biological laws should have no genuine exceptions. As long as exceptions exist, every one has the right to regard all schematizing as unproven that neglects these exceptions, and such schemes as are impediments to real progress. Even though a functional antagonism between so called sympathetic and the remaining autonomous nerve systems exists, and although embryologically sympathetic and autonomous systems can be separated, nevertheless the anatomicoembryological and physiological systems are not entirely identical with the pharmacological.

ORGAN NEUROSES.

The thyroid can be influenced by nerve fibres in the superior laryngeal nerves (Katzenstein, Exner, H. Wiesner, and especially Asher, and Flack). Moreover, these special fibres are of sympathetic origin. We now are learning with growing certainty that we can have secondary secretory neuroses of the thyroid simulating Basedow's disease, but due to a primary disease of these sympathetic secretory fibres. The thyroid is just as well dependent upon and controlled by the neural system as the salivary, or any other glands; therefore we have a right to believe that there are thyroid neuroses just as there are gastric neuroses. This is made all the more probable by the fact that clinical cases with all the phenomena of Basedow's or of Graves's disease are found that were not relieved by thyroidectomy, and where parts of the removed thyroid were found normal—no hyperplasia of secreting vesicles, no liquefaction of colloid material, and no small round cell infiltration.

Adrenal neuroses. The splanchnic nerves have been recognized as containing the secretory fibres for the suprarenal bodies (Dreyer, Biedl, Tscheboksarow, Asher). Even the hypophysis appears to function under nerve control. We shall have to expand the conception of thyroid gland neuroses to a more comprehensive conception of *ductless or blood gland neuroses*; whereby I mean all those conditions where, with a manifest existence of general overexcitability and overirritability of the vegetative nervous system, the organs of effect or response to this overirritable nerve system are represented by certain ductless, or so called blood glands. These glands with internal secretion answer to the increased innervation impulses by an increased secretion. We are dealing with blood or ductless gland neuroses, when the overexcitability of the vegetative nerve system finds expression in augmented function of certain ductless glands. If it is now recalled that the principal effect of the secretion of the best studied of these glands with internal secretion is one of stimulation (for the word *hormone* means to excite or stimulate—a designation given by Bayliss and Starling), it must become impressively apparent that an overirritable nerve system is being successively made still more irritable by the products of its own overactivity. (*Das ist der Fluch der bösen That, dass Sie fortzeugend Böses muss gebären.* Schiller.) And in the new conception of ductless gland neuroses due to hyperirritable vegetative nerves acting on blood glands as their organs of response, a vague old idea is reborn in more precise physiological garb, namely, that of the "vicious circle"—the overirritable sympathetic nerves whipping on to overwork the very organs whose secretion will, in turn, prevent these identical nerves from ever coming to rest. Verily, the surgeon is justified in severing the cervical sympathetic to the thyroid in hyperthyroidosis, rather than performing thyroidectomy, for only a destruction of a link in the overactive chain of neurochemical events can destroy the "vicious circle."

The glands with internal secretion regulate the tonus of the nervous system and of the muscle fibres in the walls of the bloodvessels. This nerve and vascular tonus, together with the entire blood gland ensemble and the general composition of lymph and blood plasma resulting therefrom, are the most important factors in that which has been called the "constitution of the organism." The blood and neurosis command a specific and peculiar classification, therefore, in contradistinction to the remaining organ neuroses. For the internal secretory or blood gland neuroses furnish the fuel for

their self destruction, and long before they are recognizable as manifest neuroses, they secretly furnish the transition between constitution and disease, for what may at one time impress the clinician as a constitutional peculiarity may at another, when a quantitatively increased measure of automatic mutual nerve, gland, and chemical derangement has developed, represent a grave disease.

The elective affinity of the chemical substances mentioned for certain parts of the vegetative nervous system has been designated by the term "tropism." I should prefer the more precise term of "pharmacotropism"; but in making this conclusion as defined in the preceding, namely, that pilocarpine excites and atropine inhibits all autonomic nerve fibres whose function is the furthering of an action, etc., etc., the respective authors have neglected the condition of the so called organ of response, that is, its ability to react and the degree to which it will answer to the stimulation of nerve and chemical substances. It is a curious fact that patients who already have an organic disease of the stomach will answer more readily to chemicals that excite the secretion and motions of the stomach than normal individuals. The same can be said of the heart, the kidney, the skin, the internal secretory glands, and the general nervous system. Certain constitutional types of human beings, therefore, will react to epinephrine, for instance, preeminently with tremor because their neuromuscular system is already unbalanced. Others will react with acceleration of the pulse, because their neurocardiac apparatus is most susceptible, and still others will answer with increased blood pressure, or even excretion of glucose because their vasomotor apparatus and their metabolism and renal apparatus are most sensitive, or perhaps already damaged. In the same way there may be different kinds of effects of pilocarpine. Indeed, I can agree with Bauer, Petren, and Thorling that most human beings react as well to pilocarpine as they do to epinephrine. The phenomena which are interpreted as due to increased vagotonus—namely, slow heart, increased gastric and esophageal peristalsis, inclination to sweating and bronchial asthma, eosinophilia, and excess of hydrochloric acid—are found often in human beings who react as well to epinephrine as they do to pilocarpine. On the other hand, there are human beings who have absolutely no secretion of hydrochloric acid, who at times show alimentary glycosuria—in short, such as Eppinger and Hess would designate as sympathicotonic human beings that react most intensely to pilocarpine. Therefore, as I have already pointed out in my publication on splanchnoptosis (*Interstate Medical Journal*, xix, No. 3, 1912), the physiological and pathological antagonism of two human conditions called *vagotonie* and *sympathicotonie* is so exceedingly difficult of execution in practice that it cannot serve as a means of clearing up our insight into the workings of the nerves upon glands, muscles, bloodvessels, organs, etc. The increased excitability of various human beings to epinephrine, atropine, pilocarpine, ergotoxine is more an indication that the entire vegetative nervous system—the sympathetic as well as the autonomous—is in a state of morbidly increased irritability. There are two fundamental concepts which we must bear in mind in interpreting these complex pharmacotropisms: First, that there is a diffuse dissociation of the individual effects of the neurotropic substances; secondly, that when the tonic innervation, the increased excitability of the vegetative nervous system has been found to exist, it need not come to expression in all organs of response with the same intensity, but the most varied combinations, phenomena, and degrees of effect may be observed in these organs. In other words, the various organs of effect in single individuals react in a different manner to the same stimulus. This may be explained in a variety of ways. The so called antagonistic tonus (the reciprocal or contrary innervation of S. J. Meltzer; see, also, Sherrington) is of varying intensity. It is, therefore, also plausible that this condition of reciprocal or contrary innervation, or what we could call antagonistic tonus, may be physiological as long as it serves the purposes of the entire organism in a beneficial manner. It is pathological as soon as one or other tonus is so exaggerated that the common welfare of one or other organ is in danger, and this is exactly what hypertonus of the vagus and sympathetic can lead to. Increased excitability of the vegetative nervous system may give origin to organ neuroses. These may be brought about by two conditions—either the overexcitability of the nerves supplying the organ, or a morbid condition in the organ itself rendering it more reactive. In this way we can conceive of the origin of gastric, intestinal, sexual, heart, and respiratory neuroses. But no one has as yet thought of conceiving neuroses of internal glands under this neurochemical viewpoint. Another factor which enters into this aspect of the etiology of organ neuroses, and which might be added as number three to the two already defined, is what might be called "psychic pathbreaking," by which is meant the facility with which neurochemical influences are made to go in one definite direction to a certain organ because the individual has his or her attention concentrated upon that organ.

We therefore have three conditions in the development of organ neuroses: First, a heightened nerve excitability; second, increased reactive power of the organ of response; and third, psychic facilitation by the attention. It is evident in considering the dissociation of neurotropic substances that those organs which are most readily and most easily appealed to are in the foreground with their effects. Patients that are already stomach sufferers will predominately react to epinephrine and pilocarpine by gastric symptoms. Asthmatic patients will react to very small doses of pilocarpine with profuse bronchial secretion. I must also emphasize, in this connection, that the three states—increased excitability, increased reactive power of the organs, and increased psychic facilitation—may, one or all, be affected in the same or opposite direction. They may be inhibited, and therefore we may have organs of a lessened responsive power. All this goes to show the immense complexity of the problem of pharmacodynamic and physiological parallels in the autonomic and sympathetic nervous system.

730 University Parkway.

THE CEREBROSPINAL FLUID AND A SPECIAL METHOD OF TREATMENT OF ESSENTIAL EPILEPSY.

A Preliminary Communication.

By Alfred Gordon, M. D.,
Philadelphia.

The study of the cerebrospinal fluid is of interest not only to the physiologist, but also the clinician. At the bedside it becomes an indispensable element for the diagnosis of various affections. Quincke, who had shown the facility with which the subarachnoid cavity can be punctured and a certain amount of fluid withdrawn, opened a new field for researches which led in a comparatively short time to many practical results. The characteristics of the cerebrospinal fluid from the standpoint of its various properties, viz., physical, chemical, bacteriological, and cytological, can no more be ignored nor overlooked, as they render in some cases most valuable aid in diagnosing various affections of the cerebrospinal axis. As a striking illustration may be mentioned the important part which the cerebrospinal fluid holds with regard to the Wassermann test. In paresis and tabes this test on the blood-serum plays a less determining role than that on the cerebrospinal fluid. When the latter is positive, the diagnosis of a parasyphilitic disease is final. Various forms of meningitis can be diagnosed with a certain degree of accuracy from the cytology and bacteriology of the cerebrospinal fluid.

For thereapeutic purposes the subarachnoid cavity with its fluid has been directly utilized in certain affections. Lumbar puncture is a therapeutic measure which has proved beneficial in many instances. The injection of antimeningococcus serum into the spinal canal in cases of epidemic cerebrospinal meningitis has demonstrated that the cerebrospinal fluid is one of the humors of the body which may contain grave toxic elements which can be neutralized by a specific antitoxin when the latter is placed in direct contact with the former. It is thus proved that this antitoxic action is carried from the spinal canal to all subarachnoid spaces and cavities of the nervous system. We are, therefore, certain that the blood serum is not the only vehicle and carrier of toxic products which develop in our economy, but the cerebrospinal fluid also participates to a considerable degree in their distribution. In view of the great accessibility of this humoral substance, it behooves us to continue its study with the view of forming a basis for therapeutic purposes.

Essential epilepsy is one of the serious affections, the nature of which is still obscure, and the management of which is surrounded with difficulties. We are not yet in a position to claim the possibility of complete cure. Various means devised for its treatment have not been altogether successful. The pathogenesis of the malady presupposes a constant or at least a frequent formation, in the organism of the epileptic individual, of unusually severe or of special toxic elements which cause the cerebral irritation manifesting itself in convulsive seizures. Such an explanation of epilepsy has its solid physiological basis besides the support of clinical observations.

It is a common observation that when the epileptic individual is surrounded with all precautions in regard to his diet and mode of living so that the formation of most noxious toxic elements is reduced to a minimum, his epileptic seizures become considerably less conspicuous in severity and frequency. Indeed sometimes the latter may become exceedingly slight and rare.

As to the physiological reasons for a toxic basis of epilepsy, numerous chemical researches and experiments attest their *raison d'être*. In this respect the works of Ceni and Donath deserve particular mention. Ceni has worked at this subject since 1901. A résumé of his conclusions is clearly presented by him in *Centralblatt für Nervenheilkunde*, 28, p. 213, 1905. His investigations concern exclusively the chemical constituents of blood serum in epileptics. He believes that there exists an active specific substance which by itself or when united with other material brings into display an epileptogenetic substance; hence cerebral irritation and convulsive seizures.

J. Donath (*Hoppe-Seyler's Zeitschrift für physiologische Chemie*, 39, p. 526, 1903, has devoted special attention to the study of cholin in the cerebrospinal fluid of epileptics. He found it almost invariably present in every case of epilepsy. He concludes from a large series of experiments on animals carried out by himself and others, that cholin plays a most conspicuous role in the explosion of epileptic attacks as a result either of hyperemic, inflammatory, or hypoplastic state of the cerebral cortex. He went further and investigated the origin of epileptic fits occurring in the course of other diseases, especially in paresis. Here again he arrives at the conclusion that cholin takes the predominant part among other morbid elements in the outbursts of epileptic seizures. He, however, does not deny that ammonia and kreatinin may participate in the causation of the disease.

The researches of these two authoritative observers are sufficient to prove the contention that a highly toxic state of bodily humors is intimately associated with the onset of epileptic convulsions. Ceni long ago observed in the course of his studies on epilepsy that the blood serum of one epileptic injected into the blood of another gives sometimes satisfactory therapeutic results. He therefore concluded that the serum of one has a specific action on the serum of another. He also observed that the serum taken from one epileptic individual produced favorable results when injected into the blood of a second patient and unfavorable results when injected into the blood of the third patient. The situation is therefore analogous to the effects of antiserums in other diseases. Ceni's studies in that direction have so far given no positive results, as he has not been able as yet to determine exactly the characteristics of the blood serum which fit each individual case. The difficulty, in my judgment, lies perhaps in the complexity of the contents of the blood and of the great variety of reactions of its constituent elements to various extraneous agents.

The cerebrospinal fluid does not present the complexity of the blood. It presents a medium which is easily accessible. It participates in infectious and toxic processes occurring in the organism. The

above mentioned studies of Donath, also the investigations of other writers, such as Dide and Saquepée, Pelligrini, Jahns, Castaigne, and others show the existence of a marked toxicity of the cerebrospinal fluid in epilepsy. In the course of my investigations, of which I am about to speak, the presence in the cerebrospinal fluid of some noxious elements was evident. When a lumbar puncture was performed on one of my patients (Case I), some blood was noticed in the tube with the first quantity of the withdrawn cerebrospinal fluid. The fluid was preserved and an interesting phenomenon was observed, viz., complete hemolysis. The tube has been kept for several weeks and at no time could coagulation or a sediment of blood be seen. To all appearances the cerebrospinal fluid contained a poison which is destructive to blood cells. If we consider cholin as the most conspicuous toxic element in the fluid of epileptics (see Donath's work), the hemolytic phenomenon is thus explained. Pursuing my studies further, I observed that when this particular patient kept on improving and his seizures became very mild and rare (see history), this phenomenon disappeared.

The most interesting observation is the following. One drop of blood drawn from the finger of one patient is dropped on the centre of the surface of fifteen drops of cerebrospinal fluid taken from another patient, and vice versa, a drop of blood of the second patient is brought into contact with fifteen drops of cerebrospinal fluid from the first patient; also the blood of each patient was brought into contact with his own cerebrospinal fluid. In the first tests complete hemolysis took place, while in the second tests the blood remained coagulated at the bottom of the tubes for days. It was evident from these tests that the cerebrospinal fluid of each patient contained poisonous elements which were antagonistic to each other's blood, but not to their own. Otherwise speaking, each cerebrospinal fluid contained substances which acted specifically on another epileptic but not on the donor.

Starting from this principle, I asked myself, if it could not be utilized in the treatment of epilepsy. Accordingly I selected, at first, two grave cases of epilepsy in which the ordinary treatment was of no avail. I withdrew from each thirty c. c. of cerebrospinal fluid and immediately injected subcutaneously three c. c. into each other's arm. Headache followed at the end of each withdrawal of fluid, but it disappeared in twenty-four and forty-eight hours. The patients were watched closely; the bromides were continued as usual. During the following three days until the second injection no attack occurred. During the following two weeks the patients had four injections and not a single attack occurred. On the third week, the supply of the cerebrospinal fluid became exhausted. The patients began to show recurrences. The seizures, however, were incomparably milder than the original ones, and different in character. They were of the nature of petit mal. The histories of the cases detailed herewith show that even the early results were striking. The subsequent course of the disease, the intervals between the recurrences, the nature of the latter, the freedom from attacks for weeks, the improvement in the mentality and the general health of the patient, and, finally, the discontinuance of bromides all tend to show that the results from this new method of treatment are very promising. Encouraged by the first two cases I applied the same treatment to two other cases. The last one, in a little girl, presented certain features that left no doubt of the efficacy of the method. In her case no lumbar puncture was performed so that withdrawal of fluid could not be considered as the cause of her remarkable improvement. It is well known that some favorable results have been obtained in epilepsy from repeated lumbar punctures. In my patient the improvement in all probability was due to the subcutaneous injections of the cerebrospinal fluid.

The highly satisfactory results which the new method gave me prompted me to bring it to the attention of the profession so that others may apply it to those cases which they had been unable to relieve and which they had decided to abandon because of their incurability. My communication is only a preliminary one. I have only four cases to report which have been studied for a period of ten months. Further observations on a larger scale are necessary before final conclusions can be drawn. The histories of these cases are as follows:

Case I. Young man, aged twenty-five years, had suffered from typical epileptic seizures for the last six years. During the last year the attacks became very frequent; he would have them four or five times a week and several in the same day. They were all of grand mal type. Patient had had the usual treatment with bromides prior to my attendance, with no result. During a period of four months I had him on bromides in combination with antipyrin, also subjected him to a very strict diet appropriate in such cases. He had periods of improvement, but the improvement was only slight. As lumbar puncture had been advocated in essential epilepsy, the patient was submitted to this method. Three punctures were made at three weeks' intervals, but no benefit was noticeable.

The new treatment was then begun ten months ago. Up to the time of writing these notes the patient had had eight lumbar punctures, thirty c. c. of cerebrospinal fluid were withdrawn each time. Part of the fluid was put aside for laboratory examinations, the remainder served for intramuscular injections into other patients. The first injection from patient II was made with three c. c. No local unpleasant effect was observed. The bromides were continued as before this treatment and no change had been made with reference to the general rules, diet, etc. During the following two weeks he had four injections each of three c. c., and the following three weeks the patient's mother noticed that not only were the attacks decidedly less severe, but the postepileptic mental hebetude was unusually brief in duration. Besides, only one fit occurred the first, and two each subsequent week. The injections were resumed and five c. c. were administered. As the attacks again disappeared, and no untoward manifestations were observed, the dose of five c. c. was decided upon for further treatment. Twice a week he received the injection. The quantity of bromides was decreased and in two weeks they were discontinued, but the dietetic and hygienic rules were followed up. In all the patient had had five injections of five c. c. each. During the three weeks of treatment he had had but one attack which consisted no more of the clonic and tonic convulsions, but of a sudden loss of consciousness with a tendency to run. This attack lasted but a few seconds. At no time prior to this treatment did he have a similar attack. As the supply of cerebrospinal fluid became insufficient and no injections could be made for the following three weeks, the patient decided to stay away. When he returned, he told me that he took no bromides and only one attack occurred during that time. This attack was exceedingly brief and consisted of a momentary loss of consciousness. The injections were resumed and administered twice a week for the following two months. Small doses of bromides were given the patient one or two days of each week. The patient had during this time only three attacks of petit mal. An interval of three weeks followed

during which no injection was administered and no bromides were given. No attack of any form occurred. Again the injections were resumed and continued. Bromides were given very exceptionally and only occasionally when his sleep was disturbed.

It is interesting to note that during the last six months no major attacks occurred, that they were replaced by seizures of petit mal, that the latter are rare and that the general health has improved remarkably. A last interesting point may be mentioned, that bromides have been taken by the patient in but very small quantities and only very occasionally. The patient is still under observation.

Case II. Young man, aged twenty-eight years, huckster by occupation, had been suffering from essential epilepsy for twelve years. The attacks were of grand mal character and very severe. They occurred at first every two months, but for the last four years two or three times every week. Before coming under my care he had had the usual course of treatment with bromides. The result was negative. About ten months ago simultaneously with the first case I commenced the injections of cerebrospinal fluid. The latter was taken from the first patient. The method and quantity administered were identical with those of the first case.

The results were practically the same as in Case I with the exception that the intervals, which were free from attacks and during which no injections were made, were on several occasions greater than in the first case; also when an attack occurred, it was, while of the petit mal type, of a different character than in Case I, viz., the patient would suddenly talk confusedly for a fraction of a minute. No major attacks occurred within the last five months. The petit mal fits still occur, but on very rare occasions. The patient's mentality and general health have improved considerably.

Case III. Man, aged thirty-nine years, tailor by occupation, had had epileptic fits of grand mal character since the age of seventeen years. In the last five years they were quite frequent, they occurred four or five times a week and sometimes several days in succession. For a number of years he had been under bromides but with the usual result, viz., at times amelioration, at others without the least effect.

The injections with cerebrospinal fluid commenced about nine months ago. The fluid was taken from patient I. The method pursued was exactly the same as with the other patients.

The result was more striking than in the other two cases, inasmuch as there was no attack of any kind during a period of five weeks when even no bromides were given. Considering the great frequency of the major fits before the treatment, viz., four or five times weekly, their disappearance for five whole weeks was exceedingly gratifying and suggestive. The cessation of attacks occurred after the third injection. Whenever the supply of fluid became exhausted and the treatment had to be interrupted, recurrences took place, but contrary to the other two cases, they were of major character. However, they proved to be considerably less severe and of shorter duration; they consisted only of unconsciousness and tonic contractions of the extremities. The attack was very brief, the patient did not present any marked mental hebetude and did not go to sleep after the fit. At no time were there attacks of the nature of petit mal.

The recurrent seizures disappeared every time the treatment was resumed. Nevertheless on two occasions the patient continued to have them while the injections were being made, but only once a week. Again they were comparatively very mild and very brief. Bromides have been given only during the weeks of recurrences and in small quantities. The patient is still under observation and his condition at the time of writing these notes is most satisfactory; no attacks have occurred for the last three weeks.

Case IV. Little girl, aged eleven years, had had epileptic attacks since the age of four years. At first only occasionally, they became very frequent within the last eighteen months. She could not acquire any education, as the spells prevented her from studying. She was, therefore, arrested in her development. Like the other patients she had had energetic bromide treatment with little or no result.

She was submitted to the new treatment eight months ago. The following peculiarities must be mentioned with reference to this case. No lumbar puncture was performed during the entire treatment and the cerebrospinal fluid from the third patient was used all the time except on two occasions. The patient began to show decided improvement after the first injection. The nocturnal seizures ceased completely and the day attacks diminished at once —instead of the former daily fits she had only two a week. After the fourth injection they disappeared totally for a period of three weeks. When patient III, whose cerebrospinal fluid she received, showed marked improvement, she began to have recurrences, though slight. I then conceived the thought to inject the fluid from patient I at the time he showed recurrent attacks. At once improvement was obtained. I then returned to patient III and managed to puncture his spine at the time he showed recurrences. This fluid was used for the little girl again and improvement was also observed. On another occasion I was obliged to have recourse to the same change of the individual's fluid because of the refusal of patient III to permit a lumbar puncture at the time I was in need of it.

In view of the above peculiarity I always managed to use the fluid removed at the time of recurrent attacks, no matter how mild they were. Moreover because of my casual observation on this patient I decided to apply the same principle to the other patients. I found that this observation was the same as in the other cases. All of them showed more lasting and prompt improvement when the cerebrospinal fluid drawn at the time of recurrent attacks was injected. Patient IV, like the others, had recurrences, but they were mostly like those in the first two cases, viz., of the nature of petit mal. Only during one month had she two attacks of the major character. The latter were decidedly milder than they had ever been so that, according to the child's parents, the attacks would have passed unnoticed were it not for a slight noise which the patient made during the seizure. Presently she was free from attacks of any nature and had been so for the last six weeks. She received an injection of five c. c. once in a week. No bromides had been taken by her for the last two months.

COMMENTS.

The four patients treated with subcutaneous injections of cerebrospinal fluid, taken for each from another epileptic, were benefited considerably. The direct effect of this procedure was, and is unmistakable, for the reason that prior to this treatment for months and years the patients received uninterruptedly large doses of bromides and other drugs, and there was comparatively speaking very little or no relief. The improvement after the administration of the cerebrospinal fluid was strikingly noticeable not only with reference to the severity of the individual attacks, but also to their frequency. The intervals between the seizures were remarkably long considering their occurrence before the new treatment was instituted. Moreover, in some of my cases the nature of the attacks changed: Petit mal took the place of grand mal. The mental hebetude following the epileptic seizures became here exceed-

ingly slight. The treatment, in short, proved to be highly beneficial.

An objection may be raised to too much reliance on the effect of the fluid on the epilepsy, as spinal punctures with removal of some of the cerebrospinal fluid have been reported as having a beneficial effect in epilepsy. This objection may be removed, I believe, by the fact, that while in the three male patients the spinal canal was punctured, the girl patient had no spinal puncture—and the results were just as satisfactory. While it cannot be totally denied that the lumbar punctures may have had something to do with the amelioration of the epilepsy, nevertheless the similarity of the results in the case without lumbar puncture to the results of the cases with lumbar puncture, renders the foregoing objection almost untenable. This similarity was observed in every detail, such as in the promptness of the improvement after one or two injections, in the duration of the intervals between the attacks, in the slightness of the recurrences, in the greatest amount of improvement noticeable especially if the injected fluid was taken from other patients during recurrent attacks no matter how slight the latter may have been.

Another objection may be brought forward, namely that improvement has been observed in cases of epilepsy treated with the ordinary medications and, even, without medications. This assertion cannot be denied as in the experience of every neurologist such cases have occurred. However, in the four cases reported here, such an occurrence was not observed. Every one of the patients presented the most serious type of essential epilepsy with no abatement of the intensity and frequency of the seizures, in spite of the uninterrupted treatment with the classical remedies administered by experienced men. The improvement in all the four cases was striking, shortly after the new treatment was instituted. To all appearances the results obtained were due to the favorable effect of the cerebrospinal fluid of one epileptic individual on the seizures of another epileptic individual.

The number of cases thus treated is certainly very small to permit us to draw incontrovertible conclusions. It must be distinctly understood that no final claim is or can be made, as to the curability of epilepsy by this method. The above mentioned objections, namely, that other factors may have played a certain rôle in the striking amelioration of my patients, have their *raison d'être*. Besides, the duration of my observations, viz., ten months, is altogether too brief for final deductions.

This communication is only a preliminary one. It is brought forward with the object of calling the attention of others to a field of work yet unexplored. Epilepsy is one of the grave affections for which our therapeutic efforts have accomplished little. The results obtained in my cases have been so uniformly satisfactory, that I feel warranted in bringing the method devised for treatment of such cases to the attention of those who are in a position to continue further investigation of the procedure,

The problems which confront us in this line of investigation are in my opinion as follows:

1. To determine whether each epileptic individual requires the cerebrospinal fluid from one certain individual whose fluid possesses certain well defined properties.

2. To determine whether the fluid taken promiscuously from any epileptic individual is sufficient.

3. To determine whether preliminary spinal puncture is absolutely necessary before treatment is instituted.

4. To determine what particular element or elements in the cerebrospinal fluid play the most important part in controlling the epileptic seizures.

5. To determine in what way the toxic elements of one epileptic are able to counteract the toxic elements of another epileptic and thus remove cerebral irritation.

These are the few most important features of the problem of treatment of epilepsy as viewed from the standpoint of the method offered in this preliminary paper. It is my belief that the combined efforts of experimental and clinical investigations may solve the difficult question of the therapy of epilepsy.

1812 SPRUCE STREET.

THE RESULTS OF TONSIL OPERATIONS ON PUBLIC SCHOOL CHILDREN IN NEW YORK CITY.*

A Study Based upon the Examination of Over One Hundred Children Selected from the Department of Health Records of Cases Recently Operated on in the Local Hospitals and Dispensaries.

BY GERHARD HUTCHISON COCKS, M. D.,
New York,
Assistant Surgeon, Manhattan Eye, Ear, and Throat Hospital, Ear and Throat Departments.

In May, 1913, the writer was asked by the New York City Visiting Committee of the State Charities Aid Association to examine a series of public school children whose tonsils were operated upon during the past year. The object of this investigation was twofold: First, to obtain information which would warrant a request for more funds from the board of estimate for the care of adenoid and tonsil cases in the municipal hospitals; second, to ascertain whether any improvement could be made in the methods employed in the schools for the disposition and treatment of these cases.

With the cooperation of Doctor Maxwell of the department of education and Dr. Josephine Baker, of the department of health, this investigation was rendered possible. The children examined by me were treated or operated on in one or other of about thirty of the local hospitals and dispensaries, and were scattered among twelve schools in Manhattan.

The number of children examined and referred for operation by the school doctor	107
Number of children who evaded operation	18
Number operated on	89
Operated on with general anesthesia	52
Operated on without anesthesia	21
Anesthetic not definitely determined	16

The ages of the children varied from six to [illegible] years.

*Read before the New York Academy of Medicine [illegible], 1913.

A few words are necessary to explain the system of medical inspection. With the present staff of medical inspectors each child has a complete physical examination when he first enters school and again three years later. Once a month there is a general inspection of all pupils. The children form in line and pass before the physician, who examines their eyelids, mouth, and hair for gross lesions. In addition, the school nurses make daily reports of all suspicious or sick cases.

If a child is found with diseased tonsils or other abnormal conditions, he is referred to the family physician, or clinic for treatment. The medical inspector's findings are noted on a card and filed for future reference. As the law now stands, the department of health cannot legally compel parents to have their child operated upon.

Last year 825,000 children enrolled in the public schools of New York. One medical inspector is allotted to every 9,000 children. The writer did not examine the majority of the children to determine the presence of adenoids, because of the poor facilities for artificial illumination in the schools. If the digital method of examination had been attempted, it would have been likely to start a panic.

When we stop to consider the large number of children examined annually by the department of health, the difficulties encountered in the shape of opposition from parents, lack of proper examining rooms in the older type of schools, etc., it is evident that the board of health is carrying on a useful work. We shall show later, however, that approximately twenty-seven per cent. of the children examined either failed to have their tonsils satisfactorily removed at operation or received mutilations of the adjoining soft parts. With such a record it is time to attempt to improve the operative technic in the clinics, and to select hospitals where thorough operations are performed. The physicians and surgeons in charge of the operating rooms, rather than the department of health doctors, are to blame for this large percentage of failures.

There were naturally certain defects found in the system. For example, thirty-one of the one hundred and seven children examined were suffering from nasal abnormalities either urgently requiring treatment or where treatment would be highly beneficial. Apparently these cases had been referred to clinics, the adenoids and tonsils removed, and the nasal conditions neglected. Obviously, in some of these cases, the nasal affection, such as purulent rhinitis, may have been acquired after the child was discharged from the hospital. On the other hand, as far as I know, the school doctor does not examine the anterior nares.

A few of the more severe nasal conditions observed are as follows: Deflected columnar cartilage, completely occluding the nostril, pus in both nostrils (sinus disease), bad septal deflection, hypertrophic rhinitis, atrophic rhinitis, folliculitis alæ nasi, etc. A large proportion of these children had carious teeth, requiring attention. Eighteen had high palatal arches, requiring correction, either on account of improper development of the upper jaw and teeth, or on account of interference with the nasal breathing.

The teachers' comments upon the results of operation are interesting. In many cases they noted that the child was cured of recurring attacks of sore throat, earaches, mouth breathing, etc. In many instances the general physical and mental condition of the child improved markedly after operation. In connection with this the teachers' comment on Cases LXXVI to LXXX is worthy of remark. "These four children used to be backward, but by special effort were brought up to the grade corresponding to their years, and now they are getting the average marks in their work."

The soft parts adjoining the tonsils were injured in nine of the eighty-nine operated cases. In Case XXXIII a small piece was removed from the right anterior pillar, and the left anterior pillar was split into two parts. In Case XXX a portion of one anterior pillar and a small piece of the adjoining soft palate was removed. Functionally there were no ill effects in this case. In Case XXXII the left anterior pillar was buttonholed. In Case LXXXII there was a slight nick in the right anterior pillar. Case LXXXVII represented a bad type of mutilation. The uvula was amputated, and the entire configuration of the throat was altered by the contraction of the cicatricial tissue in the soft palate. This operation was performed in a general hospital. In Cases XXXVI and LV the uvula was amputated. In Case LXXVIII a small piece of the left anterior pillar was removed. In Case LXXXIX the left anterior pillar was somewhat shortened as a result of the operation.

A comparison of the series of twenty-one cases operated in without an anesthetic, with the series of fifty-two cases operated in with general anesthesia is worth careful study.

In the first place, where no anesthetic was employed the results were uniformly bad, with two exceptions. The results of these cases are as follows:

CASE I. Good result. Small remnant tonsillar tissue both sides.
VIII.—Large tonsils remain on both sides, projecting beyond the anterior pillars.
XVI.—Large hypertrophied tonsils.
XVIII.—Apparently about one half of each tonsil remains.
XXXIX.—Hypertrophied and diseased tonsils, apparently the tops had just been clipped off.
XLIII.—A large flat piece of tonsillar tissue on both sides.
XLIV.—Buried tonsils, both sides.
XLV.—Moderately large diseased tonsils remain.
XLVI.—Large buried tonsils both sides.
XLIX.—Bad result. Left tonsil projects beyond pillars, a large piece still remains on right side.
LI.—Bad result. Large diseased tonsils both sides, mucus coming down from nasopharynx.
LII.—Hypertrophied tonsils both sides. Adenoid completely removed.
LIV.—Bad results. Right tonsil enlarged and projecting beyond pillars. Left tonsil moderately hypertrophied.
LVI.—Lower half of left tonsil not removed.
LXXV.—Good result. Still has small piece tonsillar tissue both sides.
LXXVI.—Both tonsils still enlarged.
LXXVII.—Large tonsils both sides.
XCV.—Large diseased tonsils, both sides.
XCVII.—Large ragged pieces tonsillar tissue both sides.
CVIII.—Large ragged, diseased tonsils both sides. Child stated that doctor did not operate on tonsils but merely removed adenoids.
CXIII.—Large buried tonsils both sides.

Of the fifty-two children operated on with general anesthesia, the tonsil operation was well done in thirty-nine, i. e., the tonsils were either removed completely, or an insignificant remnant of tonsillar

tissue was left on one or both sides. In one of these fifty-two cases, for some reason unknown to the writer, the adenoid was apparently left intact. In another case the result showed what appeared to be a very satisfactory tonsillotomy operation.

An analysis of the twelve cases which showed poor results in spite of general anesthesia follows:

Case II. Large ragged tonsils both sides.
XII.—Large piece of tonsillar tissue remains on both sides.
XVII.—Small remnant right side, large piece left side.
XXI.—Large buried tonsils both sides. This child was sent to an institution where five other children in our series were referred and were not operated on, apparently through ignorance or carelessness, for the operation was plainly indicated in all five cases.
XLII.—Ragged flat pieces both sides.
XLIV.—Buried tonsils both sides.
LVIII.—Ragged pieces tonsillar tissue remain, both sides.
LXII.—Large buried tonsils on one side.
LXXXI.—Large pieces both sides, operated on in a general hospital.
LXXXVI.—Large piece on one side.
XCII.—Lower half left tonsil remains.
CIV.—Large remnants of tonsillar tissue both sides. Nevertheless teacher reports marked improvement mentally.

The writer has long felt that the performance of adenoid and tonsil operations upon children without general anesthesia is unnecessarily cruel. Unfortunately, it is a practice still in use in many clinics and dispensaries in New York city and throughout the country. Without taking into consideration the strictly humanitarian side of the question, a comparison of the figures given above should convince the impartial observer that adenoid and tonsil operations on children without general anesthesia should be discontinued. In the first place, it is impossible to effect a complete operation without the employment of a general anesthetic. In the second place, the surgeon is far more likely to cause serious traumatism to the throat if he attempts to operate upon a struggling child held in the arms of an assistant. Moreover, the child is likely to receive a nervous shock from which he will suffer for a long time. Let us hope that all institutions where adenoid and tonsil operations cannot be performed in a thoroughly surgical manner with general anesthesia, will have the courage to close their doors to these cases until equipped to care for them properly.

Before dismissing the subject of anesthesia in adenoid and tonsil operations, there is still another phase of the question which I wish to mention to condemn. If parents bring a child to certain hospitals for treatment, they are told that the operation will be performed free of charge without anesthesia. If, however, general anesthesia is desired, a charge of from two to five dollars is made. While there may be some practical reason for this state of affairs, it is apt to strike the average layman that it places a premium on suffering, corresponding to the patient's ability or inability to meet the expense. It seems only fair to demand that public hospitals should either operate in all cases without anesthesia or should operate in all cases with anesthesia entirely irrespective of the patient's ability to pay.

A circular letter was sent by the New York City Visiting Committee to the different hospitals and dispensaries where the children in this series were treated. Among other inquiries, the question as to the length of time the children were kept in the hospital after operation, was asked. Replies were received from twenty-two institutions. Of these twenty-two, nine lived up to their obligations and kept their patients approximately twenty-four hours or longer for observation and treatment. In four of the other institutions, the children were allowed to go home directly after operation. In seven clinics they were kept for from one hour to twenty-four hours, usually from one hour to three hours.

One well known clinic sends its patients home "as soon as sufficiently recovered from the anesthetic," notwithstanding the fact that its operators always perform a total enucleation of the tonsils under chloroform or ether. Another hospital keeps the children for one hour after the performance of tonsillotomy under chloroform. Two other clinics perform tonsillectomy and allow the children to go home two hours later. It is only too clear that where these patients are sent home in less than one day there is great danger of postoperative hemorrhage, pneumonia, or other complications.

SUMMARY OF STATISTICS.

1. Of one hundred and seven children examined, eighteen or approximately sixteen per cent. failed to have the operations performed.

2. Of eighty-nine cases operated in, nine or approximately ten per cent. received mutilations of the soft parts adjoining the tonsils.

3. Of twenty-one cases operated in without general anesthesia, nineteen or over ninety per cent. were badly done.

4. Of fifty-two cases operated in with general anesthesia, twelve or twenty-five per cent. were poorly done.

5. If we add the number of cases receiving mutilations to the number of cases badly operated in, both with and without general anesthesia, we have 26.9 per cent. poorly done. In addition, there were thirty-one children who required further treatment for nasal conditions. It is therefore clear that the system now employed, notwithstanding its usefulness, can be materially improved.

CONCLUSIONS

1. A greater number of medical inspectors are needed.

2. School physicians and nurses should exercise more care in seeing that children referred for operation carry out their recommendations.

3. When children are referred to hospitals or clinics they should be sent to institutions which maintain nose and throat departments. This is to avoid attacking the tonsils when the anterior nares are at fault.

4. Hospital physicians would do well to remember that a child, referred with a card from the school physician, is often sent simply for diagnosis and treatment. Such a card is not an indication that an adenoid and tonsil operation is imperative or even advisable. The hospital physician should carefully examine and decide each case on its own merits. The mere presence of a pair of healthy tonsils in the child's throat does not necessitate operation. There should be some good indication,

viz., mouth breathing, recurring attacks of earache or tonsillitis, deficient physical or mental development, etc. If operation is contraindicated, the doctor should always note this fact, together with the diagnosis and treatment, on the card provided for this purpose by the school authorities.

5. All adenoid and tonsil operations on children should be done under general anesthesia.

6. Hospitals where adenoid and tonsil operations are performed should be equipped to keep their patients in the wards for at least eighteen to twenty-four hours after operation.

7. The writer begs to suggest the desirability of having a list compiled each year of the hospitals which employ general anesthesia for their adenoid and tonsil operations and carry out the proper aftertreatment. This list of hospitals should be given to the school authorities for use in directing pupils unable to pay for private operations. A committee designated by the Academy of Medicine could be relied upon to draw up such a list on an impartial basis.

The writer desires to express his thanks to Miss Marion R. Taber, Miss Alice E. Mauran, Miss Brett, of the School of Philanthropy, Miss Bell, Dr. W. R. May, Dr. J. D. Kernan, and Dr. O. L. Monroe for help and cooperation in gathering statistics for this report and for aid in examining the children.

137 East Fifty-fourth Street.

TREATMENT OF WOUNDS AND INFECTIONS.

By Arthur E. Hoag, M. D.,
New York,
Instructor of Surgery in Cornell University Medical College, Chief of Surgical Clinic in Cornell University Medical College Dispensary.

During the past three years in Cornell University Medical College, New York Hospital, and Bellevue Hospital Dispensaries many cases of wounds and infections of various kinds have come under the writer's observation, some adequately treated and many others which had not received proper surgical attention; this is the excuse the author offers for this paper.

Believing that the treatment that is in use at my surgical clinic at Cornell University Medical College will be of service to many practitioners to whom the management of wounds and infections is a source of worry, it is herewith given. The present day surgery is becoming more and more simple as to the various antiseptics used in the treatment of wounds and infections.

TREATMENT OF FRESH WOUNDS.

First we will take up the treatment of fresh wounds. In order to do this we must have some kind of a classification. We will classify them in four varieties for simplicity, as incised wounds, lacerated wounds, punctured wounds, and gunshot wounds.

Incised wounds. All wounds of this class should be painted with tincture of iodine (seven per cent.), and then the parts shaved dry, as the tincture will not act in the presence of water. Then iodine is again applied both in the wound and around it. After tying all bleeding points, and sponging out all foreign material with dry sterile wipes of gauze, and suturing nerves and tendons which may have been divided, the wound may then be closed without drainage. A dry sterile dressing is then applied over the wound. No wet dressing is ever applied to this class of wounds under the above mentioned treatment with the one exception of alcohol. The reason for this is that alcohol helps to dissolve the iodine and will not prevent the evaporation of it and thereby cause blistering.

Suture material that may be used varies with the individual operator, the author preferring sterile horse hair or subcutaneous catgut sutures on the face, as these leave little or no scars. On other parts of the head or body silkworm gut or silk may be used. No drainage need be used in fresh cases, as the foregoing treatment generally renders the wound fairly sterile and the tissues take care of themselves under these conditions, and drains are very likely to carry infection into the wound, as well as to drain material out. A drain may be inserted at any time later if there appears to be any infection. The best drainage material to be used is rubber dam, rubber tissue, or rubber tubing.

Lacerated wounds. These wounds should be treated as previously described with this addition. These injuries are generally very ragged and the tissues badly damaged. The damaged tissues should be cut away, as they will slough and cause delay in the healing of the wound. All that has already been said about drains and wet dressings applies to this class of wounds.

Punctured wounds. This class of injuries should be treated as are the incised wounds so far as concerns the application of iodine and method of shaving. In addition all punctured wounds should be explored to the bottom. That is, an incision large enough and deep enough should be made so that free drainage is obtained. Next apply iodine in and around the wound, insert a drain of rubber dam to keep the wound edges apart, and apply an alcohol dressing over it. All patients with punctured wounds should have tetanus antitoxin administered, if there is any chance of tetanus infection. Examples of cases in which it is wise to give the antitoxin are Fourth of July wounds and punctured wounds received around barns, etc.

Gunshot or bullet wounds. These are generally very badly treated, as I think that the first thought of nearly every doctor is to locate the bullet and remove it. As a matter of fact, the bullet has already done its harm before the patient has presented himself to the doctor. It is the doctor's business from now on to see that no more harm is done. The wound should not be probed to find out the situation of the bullet, as in probing we further damage the tissues and carry infection into what is usually a sterile wound. The treatment should be the application of iodine to the wound, and if a large vessel or nerve has been injured, which can be readily told by the amount of bleeding or paralysis present, there is no other treatment than to make an incision, find and tie the bleeding vessel, or

suture the nerve. After this is completed, close the wound without drainage. If there has been no large vessel or nerve injured the only treatment needed is the application of iodine and an alcohol dressing. After the wound has healed a search for the bullet may be made under aseptic precautions, after having an x ray taken and stereoscopic pictures made which will give the exact location of the bullet. The author thinks it is unwise to make a search for a bullet that is causing no trouble. It is also a very safe rule to give tetanus antitoxin in all these cases.

TREATMENT OF INFECTIONS.

The treatment of infections is much more difficult than the treatment of fresh wounds, and if we look in the many textbooks of surgery we shall find that the treatment recommended for this class of cases are many and varied. The treatments now most universally used are incision and drainage, Bier's hyperemia (1) and Müller's treatment of abscesses. The older method of poulticing and the use of different forms of ointments as ichthyol, etc., before incision, have been discarded by modern surgeons. Bier's hyperemia (1) used properly is very beneficial in some cases. Müller's ascitic fluid sterilized by proper filtration is also of great value in cases of abscesses which are well broken down and in positions where a scar is undesirable, as on the face. This treatment cannot be used unless there is a cavity into which the fluid can be injected.

The infections group themselves in certain more or less definite types which may be classified as follows:

I. Inflammations without necrosis, but characterized by the five cardinal symptoms of redness, heat, swelling, pain, and loss of function. Under this class would come phlebitis, lymphangitis, lymphadenitis, etc.

II. Inflammations with a great amount of lymph exudation and a marked tendency to necrosis. This class follows closely that of the first and is simply a more marked degree of infection.

III. Inflammations with marked necrosis and pus formation. The following can readily be put under this head: Suppurative cellulitis, phlebitis, lymphangitis, lymphadenitis, paronychitis and infected wounds. Abscesses and carbuncles also may be classified here as they are but circumscribed cellulitis.

Inflammations with slight exudate. Inflammations of the first class are best treated by rest, elevation, and hot wet dressings, the best wet dressings being alcohol (fifty per cent.), aluminum acetate or normal salt solution. Bichloride of mercury causes in many cases a bad dermatitis, carbolic acid a numbing of the parts and sometimes gangrene. Ichthyol and other ointments do not seem to be of any special benefit, but make a dirty, foul smelling, and disagreeable dressing. This class of infections will bear careful watching, as they tend to develop into the second and third classes and then should be treated as such.

Inflammations with much exudate. The second class of inflammations, if the exudation of lymph is slight, may be treated like the first class for twenty-four hours. But if the exudation is marked, the writer believes there is valuable time lost, in fact that it is dangerous to the patient to wait twenty-four hours. So where there is the least doubt in the physician's mind as to what is going on, the following treatment should be used: First an incision taking in the major portion of the infected area carried deep enough to reach the seat of the trouble; second, carbolic acid of full strength may then be swabbed into the wound, not for its antiseptic power, but to hasten the breaking down of the tissues through its irritating power by bringing to the part more leucocytes with the increased flow of blood. The application of the carbolic acid should be immediately followed by one of ninety-five per cent. alcohol to neutralize the effect of the acid.

The writer prefers a gauze packing saturated with Chlumsky's solution (2) left in the wound. The action of this solution is the same as that described for the carbolic acid after neutralizing with the alcohol. Then a wet dressing is applied consisting of gauze wet with fifty per cent. alcohol solution, and at this time it is also advisable to place hot water bottles about the part to hasten the breaking down of the infected area. As soon as necrosis has occurred and pus formed the gauze should be removed and the case treated as will be described for the third class of infections.

Inflammations with marked necrosis. The treatment of the third class may be exemplified by taking an infection of the palmar surface of one of the fingers which we know to be one of the most difficult of the infections to treat, requiring the utmost care and skill, for, unless these are exhibited, there is danger of the hand becoming involved, likewise the arm, and not infrequently loss of life may occur. Where there is not the loss of life we may get stiff fingers, due to the tendency to spread to the contiguous tendon sheaths, and the loss of function of all the fingers.

A tourniquet should be placed around the base of the finger or forearm (of course, a tourniquet is only adaptable to the extremities); this renders the part bloodless and the operator can see just what is being done. An incision should be carried down through the different layers, care being used not to open the tendon sheaths unless involved; if involved, the tendon sheaths should be opened. The incision should be long enough to take in all the infected area. Too many times we are satisfied with too small an incision, and then again we must not think that the longer cut we make the better, but it is better to make a little too long an incision than too short a one. After opening the swelling, the pus is evacuated and the infected area sponged out with dry sterile wipes of gauze, an antiseptic solution being put into the pus cavity. A good antiseptic solution is Durante's (3), which is a solution of iodine, potassium iodide, guaiacol, and glycerin which the writer has found to be the most beneficial.

Now comes the most important part of the treatment, the subject of drainage. Many kinds of drains have been devised, but most consist of rubber in some form. While operating in cases of infection it is better to use a general anesthetic of some kind, as nitrous oxide or

ether, the reason for this being that the tissues are so badly infiltrated by serum or pus that the injection of a local anesthetic is very painful to the patient; therefore, a local anesthetic should not be used, except in cases where the nerves may be blocked some distance from the infected area.

Because of inadequate incision and drainage the writer believes that many cases go from bad to worse. An example of this will be given later in this paper. The drains used should be of a material which will not dam back the pus, but of one that will readily permit free exit of the infected material. The best material for drains is rubber in some form, as rubber tube, rubber dam or rubber tissue. Under no condition should gauze drains be used in these cases, as this material, even if applied wet, soon becomes dry or filled with purulent material and becomes adherent to the wound edges and, as the top becomes dry, it forms a plug, thereby rendering its drainage qualities nil; it thereafter becomes a plug damming back the purulent material in the wound which had been so carefully made for the purpose of getting rid of the pus.

When this occurs the bacteria and pus proceed to work their way into the surrounding tissues, causing an increase of the affected area. Then when the gauze is being removed the patient complains of a great deal of pain because of its adherence to the wound edges; at this time a large quantity of pus gushes forth, showing that it was under great tension, and that the gauze had actually acted as a cork to the bottle. If, on the other hand, one of the impermeable substances, as some form of rubber drain, be placed in the wound so as to keep the edges apart, free drainage is maintained. The rubber will not adhere to the wound edges. Then by applying a wet dressing that will take up the infectious material as it exudes from the wound, we have done all we can in the way of treatment.

The best solutions to use for wet dressings are fifty per cent. alcohol, aluminum acetate, one per cent. sodium citrate solution (4), or normal salt solution. The sodium citrate solution keeps the blood and pus from coagulating and is therefore a very good solution to use. Bichloride of mercury, on the other hand, is not a good solution to use, as it oftimes delays the healing process by setting up a dermatitis, sometimes mercurial poisoning, and at the present time nearly every day we pick up a paper and read in it that some one has taken bichloride of mercury by mistake or intentionally. Why should doctors prescribe mercury when it does so little good and so much harm? Carbolic acid solution causes a numbing of the part and often gangrene.

After the inflammation has subsided the use of Durante's solution for a few dressings helps to clean up the wound and give the granulations a healthy start. After the granulating tissue has become healthy only a sterile dressing need be applied, or if the gauze sticks, a sterile powder may be used, as talcum or boric acid, not for their antiseptic power, but to keep the gauze from sticking to the wound. Ointments should not be used at any stage of the treatment, as they irritate from their medicinal constituents or by interference with free drainage.

As an example of one of the many cases seen by the author of inadequate drainage and incision, the following is cited:

Case. A young boy, about 17 years of age, came to Bellevue Hospital clinic, second surgical division, complaining of severe pain in the middle finger of the right hand. The bandage and the dressing were removed, both of which were wet, as he had been told to keep them. On examination a badly swollen finger was found, extremely red and tender, in which a small incision about one half inch long over the second phalanx had been made and from which a gauze drain was protruding. The drain was crusted over the top and dry. On removing the drain the patient complained of a good deal of pain and a dram of pus gushed forth showing that the gauze had acted as a plug and not as a drain and that the pus was under great tension.

The case was treated in this manner: A tourniquet being placed about the wrist, an incision under an anesthetic was made beginning at the distal end of the former incision and carried to the end of the finger, and carefully down through the different layers until pus was found On sponging away the pus the tendon sheaths as well as the bone of the terminal phalanx, and the tendons of the same, The incision therefore was then carried to the metacarpophalangeal joint, care being taken not to go beyond the infected area or into the tendon sheaths or joint. Pus was found in the tendon sheaths which were then opened. After all the pus had been sponged out Durante's solution was placed in the wound, the edges of which were then held apart by a rubber tissue drain, a wet dressing of fifty per cent. alcohol was applied, and the patient was instructed to wet it every two hours with the same solution. The following day the patient said, "I have had my first night's sleep in a week." The finger had improved rapidly, the spread of the infection had ceased, and no damming back of the pus was found. His recovery from this time on was uneventful except for the loss of the bone of the terminal phalanx, and the tendons of the same which were involved when first seen. The ultimate result was loss of the first phalangeal joint, but there was good motion in the second phalangeal joint and metacarpophalangeal joint. The writer believed that if this boy had had proper treatment in the beginning he would not have suffered as he did nor would he have lost the use of the first phalangeal joint.

While we are dealing with infections about the hand the writer would like to call to the reader's attention the dangers of through and through drainage. It does not seem to be of any good service, but tends to spread the infection and acts only as a seton. The treatment just given applies not only to infected fingers and hands, but to all infections as well.

Abscesses should be treated in the same manner. An adequate incision should be made, the pus evacuated, and an antiseptic solution applied to the inside of the abscess cavity, Durante's solution being very good. Now we come to drainage once more. The same rule applies here as before. If the abscess cavity is large and it is desirable to keep the sides apart so that it will heal from the bottom upward, a strip of gauze entirely covered by rubber dam or tissue is used, care being taken not to crowd the cavity too full, but only just enough used to prevent the sides from falling in. Rubber tubes work well in these cases, much better, in fact, than the preceding, because they give freer drainage. In some cases rubber tubes should not be used, as, for instance, where a large bloodvessel or nerve may be pressed upon. Then in larger abscesses the first method mentioned is probably the best, whereas in

the smaller ones rubber dam or tissue give perfect satisfaction. Gauze alone should not be used for the reasons already stated.

Carbuncles are best treated by complete excision. The following treatment is also used with very good results. Multiple incisions are made in the carbuncle in the manner you would cut a pie, then the knife is run around under the skin flaps; in this manner all the small pockets of pus are opened. Then for twenty-four hours use a gauze packing saturated with Chlumsky's solution packed under the skin flaps, to hasten the breaking down of the infected area. On removal of the packing a rubber drain is to be used. Of course, here also wet dressings should be applied.

SUMMARY.

I. Treatment of fresh wounds.

A. Incised wounds: 1. Paint with iodine. 2. Shave dry. 3. Tie all bleeding points. 4. Removal of foreign substances. 5. Suture all tendons and nerves. 6. Again apply iodine in and around the wound. 7. Suture wound. 8. Apply dry sterile dressing.

B. Lacerated wounds: 1, 2, 3, 4, 5, same as A. 6. Cut away all damaged tissue. 7. Again apply iodine. 8. Suture wound.

C. Punctured wounds: 1, 2, same as A. 3. Enlarge opening for drainage. 4. Insert rubber drain. 5. Alcohol dressing. 6. Tetanus antitoxin.

D. Gunshot or bullet wounds: 1, 2, same as in A. 3. If great amount of bleeding enlarge opening and tie bleeding vessels. 4. If nerve is injured suture nerve. 5. Close wound. 6. Apply an alcohol dressing. 7. If neither 3 or 4 have occurred, all that is necessary after doing 1 and 2 is to apply alcohol dressing. 8. Tetanus antitoxin.

II. Treatment of infections.

Class A. Inflammations with slight amount of exudation of serum characterized by redness, heat, swelling, pain and loss of function: 1. Rest. 2. Elevation. 3. Hot wet dressing.

Class B. Inflammations with a great amount of exudation of serum with slight tendency to necrosis: 1. Incision. 2. Place gauze in wound saturated with Chlumsky's solution. 3. Apply wet dressing; keep wet. 4. Remove gauze in twenty-four hours. 5. Insert rubber drain. 6. Application of wet dressing.

Class C. Inflammations with marked necrosis: 1. Incision. 2. Drainage. 3. Wet dressing. 4. After inflammation has receded use Durante's solution. 5. Dry dressing.

SOLUTIONS FOR DRESSING WOUNDS.

Durante's solution: Iodine, one part; potassium iodide, ten parts; guaiacol, five parts; glycerin, to make 100 parts.

Chlumsky's solution: Camphor, sixty parts; phenol, thirty parts; alcohol, ten parts.

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316 West Ninety-fifth Street.

FUNCTIONAL LEUCORRHEA.

By W. Allan, M. D.,
Charlotte, N. C.,
and T. H. Wright, M. D.,
Charlotte.

Leucorrhea is very common, but it is not often the presenting symptom unless the flow is excessive. When leucorrhea is the presenting symptom, the case is generally referred to a gynecologist, because the subject is dealt with only in gynecological textbooks. It seems to us that in a majority of cases leucorrhea is a minor medical symptom and that these cases have no more place in gynecology than have cases of bronchorrhea or diarrhea.

Out of the twenty odd causes of leucorrhea given by Ashton (1), practically all are local, except his classification of leucorrhea due to constitutional endometritis. His definition of constitutional endometritis is: "A nonspecific inflammation of the corporeal endometrium that is always subacute or chronic in character, and which is primarily due to constitutional causes." He gives as the chief causes, tuberculosis, anemia, scrofula, gout, rheumatism, cholemia, lithemia, and chlorosis.

We submit that among these causes only scrofula, tuberculosis, and rheumatism (if rheumatic fever is intended) are infectious and accompanied by infection, and that the leucorrhea accompanying tuberculosis, for instance, is not due to a "nonspecific inflammation of the corporeal endometrium," nor to an inflammation of the corporeal endometrium of any sort. Ashton's other causes, anemia, chlorosis, etc., are noninflammatory diseases and we see no reason to believe that there is any subacute or chronic inflammation of the corporeal endometrium in these constitutional conditions.

Kelly (2) says: "A true endometritis is an inflammatory affection of the endometrium, due to the gonococcus, to other pyogenic infecting organisms, or to the tubercle bacillus. A variety of changes in the endometrium, however, characterized by a hyperplasia and dilatation of the glands, are included under the head of endometritis which do not properly and in a strict sense belong there." Exclusive of tuberculous endometritis, Kelly found definite inflammatory changes in the endometrium only forty-nine times in 1,800 cases. He further says: "It is safe to say that in ninety-nine out of one hundred cases when a physician curettes the uterus for endometritis and removes more or less endometrium, no real endometritis in the sense of a chronic inflammatory affection, is present."

P. Brooke Bland, in *Keen's Surgery* (3), gives the following description of the causes of leucorrhea: "The general causes are conditions that lower the normal state of health of the individual, such as poor nutrition, overwork, unsanitary surroundings, improper application of wearing apparel, and indifference to hygienic principles."

There appears in nearly all textbooks on gynecology a uniform description of the several endometrial changes under the headings of hypertrophic and atrophic, or glandular and interstitial endometritis: this classification agrees entirely with that given by such well known morphological pathologists as Stengel (4).

The whole subject of the pathology of endometritis, and consequently of leucorrhea, has been illuminated by the recent work of Gardner and Novak (5), who have confirmed in the main the earlier work of Hitschmann and Adler (6); these authors have shown from a study of uterine scrapings taken serially throughout the complete menstrual cycle, that what was formerly described as endometritis glandularis is really the normal histological appearance of the premenstrual period, and their photomicrographs of the premenstrual endometrium are identical with Stengel's illustrations of glandular endometritis. Gardner and Novak have further shown that this picture of glandular hypertrophy may be found at other times in the menstrual cycle whenever a lesion causing endometrial congestion, such as a lacerated cervix or pus tube, is present. Their view of the effect of hyperemia on the endometrium is best presented by citing a paragraph from their article.

The fact that premenstrual changes are found at a period so remote from the menstrual epoch, as in these cases, might perhaps be explained on the assumption of an individual peculiarity—as perhaps indicating an unusually early appearance of the glandular changes of the premenstrual period. This seems to us, however, as little more than an evasion of the question, and we feel that a simpler and more plausible explanation can be invoked. In view of the fact that the menstrual process, whatever its underlying cause may be, has as its most striking phenomenon the vascular changes in the reproductive organs, it is not unreasonable to assume that the constantly changing histologic picture in the endometrium is only a result of the influence of the increased blood supply on a very susceptible and readily reacting tissue. The interesting experiments of Federn (*Blutdruck und Darmanatomie*, Vienna, 1894), and others have shown that the blood pressure of a woman reaches its maximum at the premenstrual period, the onset of menstruation being characterized by a rapid fall, after which the pressure rises gradually again to its high point at the next premenstrual period. The blood pressure curve is therefore parallel with the histologic changes, and it is only natural to suppose that the latter may be largely influenced by the variations in the blood supply of the pelvic organs at different phases of the menstrual cycle. It seems logical to believe, however, that while the normal physiologic stimulus for the hypertrophy of the uterine glands is supplied by the hyperemia of the menstrual process, the artificial stimulus furnished by a pathologic hyperemia may also produce a greater or less degree of such change.

Considering the foregoing literature, we see that Ashton holds endometritis to be inflammatory, Bland avoids the issue, while Kelly eliminates inflammation in thirty-five out of every thirty-six cases in which uterine scrapings were examined. Gardner and Novak side with Kelly, finding no inflammation ordinarily; but they further find that the changes described as endometritis are due to hyperemia, either physiological at the menstrual period, or pathological from some local lesion. What has been said concerning the pathology of endometritis, we believe, applies equally to its by product, leucorrhea.

If it has been demonstrated, therefore, that in the absence of pyogenic infection, leucorrhea is a vasomotor phenomenon due to endometrial hyperemia, it remains to be proved, first, that such hyperemia is present in our cases, and, second, that such hyperemia is not due to organic lesions, either in the pelvis or elsewhere, before a leucorrhea may be considered functional.

That pelvic hyperemia is present in these cases is shown by the presence of low blood pressure, by the subjective sensation that the bottom is falling out of the abdomen when these women stand on their feet, and by the constant association of menorrhagia. In discussing menorrhagia, the authorities are united in giving hyperemia, either from local or general causes, as its essential pathology.

That pelvic hyperemia in these cases is not due to organic lesions, either in the pelvis or elsewhere, is shown by a negative physical examination, by the fact that this symptom frequently occurs in young virgins, and by the fact that a gain in weight with improvement in muscular tone and a rise in general systolic blood pressure will cause the disappearance of the leucorrhea.

The second part of our contention, that this functional leucorrhea is merely one phase of a general functional depression, will be demonstrated by case histories, which without exception show some of the signs of overstrain, such as headache, insomnia, early muscular and mental fatigue, anorexia, functional fever (7), loss of weight, low blood pressure, morning edema, etc.

Case I. White, female, aged twenty-four years, married, housewife, complained of constipation, menorrhagia, and headache, with constant backache and leucorrhea. Off weight 15 pounds. Diet of 24 calories a kilo. *Physical examination:* Blood, urine, and feces negative; systolic blood pressure 100 mm. Hg.; very little work and no exercise. Was placed on increased diet with systematic exercise and gained 20 pounds in weight with a rise in systolic blood pressure to 115 mm. Hg. The leucorrhea disappeared. At times in the summer there is a recurrence of the leucorrhea, which is relieved by sending the patient on a vacation.

Case II. White, female, aged twenty-six years, single, stenographer, complained of headache, backache, exhaustion, menorrhagia with menses lasting 7 days and occurring every 21 days, with constant leucorrhea, which was worse at the menstrual period. Off weight 13 pounds, systolic pressure 108, diet of 30 calories a kilo, no exercise with excessive work. Put on a 40 calorie a kilo diet, with 9 hours rest in every 24, and systematic exercise; gained 14 pounds, blood pressure rose to 115, with shortening of the menses to 5 days, occurring only every 28 days. The headache, backache, and leucorrhea disappeared entirely.

Case III. White, female, aged twenty years, single, social duties; since the age of thirteen years the menstrual period had gradually lengthened to 10 days with leucorrhea gradually increasing until she had to wear a guard for a week every month simply for this discharge. Weight 90 pounds. Backache and knee ache were constant symptoms when first seen. Diet, 26 calories a kilo. Later chronic daily headache became the leading symptom, with pronounced insomnia. During the past 4 years under regulation of diet and exercise, 10 hours' rest a day, and partial elimination of social duties there was a gain of 40 pounds in weight, rise in systolic pressure to 125 mm. Hg., with disappearance of backache and knee ache. Headache occurred only about twice a year after some unusual exertion. The leucorrhea was the last symptom to disappear.

In these cases no local treatment was used and, above all, curettage was avoided. We conclude, therefore, that in these cases the leucorrhea was purely functional, and that it was only one phase of a general functional depression.

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1207, 1208 Realty Building.

INTESTINAL KINKS; THEIR DIAGNOSIS AND TREATMENT.*

By Irving S. Haynes, Ph. B., M. D.,
New York,
Professor of Applied Anatomy and Clinical Surgery, Cornell University Medical College, New York; Visiting Surgeon, Harlem and Red Cross Hospitals, etc.

(Concluded from page 61.)

TREATMENT.

The treatment of the intestinal kinks and constrictions due to bands, adhesions, membranes, and angulations must be surgical. The treatment of the symptoms may be medical, in the earlier stages before the marked evidences of intestinal toxemia have appeared.

Medical treatment will consist of diet, exercises, massage, and some few drugs, all efforts being directed to overcoming the beginning intestinal stasis and its baleful effects.

Diet: This should be almost meat free. Chicken and fresh fish may be allowed if the motility of the bowels is not badly impaired. The chief sustenance will be found in fresh vegetables of all kinds that are cooked. Fruits are good if they can be baked or stewed. Some, as oranges, may be taken for the juice, but the pulp is rejected. All kinds of cereals and all forms of dry and hard rolls and bread should be used. No fresh bread should be eaten. Milk in the form of buttermilk should be used, but fresh milk commonly creates indigestion. Fermented milk is also very useful. Butter, fats, olive oil may be eaten freely. All kinds of fluids should be taken, especially water in large quantities.

Drugs: In reference to drugs, I have little to say. Some of the simple digestive preparations, laxatives and antifermentatives may be used with advantage. The cases that have come to me, however, have usually been under medical treatment for a long time and seek relief, not an additional course in drugs. White liquid petrolatum, so enthusiastically advocated by Lane, has, in my experience, been a great disappointment; so much so that I have almost discontinued its use. Patients cannot or will not take it for any great length of time without such a disgust being created against it as to make it almost impossible for them to swallow it. Others get so that even if taken, it repels to such an extent and for such a long period of time that they will not or cannot go on with its use. Others have secured a fairly regular evacuation of the bowels, but the "drip," as Lane says, has been so annoying that they gave up taking the medicine. It has occurred to me that possibly there may be a useful substitute for the white liquid paraffin in solid petrolatum taken in capsule form. I have not tried this yet, but intend to as soon as convenient.

Surgical treatment. Preparatory: No meat should be eaten for two days preceding the operation. A brisk saline cathartic should be given twenty-four hours before the operation. A high soap suds enema should be given the night before, and if not effectual it should be repeated. For the same time water, broths, soups in large quantities should be systematically given to the patient.

The night before the operation the skin should be washed in green soap, shaved, sponged with alcohol and a sterile dressing applied. Iodine may or may not be used. I do not care for its application at this time.

At the time of the operation, gas-ether vapor anesthesia is preferred. If nervous, the patient should have morphine, one sixth to one fourth grain, with a small amount, 1/150 to 1/100 grain, of atropine added. The skin is prepared by painting with tincture of iodine, 3.5 per cent.

The skin incision: This will vary with the region to be exposed. With the usual colonic veils, the incision of choice, in males and young females, is in the "line of the twelfth nerve," meaning by that an incision in the approximate course of the twelfth nerve, as located by an imaginary line from just below the tip of the twelfth rib to the spine of the opposite pubes. This incision is from three to four inches long, two thirds being to the outside of the linea semilunaris, and the inner one third then lies over the rectus muscle.

The fibres of the external oblique are separated up to the linea semilunaris. This line is then cut through, exposing the rectus, and the peritoneum reached by separating the fibres of the two inner muscles. This is a muscular separation with this advantage, no nerves are divided and the pelvis may be reached by retracting the rectus to the inside. More room may be obtained by splitting the fascia of the sheath of the rectus in line with its fibres, even to the linea alba. I have never had occasion to do this. Another advantage is that the hepatic flexure can likewise be reached with ease and extensive repair in this region completed. When sutured in two layers, one for the internal oblique and transversalis and the other for the external oblique, the effect is that of an intramuscular incision. If it is found necessary to retract the rectus strongly to the inside, it will be best to ligate the deep epigastric vessels and divide them. Strong traction may tear them and cause very troublesome hemorrhage.

In the female, with a pelvic complication, the incision is at the right of the linea alba and from one to one and a half inch distant. The skin and sheath of the rectus and later the peritoneum are divided in this line, the rectus retracted to the outside, and the peritoneum opened in the same direction. This gives in both incisions reinforcement by the interposition of muscular fibres, and hernia will not follow. Suturing is done with 0 gut plain, doubled for the peritoneum; No. 2 plain for the muscles; and 0 gut or thin Pagenstecher for the skin. A subcuticular is preferred with the finer gut.

Adhesions, membranes, etc.: These have been treated, practically, in the same manner in all cases. The parietal attachment has been ligated and severed. The intestinal attachment has not been ligated, but pulled apart so as to free the cramped intestine; all bleding points have been ligated separately. Hot sponges check most of this bleeding. The intestine is then freed from all puckers and constrictions. This is not possible when the membrane is tied off close to the gut and then divided. Search must be made for a band deep in the angle of the hepatic flexure; when present it is severed. Adhesions between the ascending and transverse

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colon are severed. No attempt has been made to cover the apparently denuded surface of the intestine, because close inspection will show that such denudation is only apparent and that the true peritoneal coat of the bowel is still in evidence beneath the adhesions or veils. If any subsequent attachments should form between the intestine involved and other parts, I believe that they will not be permanent because the cause has been removed. I have no reason thus far to regret my decision.

I have never used systematically the various oils, membranes, dusting powders, gas, saline solutions, etc., which have from time to time been recommended by various enthusiastic advocates of the different methods for the prevention of adhesions. I have used them all, except gas, at times; I do not think with any detriment, and I am equally uncertain if with any advantage. In the cases here reported I relied simply upon trying to remove what seemed to me the focus of infection, if present, and the visible effects of such infection with as little traumatism as possible, doing a speedy, clean operation, and then following out a rational after-treatment.

Postoperative treatment. Every patient was placed in the high Trendelenberg position. From one to two quarts of hot normal saline solution was then slowly injected into the bowel before the patient regained consciousness. Saline injections of a pint or less then were given every four hours for the first twenty-four hours, sometimes for thirty-six hours. Morphine, from one eighth to one sixth grain, with eserine salicylate, one sixtieth to one fortieth grain was given, when necessary, usually not more than once; gastric lavage if necessary. When the stomach was settled water was given freely. The bed was put down about the fifth to the seventh day. The patient was allowed to sit up in bed from the ninth to the twelfth day, and most of them were out of bed by the end of the second week.

RESULTS.

Of twenty-one cases operated in, eighteen cases were cured; three cases were improved; one case was not operated in. One noticeable thing is that the worse the pathological state often the better the result, both temporary and permanent. Those cases in which it was a question whether ileosigmoidostomy should be done in preference to plastic work on the cecum, ascending colon and hepatic flexure all did so well that I deemed it necessary to do this operation in but one instance, where adhesions were so extensive, thick, and the intestinal outlines so obliterated that I feared my ability to sever the adhesions with sufficient thoroughness to release the bowel without actually incising it. The more severe operation has been followed by a perfect cure.

The patients which have been improved: One was better than before the operation, yet she has considerable "backache," which may have nothing to do with the abdominal condition. She had not reported for examination in several months. She reported December 15th that she was cured. Another is a frail little woman, living under constant nervous strain, who cannot carry out the simplest line of treatment. A third, a young man, is, I think, well; however, when last seen he had symptoms of catarrhal colitis, and as I have not seen him since, he may be entirely well. I have classed him as improved.

The operative results are gratifying and are permanent. Of course, relapses may occur from a number of causes that acted in the first instance, so that secondary stasis, infection, and membranous formation might be the result. I do not know of such instances. What the future may bring forth is problematical.

ILLUSTRATIVE CASES.

Case I. Extreme symptoms from intestinal stasis due to a kink at the sigmoid flexure.

Mrs. L. H. J., aged thirty-eight years. Admitted November 5, 1907. As a result of child birth she sustained a laceration of the perineum and cervix. In 1898, she was operated upon for this condition. The perineum held, but the cervix did not. Later she was operated upon for a second repair of the cervix. Her symptoms were not relieved, and in 1900 the uterus was suspended through an abdominal incision, the other organs were not touched. In 1906 the abdomen was reopened and the left tube and ovary and the appendix were removed.

On admission she was a thin, anemic, nervous wreck. She had been in a sanitarium for a year because she seemed "queer." The bowels had been constipated since the first operation. Had headaches, backache, and general weakness. She was tender on bimanual examination over the left side and the right ovary was enlarged and sensitive. She wished relief.

November 17, 1907, fifth operation. Left rectus incision. Uterus enlarged and attached to abdominal wall by ligament one half inch by one and one half inch. Left ovary and tube had been removed *en masse* leaving a stump which was attached to the sigmoid, producing a marked kink. Cicatricial mass removed and gut liberated. Peritoneum whipped over to leave smooth surface. Right cystic ovary removed with smooth suturing of peritoneum. Abnormal artificial ligament of uterus severed and raw surfaces overcast. The patient made an uncomplicated convalescence. Full recovery in the mental state did not ensue for several months, but the general bodily condition began to improve from the first. She was perfectly normal and well in all respects in 1911, and had gained thirty or forty pounds in weight.

Case II. Kink at splenic flexure.

G. W. P., male, aged seventy years. September 19, 1911. I was called primarily to attend patient in an attack of shingles. It soon became apparent that he was suffering very much from constipation of a slowly increasing type, requiring gradually increased doses of cathartics, until at that time the bowels were moved only by large doses of salts and soap enemas. He stated that six or seven years ago he was very sick with chills, fever, and sweats that lasted several weeks. There was severe pain in the left flank and his physician said there was an abscess in that region. One day under strong manipulation by the doctor this mass suddenly disappeared with a sharp pain and shortly after the patient passed a large quantity of pus by rectum. After this there was a slow and gradual return to health. He had been very well in the interval, and had suffered no especial trouble with the bowels. Last August, while attempting to launch a rather heavy boat, his foot slipped and he fell heavily across the gunwale of the boat striking his left side just below the short ribs. He had to go to bed for a short time but seemed to recover fairly well. There was considerable soreness in that left side, with more or less pain, depending upon the presence of gas, and with gradually increasing constipation. Examination revealed a strongly built muscular man, fairly fleshy. Nothing (excepting shingles) noted in the region of left side. The herpetic eruption extended from the spine around to the midline, on the left side, and covered the course of the last four thoracic nerves. It was a very severe attack but gradually yielded. However, although the herpes improved the intraabdominal condition did not. The pain over the outside of the chest and abdomen was so severe at first as to mask that from within. As the superficial pain diminished the internal pain seemed to grow more pronounced. It was increased by the indigestion from which he suffered and was attended with much gas, belched and expelled per rectum. Physical examina-

tion revealed nothing except an indefinite tenderness up under the left costal margin.

There was no abdominal distention, no mass, no cachexia.

Diagnosis, intraabdominal adhesion in the region of the splenic flexure due probably to the previous inflammatory attack and aggravated by the recent injury.

He was x rayed by Doctor Cole, who reported, under date of October 2, 1911: "There was very strong evidence of some lesion in the left flank just above the crest of the ilium which caused the transverse colon, the descending colon, and possibly a long loop of the sigmoid to be, apparently, matted together. There was probably a pathological lesion, probably adhesions, in the left flank about an inch above the level of the umbilicus."

Operation: An operation at the Red Cross Hospital soon after this showed conclusively the value of Doctor Cole's observations, also the fact that intestinal symptoms usually have some definite pathology as their cause. I found the colon looped and welded together by adhesions, rather thin but broad, to make a large letter "M" as Doctor Cole stated he thought was present. Simple division of all these bands allowed the colon to straighten out.

Convalescence, at first uneventful, was later stormy from double bronchopneumonia. However, he fully recovered and was in June, 1913, enjoying perfect health. Weight 172 pounds.

Case III. Kink in the first part of the duodenum.

Mrs. T. B., aged forty years. Patient referred by Dr. J. J. Tierney. Seven years ago patient was operated upon for gallstones. For past six months had had indigestion, gas eructations, vomiting and pain. The pain was felt in the upper part of the abdomen. She had been unable to take solid food for the past few months; if she did she vomited soon afterward. She had lost thirty pounds in a short time and was very pale and anemic, almost cachectic.

Examination: There was no palpable mass, no blood in vomitus or stool. There was a large postoperative hernia from the former operation, but this hardly seemed sufficient cause for all her symptoms.

Diagnosis, pyloric stenosis due to adhesions or possibly a new growth. Postoperative ventral hernia.

Operated at the Red Cross Hospital, October 25, 1911. The old scar was excised and the field inspected. The omentum was adherent over the inner surface of the hernia to the first part of the duodenum and to the under surface of the liver at the place from which the gallbladder had been removed. An angulation and constriction had been caused by these adhesions in the first part of the duodenum producing the obstructive symptoms. There was no growth, the pancreas was normal, the stomach was full but not pathologically distended. After dealing with the adhesions the adherent omentum was excised and the postoperative hernia treated by the method of "inversion" I have advocated.

Convalescence was uneventful. The patient sat up on October 28th, was allowed out of bed on November 10th, and went home on November 26th. The wound healed by primary union.

April 18, 1913, patient was in perfect health. She had regained all the lost weight. The scar was firm. There were no stomach symptoms.

Case IV. Lane's kink and colonic veils.

Mr. E. B. C., clerk, aged twenty-two years. Admitted December 23, 1911. Four years previously the patient was operated upon for appendicitis. The appendix was found kinked. He had had four attacks of appendicitis in the previous two years. With each attack he had been sick from ten days to two weeks. He had always been constipated ever since he could remember. His constipation was just as bad or worse since the operation. He had gone from five to six days without the bowels acting. He had more or less distress every day but was not actually sick in bed, though about once or twice a week he had a very severe attack of cramps. The most of the pain and distress was situated around the umbilicus. He was not losing weight. Examination was negative as regards the abdomen except for a tender spot close to McBurney's point. January 24, 1912. Patient had had slight pain most of the time since the foregoing visit, with four quite severe attacks, the last one last night. This began at 11 p. m. and continued until 6 a. m. He was awake all night. The pain extended from the umbilicus downward into the right iliac fossa. His bowels had not moved for three days. He was given calomel in divided doses followed by a saline.

A diagnosis was made of Lane's kink and colonic adhesions and he was referred to Dr. L. G. Cole for x ray plates after proper preparation. Radiographs were made immediately after the bismuth had been given and at intervals of six, twenty-four, and forty-eight hours after.

There was a marked obstruction to the progress of ingestion in the right iliac fossa, which involved the small intestine, cecum, and ascending colon. The outlines obtained were suggestive of a Lane's kink, but I did not feel justified in committing myself to this diagnosis unless there was strong clinical evidence in favor of such a diagnosis. February 22, 1912, admitted to the Red Cross Hospital. On the following day he was operated upon. An incision, four inches long, was made in the line of the twelfth nerve, the inner third of the incision being over the right rectus muscle. The external oblique was split along this line, the internal oblique and transversalis separated in the direction of their fibres beginning at the linea semilunaris, the rectus was drawn to the inside. This gave a wide exposure of the field. The ascending colon and cecum were found covered by old, dense, and thick membranous adhesions. There was a very sharp Lane's kink with a reduction of the calibre of the bowel to about one third of the normal size. After dividing the plate of peritoneum which passed from the ileocolic omentum over the ileum and down into the pelvis, the lower surface of the ileum was left for nearly two inches devoid of peritoneum. This was covered in by loosening the peritoneum through the (practically) transverse incision and closing it in a vertical manner. The colonic veils were dealt with after the plan described in the paper.

The patient was maintained in a high Trendelenberg position for a week. Primary union occurred in the wound. He was out of bed on March 5th and left the hospital on the 13th. March 22, 1912. Reported that his bowels were operating spontaneously twice a day for the first time in his memory. Under date of June 6th, writing from Chicago, where he removed soon after the operation, he says: "I think that you have made a perfect cure." September, 1913. Perfectly well. Bowels acted regularly.

Case V. Angulated appendix. *Colonic veils in process of formation.*

C. T. A., aged twenty-seven years, clerk, weight 130 pounds. Patient of Dr. W. J. Jones. Admitted February 9, 1912. Chief complaint, several attacks of pain in the lower right abdominal region. Bowels had always been very irregular. He had always had great trouble to obtain an evacuation. May 1, 1911. The first attack of pain occurred in the right lower quadrant of the abdomen. The attack began suddenly. The pain became worse after six or seven hours. He was nauseated but did not vomit. The attack lasted two days. He had had six similar attacks since then. In one attack the pain was centred more about the umbilicus. One year before these attacks began he was struck below the umbilicus by a base ball, but not very hard.

Examination: He was slightly tender over the region of the appendix. Diagnosis, appendicular colic due probably to a kink in the appendix.

Operation: At the Red Cross Hospital, March 7, 1912. Oblique gridiron incision over McBurney's point. Abdomen opened. A most unusual and interesting condition was exposed, viz., colonic veils in process of formation. The cecum and ascending colon were covered by a very delicate filmy veil beneath which was a turbid serous exudate apparently about a quarter of an inch in depth over the intestine to considerably more than this in the region of the appendix at the base of the cecum. This filmy covering with its layer of fluid beneath it extended upward toward the upper part of the ascending colon and there terminated, the layer of fluid gradually thinning out toward the upper part of the veil. Here was a beautiful demonstration of colonic veils, and also peritoneal adhesions in process of formation. When the thin covering layer was pierced by a ligature passer the turbid serum flowed away. The veil was treated according to the method described in another part of the paper. The appendix was found flexed on itself so as to form a small mass like ones little finger firmly flexed, and it was covered over with new membrane. It was liberated and removed. The wound healed by primary union.

Left hospital on March 23, 1913. Reported in May that

his bowels had been regular every morning, and that he had been perfectly well.

Case VI. Extensive colonic membrane. Hepatic angulation.

Miss E. S., aged twenty-one years. Patient of Dr. J. A. Boyle. Admitted March 8, 1912. For the past six years had "had pain along her right side." She was operated for appendicitis at one of the larger city hospitals in 1905. She was told that there was "no appendix there." Ever since the operation she had had trouble after eating. Pains across the upper abdomen, raised gas, was very constipated. Her menses were irregular and lasted only two days. She had had some pain which was mostly on the left side.

Examination: Right kidney prolapsed to the second degree. She was tender all along the ascending colon. Diagnosis, slightly movable kidney, colonic veils, no Lane's kink. She entered the Red Cross Hospital, March 12, 1912. Operation on the 13th: Incision along the course of the twelfth spinal nerve, beginning at the margin of the erector spinæ muscle. Kidney exposed, capsule split and sutured to the deep muscles by three No. 2 plain gut sutures. Wound closed in layers with plain gut. Second incision over McBurney's point in a line with the fibres of the external oblique. Muscles separated along course of fibres. Extensive membranous adhesions covering the hepatic flexure and ascending colon, binding the colon to the lateral abdominal wall and angulating and compressing the hepatic flexure. The omentum was adherent to the base of the cecum, where the appendix had been, and along the front of the colon for two inches. The pelvic organs were normal. There was no Lane's kink. All these adhesions were tied off as already described and no attempt was made to cover the extensive bared surface of the colon. She was put to bed with the foot elevated on the high blocks. Wounds healed *per primam*. She sat up on the 24th, was out of bed on the 28th, and left the hospital on the 30th. May 18th, menses passed off easier than before. Wounds firmly healed. Bowels were not acting right but the patient had not been eating proper food. Full directions given and patient allowed to go to work, but not at her previous occupation, that of a machine operator. She looked very much better.

Case VII. Intestinal obstruction at hepatic flexure from dense and extensive membrane. "Double barreled colon."

Mrs. A., aged sixty-five years. Admitted July, 1912. Referred by Doctor Severance, of Keeseville, N. Y. The patient had suffered for a long time, with abdominal symptoms. Had been in bed for the past two or three months from abdominal distress, inability to take nourishment, and weakness.

I was called in consultation with the expectation of finding some intestinal cancer, and found a woman, pale, skin muddy, flabby, as if she had lost much flesh very recently, with furred tongue. Her chief symptoms were obstinate constipation which was steadily growing worse so that several inections were necessary to empty the bowels; distress and actual pain in the right half of the abdomen; indigestion with great quantities of gas, nausea at times and more recently vomiting at irregular times. A physical examination was negative except to show that there were no palpable masses anywhere, that the pelvic and thoracic organs were normal, but that there was a general laxity and flabbiness of the abdominal muscles with marked tenderness over the cecum and ascending colon.

A week was taken thoroughly to evacuate the bowels by saline cathartics and high enemas. Nothing was discovered at the second examination, but the difficulty of emptying the bowels was increasing. An exploratory operation was advised with the idea that the obstruction might be an annular carcinoma too small to be palpated, or that a milder form of obstruction existed. The operation disclosed a typical double barreled state due to extensive and dense adhesions firmly binding together the ascending colon and the first half of the transverse colon. There was also a thick band disclosed after separating the two portions of the colon, passing over the hepatic flexure dragging it firmly up beneath the liver and reducing its calibre to a small fraction of the normal. All the bands were divided, with the result that the hepatic flexure immediately ballooned up. No raw surfaces were left of any account. The appendix was removed, but it was atrophic and in no way concerned in the process. The gallbladder and pelvic organs were normal.

The patient was put to bed in the high Trendelenberg and two quarts of saline solution were injected before she became conscious. Recovery was slow but satisfactory. Primary union in the wound.

Under date of September 30, 1913, Doctor Severance wrote me: "Mrs. A. made a satisfactory recovery, has had no recurrence of abdominal symptoms, in good health for one of her years. Gained several pounds in weight, a good appetite and but *very little* constipation. In short she had come out wonderfully well."

Case VIII. Obstinate intestinal stasis from extensive colonic membranes. Angulation at hepatic flexure.

M. L., aged twenty-eight years. Admitted December 26, 1912. Discharged February 2, 1913. In 1909 operated upon and appendix and left ovary removed. In November, 1911, operated for cervical glands. Periods had been regular.

Present attack. Said to be due to a fall she had in July, 1912, when she hurt her left chest and "wrenched herself." For past three weeks has had pain in lower right quadrant of abdomen. Been nauseated at times but never vomited.

Constipation obstinate. Indigestion, gas, belching.

Examination: Scars over lower right abdomen. Tender to pressure. Seemed to be a mass in right lower part made out by abdominal and vaginal examination. She was kept under treatment and observation for two weeks and numerous x ray plates taken. They showed a tremendous slowing of fecal current after leaving cecum, taking three times normal time to reach sigmoid.

Diagnosis, intestinal stasis from colonic adhesions.

Operation: Entire right side of abdomen full of adhesions. Uterus absent. Part of right ovary present. Appendix gone. Extensive colonic veils and adhesions producing extreme angulation at hepatic flexure with dense band crossing gut at angle. The ileum was divided three inches from the ileocecal valve and the end inverted into cecum and closed with running suture. End of intestine inverted and overcast. Lateral anastomosis between ileum and lower sigmoid with long opening. Patient had uneventful recovery. Bowels were assisted to move on the second day after the operation and had moved twice or three times ever since.

June. Had gained in weight and never felt better, claimed she was perfectly well. Bowels acted once or twice a day. No diarrhea.

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107 West Eighty-fifth Street.

PERIODIC EXPLOSIVE TOXEMIAS.

By Burril B. Crohn, M. D.,
New York.

As periodic explosive toxemias, I purpose to discuss a group of cases, more or less allied by common features. The cases are marked by alternate free intervals and sudden acute paroxysms; the latter being characterized by the violent nature of the symptoms when established. The entire class attracts further attention because it bears the earmarks of a gradually increasing intoxication relieved by the paroxysm, and followed by a period of immunity to the irritating etiological factor. Four types of cases form the foundation for the

correlation into this group; each type is represented by one case.

Case I. Mrs. M. B., aged fifty-six years, a mild tempered and quiet woman, suffered from what had been regarded as migraine for forty-four years. During her childhood she was well except for the ordinary diseases. Beginning with the onset of puberty and menstruation, she had been subject to the following cycle: During an interval varying from two to six weeks, she was in fair health, active mentally and physically, appetite good, bowels mildly constipated, during latter years markedly so. From time to time she felt a mild headache, lasting from a few hours to a day, and accompanied by slight languor which passed off, and left her free of complaints. Then suddenly, usually at night, or in the midst of a sound sleep, she would be awakened by a most violent headache, occupying the occipital and parietal regions on both sides, described by her as sharp and piercing and of the most excruciating nature, accompanied by vomiting, which was almost continuous, of water, biliary material, and mucus. The patient lay in a condition of the most pronounced prostration, barely able to speak, moaning, and holding her head. Her color was a pronounced pallor, blanched. The physical examination was noteworthy only for the cardiovascular symptoms. The pulse was slow, thirty to forty regular beats to the minute, full, and of good force and tension. The radial artery was thickened, the blood pressure, 120 to 130. Heart examination showed the borders in their normal position; a slight systolic murmur present at the apex, not transmitted; accentuation of the second sound at the base; aorta somewhat dilated, and just palpable in the interclavicular notch; reflexes present and normal. The abdomen, except for slight general distention, was negative.

The paroxysm persisted during the first twenty-four hours without abatement. During the next day there was slight diminution of all the symptoms. On the third day considerable relief was evident; patient was weak and languid, but awake, able to converse. The headache disappeared gradually during the day, being the last symptom except the slow pulse, to pass away. At no time were there any of the typical ocular symptoms of migraine.

Following the paroxysm, there was a long period of immunity from headaches, lasting from two to three weeks. During this interval the pulse rapidly became normal in rate, blood pressure unchanged, systolic murmur at the apex persisting. In the course of this so called free interval there were a few mild headaches from time to time; but the severe headache was never a continuation of a milder one, but always an independent outbreak. Urinary examinations were devoid of interest; nothing abnormal noted. A slight amount of indican appeared from time to time, but bore no proportional relationship to the violence of the symptoms. Acetone occurred only in small quantities during the vomiting spell, and then not on the first day, indicating that the phenomenon was a starvation result rather than a cause.

In studying the etiology we are struck by the fact that this disturbance is, to a degree, a familiar one. The mother and sister both suffered from this disease. In the sister, the paroxysms began at puberty and gradually disappeared after the menopause. The son of this patient is also subject to severe periodic headaches, though unaccompanied by prostration and vomiting. The grandniece of the patient will be discussed separately.

In seeking a direct etiological factor, we are met by a paucity of evidence bearing on the causation of the phenomena. This patient has borne two healthy children; she has had no miscarriages. Menstruation bears absolutely no relationship; the menopause passed without any noticeable effect on the course of the syndrome. There is a fairly well marked myopic astigmatism; repeated examinations and adjustment of lenses, however, clear this organ of guilt as a causative factor. The cardiovascular phenomena appear only during the paroxysm, and appear to be effects rather than causes. The slow pulse and blanched cold skin occur after the onset of the syndrome, increasing as the symptoms increase, and remaining for a day after the headache and vomiting have entirely ceased.

The constipation is constant, though not severe, and is due to general atony of the intestine and abdominal wall. Brisk catharsis maintained throughout the entire free period does not affect the recurrence of the paroxysm. In former years this patient had been under the care of the late Doctor Forchheimer, of Cincinnati, who had carried out a course of rest cure and gastric lavage; all without avail. Drugs are entirely useless, except morphine during the attack. Diet has also no effect on the malady.

On the theory that this disease was an autointoxication of intestinal origin, I instituted colonic irrigation with salt solution, three times a week, using about two gallons for every treatment. Before the end of four weeks, the result was, as expressed by the patient herself, the first relief in forty years. A free interval lasting from two to three months followed; a few milder headaches but no acute attacks. A gradual return of all the symptoms again appeared following an interruption of observation.

Case II. A girl, aged nine years, a grandniece of the previous patient, suffered since infancy with recurrent violent headaches. This child was very bright mentally, physically well built and healthy looking, though somewhat nervous in temperament. She suffered habitually from constipation since birth, though easily relieved by cathartics. Physical examination of the child was negative. Her free intervals lasted about four weeks; her bowels moved as the result of a vegetable diet, and careful attention to hygienic habits. Without warning, the child would awake with severe frontoparietal headache, which lasted about one day. There was no vomiting nor marked prostration; no vascular nor ocular phenomena present. The urine was negative. This patient did not come under my treatment. Hers resembles (in a form attenuated by two generations) the disease of her predecessor.

Case III. R. H., male baby, about two and a half years old, of normal birth and delivery. Both parents had always been healthy and well; the mother had had no miscarriages. The child had been artificially fed since birth, showing its physical characteristics at their normal time. During this entire period he had been the subject of recurring periodical phenomena, occurring at widely irregular intervals, from a week or two to six months apart, characterized by extreme prostration to the point of unconsciousness, and continuous vomiting of watery and bilious material. It was questionable whether the child, if old enough, would have complained of headache. The paroxysms occurred without warning; lasted two or three days, and disappeared rapidly. During the attack, acetone appeared in quantity in the urine, to diminish soon thereafter. The condition of this child had been at times so serious as to threaten life. During the free interval we again noted a moderately severe constipation, amenable to cathartics, but defying dietary regulations. The abdominal examination was negtive; no abnormality of the large intestine discoverable. This child had been subjected to every conceivable modification of diet in an effort to ameliorate the symptoms, but without avail, among them, high fat and low fat, high proteid and low proteid. For six months colonic irrigations were essayed, but without result.

My advice to the mother of this child was to put him on a diet of vegetables, milk, and cereals and to reinstate the colonic irrigations. The course of this child was followed for only one month, during which time there was no attack.

Case IV represents a somewhat different type: Male child, aged five years, since birth the subject of sudden attacks of severe vomiting and prostration, associated with

jaundice and swelling of the liver. The child was well nourished and well developed, of healthy family. Physical examination was negative, except for slightly enlarged and palpable liver. Between paroxysms he was normal. The attacks occurred at intervals of a few months, and were characterized, as just mentioned, by vomiting of bilious fluid, containing mucus; marked prostration, the early advent of jaundice and hepatic enlargement. The paroxysm was sudden in its onset, lasting two or three days, with returns at irregular long intervals. The blood was normal, except for slight lymphocytosis. Stools after an attack showed scanty presence of bile and excess of indigested fat. Urine was that of an incompletely obstructive jaundice; large amounts of indican present.

In this case the child seemed to be gradually outgrowing the disease, the paroxysms becoming less frequent and less violent. The commercial extracts of pancreas seemed to afford some relief.

Except for the periodicity, the acute explosive nature of the paroxysms and the probable common toxic causative factor, there is no common symptom. Headache is common to two, vomiting to three. Case I resembles most closely typical migraine without the hemicranial feature, and the ocular manifestations of zigzag lights and forms. Case II is a recurring headache, a class of case not uncommon, and probably representing an attenuated form, of which Case I is the stronger contrast. Case III, that of the infant with his constipation and vomiting attacks and with profound prostration, is another subtype of the same variety. Case IV is again a variation of the same species, but the jaundice here brings in a new factor. Purely on theoretical grounds, I am led to believe that all these paroxysms are of common origin, namely, an intestinal intoxication situated, in the first three cases, in the lower part of the small intestine and the colon; in the last instance, in the duodenum and the upper small intestine. The success in Case I under colonic irrigation, in Case II with some flushing of the colon; in Case III on the proteid diet and of pancreatic extract, and Case IV point to the rationale of this deduction. Whether this disease is of an infectious nature, as asserted by Janeway and Mosenthal, in a study of a paroxysmal syndrome with recurring vomiting; whether it is an accumulated toxin due to incompletely oxidized material in the circulation, as stated by Howland and Richardson, or a disturbance of nitrogenous metabolism as evidenced by an increase in uric acid and purin body and creatinin excretion as quoted by Sedgwick, I am unable to say. The latter writer has noted brilliant results in the periodical vomiting of children after the removal of the adenoids. Nor should one dismiss the subject without a reference to the older theories of cerebral vasomotor paralysis or of vascular spasm due to nervous instability, or to the theory of Spitzer that the spasms are due to a congential narrowing of the foramen of Monro with periodical engorgement of the choroid plexus. Acidemia as a cause is no longer accepted; the acetonuria is now generally regarded as the effect rather than as the cause of the paroxysms.

But one may accept several of these theories as likely. It is essential, however, to look further than this evidence to find a fundamental cause for these cases as a group. And I am inclined to agree with those who have held it before, that the entire group represents a reaction to toxins gradually accumulating in the intestinal tract, due either to abnormal intestinal bacteria, or to ferment activity. The transition from the mild cases of intestinal autointoxication, characterized by languor and headache, to the group with periodical outbreaks of headache, vomiting, prostration and even jaundice is a gradual one; a transition of degree rather than of kind; the same case only in a different bed; the same fundamental pathology but, in the words of the evolutionist, "a variation from type in a single species."

41 West Eighty-third Street.

A NEW URETHROTOME.

By W. W. Bredin, M. D., C. M.,
Denver.

It must be readily admitted by all surgeons, and more especially by those who confine themselves to genitourinary work that there is not a single urethrotome today on the market which has in its construction the essentials which they so much desire. These essentials may be enumerated as follows: Simplicity of construction, as well as of application; an absolute safeguard against the possibility of making a false passage; absolute protection of the nonstrictured portion of the urethral wall; the accurate mapping out, as it were, of the strictured portion, outlining just what is to be cut as well as the necessary length and depth of the incision, while at the same time protecting the nonstrictured portion from unnecessary mutilation; applicability to all strictures, including those with a filiform entrance only, and to all parts where strictures are usually found; concealed knives with sufficient cutting calibre to readily make way for the passage of a No. 30 French sound, at least. The accompanying cut represents an instrument which seems to possess all these features. It consists practically of three parts: A main shaft in which the knife rod moves backward and forward, and a guide. The guide terminates in a No. 9 French catheter with a filiform tip. The bulbous end of the guide in which the knives are always concealed, except when in action, screws on to the

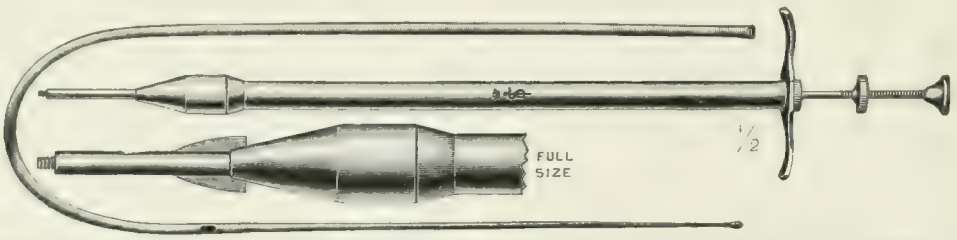


Fig.—Bredin's new urethrotome, half size, with end actual size and showing knives; surrounded by a filiform catheter. A set screw operated by the thumb sets free the knives.

main shaft. The knives operate through the grooved portion of the guide, which must pass through the stricture first. The knife rod works within the guide, and the knives cannot take any direction but straight through the strictured portion, and cannot penetrate any deeper than the distance they are allowed to protrude through the grooves. The filiform catheter leads the way and harmlessly doubles up within the bladder and the bulb follows until it meets the stricture. The detachable filiform catheter is first introduced into the bladder, when the presence of a few drops of urine gives positive evidence that no false passage has been made. The urethrotome can now be readily screwed on to the catheter and follows in the wake of the catheter until the bulb reaches the stricture. The stricture is now accurately mapped out in front of the bulb and the well portion crowded out of the way. The knives may then be pushed out, say one eighth or one fourth of an inch; the distance can be accurately measured by the set screw on the knife rod and then allowed to spring back, which they will do, being controlled by a strong spiral spring. The bulb is then pushed forward again and the knives are pushed out as before. Repeat these movements until all opposition is overcome and the bulb passes freely through.

It is applicable to all calibres and to all parts where strictures are usually found. It is easily taken apart for sterilization and a tyro can use it with safety, with no change of bulbs or tips. With this instrument the operation of internal urethrotomy is no longer a bungling uncertainty. The parts to be cut as well as the necessary depth and length of the incisions are mapped out with an accuracy hitherto unknown, eliminating all guess work and needless mutilation.

401 Wyoming Building.

THE INSTITUTIONAL TREATMENT OF DRUG ADDICTION.*

By C. J. Douglas, M. D.,
Boston.

The title of this communication might lead one to suppose that there were, in my opinion, other methods of treating drug addictions than those of an institution equipped for the purpose. I am thoroughly convinced, however, that the institutional method is the only rational one, and the only one that has proved sufficiently successful to be worthy of consideration. To be sure, a patient with unlimited means can employ a physician to remain in his house in constant attendance, assisted by trained nurses, and thus possibly accomplish something; but this means transforming his home into a sanatorium, so that he is receiving practically institutional treatment, although even then with some serious disadvantages. All will agree that ordinary home treatments are a delusion and a snare.

After twenty years' experience, I am prepared to say that there is no chronic disease known to medicine that is more surely curable than morphinism, and curable, too, without the suffering formerly supposed to be necessary. The methods employed in various institutions differ greatly, but all contain some points of excellence. It should not, however, be assumed that any pet formula or favorite prescription can be applied to all cases alike, with prospects of success. Each case must be studied individually and the treatment adjusted to the condition of the patient. This statement seems obvious and rudimentary, yet there is much in recent medical literature, from physicians who have had little practical experience with morphinism, that seems utterly to ignore this principle of the individual study of patients. It is universally applied to all diseases except morphinism, but these patients are assumed to be alike, so that remedies that prove valuable in one case must be equally applicable to all. This is as absurd as declaring that one prescription is sufficient for the treatment of all cases of dyspepsia. For example, a Mr. Towns has published a set of formulas which has attracted considerable attention because of the prominence in general medicine of two or three of the sponsors. It is recommended as a cure for all cases of morphinism. While it contains excellent suggestions, useful in the treatment of certain conditions found in some cases, yet as an exclusive method it is as unsatisfactory as any other exclusive method for the treatment of a given disease. Among the physicians who make the treatment of morphinism their special work, I have not heard of one who has adopted it as the one and only system. Most of the methods that have been published during the past decade contain useful hints when carried out by physicians who have had experience with drug addictions. But to set up "hospitals" about the country with only one prescription in their armamentarium, and that placed in the hands of inexperienced men, is unscientific and absurd; yet just such institutions have been established with the approval of reputable physicians. This indicates a lamentable lack of appreciation of the complicated nature of morphinism. The patent medicine idea, that all patients suffering with a given ailment can be successfully treated from one bottle, seems to be reappearing here in unusual company. It is medicine reduced to the principle of a sausage machine, in which all sizes, shapes, and conditions are thrown into the hopper, and subjected to the same treatment. In the treatment of no other diseases would physicians of standing allow their names to be associated with such tomfoolery. Why an exception is made of drug addictions is a mystery for psychological investigation.

Stories of wonderful cures are usually employed by quacks to advertise their wares, but in no class of ailments are these reports more untrustworthy and fictitious than in morphinism. The well meaning family physician, inexperienced in the management of this form of human mendacity, will accept at its face value the statement of the patient that he has ceased to use the drug, and thereupon will rush into print with an account of the "cure." Reducing the daily dose of morphine and clearing out the bowels so improve the appearance of the patient as to give color to his assertions. It should be remembered, however, that he has at least two reasons for lying. 1, He wants to hide from his physician the

*Read before the American Medical Society for the Study of Alcohol and Narcotics, Philadelphia, December [illegible]

fact that he has been deceiving him by a clandestine use of the drug; 2, he is anxious to acquire the reputation of being free from drug addiction. Throughout the entire period of his morphine slavery he has probably been in the habit of resorting to all forms of subterfuge to promote this reputation; being habitual, it therefore seems to him to be the obvious and natural course. Consequently the statement of a patient that he is no longer using morphine requires considerable corroborative evidence before it can be accepted as conclusive. The tendency to deceive is a prominent symptom of this disease. The bacteria of degeneracy seem often to be injected with the drug.

A new drug habit has appeared in Boston that is as destructive to body and mind, and as difficult to overcome, as any heretofore known. It is the use of heroine by means of sniffing. The method used is to crush heroine tablets to a powder and then inhale this powder through the nostrils as snuff is taken. This new addiction has attractive features that other drug habits do not possess. Its devotees, who have had experience with morphine, opium, cocaine, and other enslaving drugs, declare that they prefer the sniffing of heroine to any of them. As it is equally effective in undermining the constitution, this added attractiveness makes it a doubly dangerous menace to civilization. While heroine is derived from opium, it differs from morphine in some respects, although its enslaving properties are equally powerful. Its effect is said to be felt as promptly when sniffed as when injected hypodermically. Another peculiarity of this addiction is that it is decidedly social in its tendencies, while morphinism is a solitary and secretive habit. So marked is this social characteristic that some of our Boston addicted are giving what they call "sniffing parties," on which occasions heroine "sniffs" are passed around as the chief entertainment for the guests. These exclusive social functions are said to be very popular with those who are devoted to this intellectual and elevating habit. So well established has this drug addiction already become that one of the squares in Boston is known, among the initiated, as "Heroine Square," because of the number of sniffers living in the neighborhood. It has been asserted that even school children are acquiring the habit. The prompt and pleasant effect, combined with the allurements of a social habit, make this new addiction most potent for evil It gives promise of becoming a widespread curse.

So far as symptoms and treatment are concerned, the addictions to morphine, opium, heroine, and codeine may be considered practically the same. They are equally injurious, equally enslaving, equally demoralizing, and, I am glad to add, equally curable. But in the treatment of no other disease is an armamentarium of wide range more necessary than here. The materia medica can perhaps be drawn on more liberally with effectiveness than in the treatment of any other ailment. No matter how much of a therapeutic nihilist you may be, you will find that many drugs are useful in the treatment of drug addictions. It therefore becomes apparent that an effort to treat these ailments according to one unvarying rule, with one unchanging prescription, is puerile and ridiculous.

I suggest three principal requisites in the successful treatment of any form of drug enslavement: First, a physician who is familiar with the pathological condition of these cases, and who has had experience in their care and treatment; second, an institution where patients can be under the constant care of physicians and nurses; third, a method of treatment that provides for the individual study of patients and the adaptation of therapeutic means to the peculiar condition of each.

The various forms of drug addictions, whether based upon opium or alcohol, constitute a cluster of diseases that deserve careful study and classification. Our best medical men should devote more attention to the subject, and take it out of the hands of quacks and semiquacks, and the vendors of infallible specifics. The serious character and wide prevalence of these ailments entitle them to this much consideration.

321 Centre Street.

STANDARDIZATION OF BRAINS.

Are Women Inferior Mentally to Men?

By Rose Alexander-Bowers, M. D.,
Michigan City Ind.,
Formerly Assistant Physician, Government Hospital, Washington, D. C.

Immutable tradition has bequeathed to us the adage that "woman is weaker than man" with no limitations as to whether intellectual, physical, or moral strength was the issue. It is an anatomical fact, that normal woman's muscularity is less than that of normal man's, also that proportionately there are other differences, to wit: The heart weight of a normal woman is about 255 grams, while that of a normal man is about 310 grams, yet it is not said that man is bigger hearted than woman. The same applies to the brain weight; that of the normal man being about 1,360 grams, while that of the normal woman is proportionately smaller due to a smaller cranial cavity, yet other things being equal, what wiseacre would say that woman's intellect is less because the brain weight is proportionately less? It might be mentioned here that the ancient Greeks did not place any confidence in this dilemmatic reasoning since they elevated Psyche to the intellectual throne.

Until the third month, embryologically, the primal cells are identical. After this time, differentiation occurs, but not to the degree of endowing the male organism with more mentality than the female organism, as Nature has no such selective action. This imaginary line of demarcation has been and will be the gangrene of progress, as the standardization of brains is not based on sex. Physiologically, superior cerebration depends upon the inherent integrity of each cell. Psychologically, intellect is the understanding and perception of integrals augmented by various other psychological factors; while Webster gives another definition with no mention of sex as a barrier.

At this point, several questions might be raised: First, why woman has not shown as much progress as man, since she has been living as long; second, if woman's intellect compared favorably with man's, why has she not subjugated him in lieu of being sub-

jugated? To the first my answer is, that man by nature is aggressively active, while woman is only passively active; yet it is possible for her to be quite as active in her passiveness as for the man to be positive in his aggressiveness. He has forged ahead, however, unhampered by woman's competition, appropriating unto himself all available educational institutions with their heavy endowments, which are often the liberal gifts of our moneyed women whose long suit has been the higher education of men. Considering woman's intellectual privations, her knowledge is indeed far beyond her proportional educational privileges, when one regards the few unendowed, sparsely located women's colleges or coeducational universities, which are as a rule universal for men only.

The answer to the second question is just as lucid as the first. Up to the present time woman has not been the maker of laws, but the maker of man, which calling has necessarily demanded the greater portion of her time, vitality, and ambition. For physiological reasons, maternity imposes a cessation from extramural engagements, which interval is grievously felt upon her return to the field of action, again handicapped by the offspring which demands her undivided attention and multiplies her burdens without compensation for her labor or a respite for her toil.

Since woman is the Atlas of the human race, it must be concurred in by all that she should, for improved eugenics, be the potential factor in initiating, nurturing, maintaining, and perpetuating a productivity of thought of the highest mental and moral character. While this sacred duty and privileged obligation is reposed with her, how much more successfully could she discharge her manifold duties as a mother, citizen, and progenitor of the race if provided with the proper equipment; which would include the right to share with the father, the same intellectual schools and information bureaus which have been for generations selfishly and unrighteously treasured as sources for privileged knowledge by the stronger sex.

No race, sex, or creed has a corner on the divine right of thinking, as our governmental constitution has specifically stated that "all are created equal"; yet woman's capabilities are underestimated and legislated against for reasons best known to the sterner sex.

For substantiation of the last phrase, kindly note that, in 1809, when the modern Napoleon established the Imperial University, he displayed his regal regard for the nation's future sons and fathers by instituting a wonderful curriculum partially supported by the government, for the instruction of boys, but he made no provision for the rejuvenation or cultivation of the physical and mental training of the girls, the future mothers, who were the determining factors for the good or evil qualities of the race. When reminded of this omission, he unhesitatingly remarked: "I do not think that there is any occasion for considering the method of instruction for girls; they cannot be better brought up than by their mothers; public education is not suitable for them, since they are not called upon to take part in public life." In contrast to this belief, it is encouraging to observe what Colonel Roosevelt has said: "Mothers are more important to the country than the soldier, the literary man, or the man of science." This decision of Napoleon in itself was formidable because of its results, which were poignant factors in moulding the general opinion prevalent among the French and other men of the present day—that women are to be seen and not heard. This pseudophilosophy has been instrumental in coloring and narrowing the masculine field of vision regarding feminine mental aptitude, for France was then at her zenith and in a position to be imitated in many fields of activity.

The educational platform laid down by Napoleon is in a large measure responsible for the French woman's irresponsibility and dissipation, which is heralded at home and abroad as an aristocratic privilege, but in reality is a moral reign of terror.

Yet with all these disheartening obstacles, women's brains have not atrophied nor have her psychic activities been stultified by petulant disappointment, but, with all submissiveness and self effacement, she has continued to apply herself. This diligence has been rewarded with pregnant results, valued at a premium by her more fortunate brothers, who have claimed for themselves the returns whether pecuniary or honorary in nature, although sex should be no obstacle to acknowledgment or reimbursement.

It is needless to recount in detail the laborious lives of certain illustrious women, only famous to the world as technicians, several of whom, however, will be taken as a paradigm in demonstrating miscarried justice. Science, literature, art, music, travel, politics, sociology, etc., have all been benefited by woman's helping hand, witness biblical, ancient, medieval, or modern history.

Caroline Herschel, with pliant and diligent devotion, continued to be useful under the most tyrannical rule of her educated brother, who obliged her to perform the drudgery of an astronomical laboratory in which she acted in the capacity of errand boy and received a proportionate wage. At the same time, uneducated and untrained, she aided in making mathematical calculations, preparing scientific memoirs, noting various clusters and nebulæ, and discovering some eight comets. Her brother, Sir William, had an irascible temper and was most persevering with it and with his desire to make the most of his overworked and underpaid assistant, who was further harassed by being quizzed at the dinner table about the angles of certain pieces of pie; failing to answer this momentous question, she was apprised of the fact that she was to have none on the following day. When Miss Herschel reached the senium, she was awarded the gold medal of the Royal Astronomical Society by the vice-president who said it was impossible really to appreciate her work.

Previous to 1831, women did not enjoy with men the rights of the press, which necessitated the assumption of a *nom de guerre* until the passage of the Reform Bill, when Harriet Martineau became so bold as to publish *Economic Tales*, which dealt with political life and customs and were read enthusiastically in the schools and academies of England, France, and Russia.

In the musical world, Fanny Mendelssohn ren-

dered excellent service as expert technician and obliging serf for her brother Felix, who with no qualms of conscience affixed his own signature to her compositions, for which offence she had no redress, as he was made powerful by his higher learning, and consequently resorted to plagiarism and unprincipled commercialism.

Remote history reveals various mental vocations indulged in by woman, while the present will be an eventful epoch for her in all countries. France will exalt Madame Curie, not only as a technician but as a scientist of superior mentation. Norway will vaunt herself in being the first to advance woman to parliament, while America will pay homage to Jane Addams as a sociologist and to Frances Willard as a distinguished mind in preventive medicine. The literary fields of all countries are crowded with able writers and critics of the feminine contingency, as are the various other departments of learning, e. g., the universities.

This habitual disparagement of the feminine mental acumen sows discord and abrogates from the various dominions of intellectual activity, the cogent factors necessary to progress, and while this invective and belligerent attitude obtains between the sexes, a maelstrom of dissatisfaction will swallow up higher mental pursuits and intellectual attainments.

Previous acquaintanceship with our formidable legion of versatile women renders the writer's space inadequate for further comment upon their numerous qualifications. In concluding this imperfect article, an excerpt from a letter of Lady Huggins to the *English Woman's Handbook* for 1911, will be cited:

> Women are quietly working most valuably; but, at the moment, there are no startling discoveries. It is a time of steady, quiet work—an early spring state. Do we not know it in the material world? The brown earth is there—but shows little upon it. The trees are there—but no leaves yet; the birds are there—but not yet singing. But in a few weeks' time what changes will appear. The earth will teem with green things and the trees will clothe themselves with beauty and the birds will enchant us with their minstrelsy. Assuredly, the quiet times in life, as in Nature, lead to times of intense doing. After all, the greatest of all arts is the art of living wisely and to good purpose.

Therapeutic Notes.

Treatment of Bedsores.—Mosny and Pruvost, in *Bulletins et mémoires de la société médicale des hôpitaux de Paris*, May 22, 1913, report the case of a young man suffering from bronchopneumonia, and phlebitis of both lower etxremities in whom, after partial recovery from these disturbances, a large suppurating bedsore developed and the temperature, previously normal, rose a second time. The sore continued to enlarge, in spite of the usual measures of treatment, until it attained the size of a silver dollar, when applications of hot air—as hot as the patient could stand—were begun. Even at the first sitting, of fifteen minutes' duration, the necrotic base of the ulcer began to redden, and soon after showed a tendency to granulate. The temperature, previously rising, remained stationary for two days, then began to descend, and by the thirteenth day was normal. Seven hot air applications in all were made, at intervals of two to four days, and on the twentieth day the ulcer was healed. That the hot air treatment was alone responsible was shown in that, during the intervals between applications, the sore had been merely covered with dry dressings.

Achard, discussing the case just referred to, stated that he had obtained good results with hot air in the treatment of gangrenous ulcers, e. g., in a case of diabetes, as well as in one of Pott's disease with paraplegia. While in the latter case, owing to the trophic nature of the ulcer, the hot air failed to induce healing, it exerted a rapid detergent effect upon the lesion, arresting suppuration and fetor.

Treatment of Alopecia in Convalescents.—Brocq, in *Journal de médecine de Paris* for July 26, 1913, recommends that, to relieve this condition, the hair be cut every five days for a period of two weeks and the scalp rubbed daily with the following preparation:

℞ Glycerini,
Rum,
Tincturæ cantharidis, ... āā ℥lxxx (5 grams);
Pilocarpinæ hydrochloridi, ... gr. viiss (0.5 gram);
Olei santali,
Olei gaultheriæ, ... āā gtt. v;
Alcoholis, ... ℥iii (80 grams).
Misce et fiat lotio.

Treatment of Night Terrors.—Comby, in *Bulletin médical* for May 17, 1913, is credited with the statement that night terrors in children are, in more than one half of all cases, of toxic origin. Autointoxication from the gastrointestinal tract should especially be thought of, gastric motor atony and constipation being frequently associated conditions. Alternating diarrhea and constipation due to enteritis are also often met with, and in the treatment it is of great importance to correct any existing dietetic errors, e. g., excess of food, coarse and indigestible food, rapid eating, unduly large fluid intake or the use of excitants such as alcohol and coffee. At the evening meal, milk, water or some simple, bland infusion should alone be permitted.

Reflex causes, such as ascarides or pinworms, adenoid growths, hypertrophied tonsils, hernia—especially umbilical—and occasionally phimosis or testicular ectopy, should likewise be sought, and corrected if found. Simon laid stress on three possible causes of night terrors: 1, Congenital syphilis, yielding to antiluetic remedies; 2, attenuated forms of malaria, in which case arsenic and quinine are to be used; 3, inherited gouty tendency, in the presence of which, a lactovegetarian diet and at times small doses of colchicum give excellent results.

Nervousness predisposing to night terrors can best be dealt with by administering tepid baths before bedtime, at least two hours after supper. Exciting stories or fatiguing occupations in the evening are to be prohibited. Pillows containing horsehair are to be preferred to those stuffed with feathers. Placing powdered camphor under the bolster appears at times to be useful.

During the actual periods of terror, fresh air, cold affusions, verbal encouragement, and the inhalation of ammonium carbonate or a few drops of

ether or ethyl bromide suffice as palliatives. To diminish the frequency and intensity of the attacks, bromides may be used, while in the event of persistent insomnia, small amounts of sulphonmethane, sulphonethylmethane or ethyl carbamate—the latter in doses of four to eight grains (0.25 to 0.5 gm.)—can be ordered in a little lukewarm milk or water sweetened with sugar.

Treatment of Plantar and Palmar Hyperidrosis.—C. Sabatié, in *Progrès médical* for June 28, 1913, advises that in plantar hyperidrosis the feet should be bathed daily in water to each quart (litre) of which have been added either five drams (twenty gm.) of sodium borate, one tablespoonful of tincture of benzoin or of undiluted commercial formaldehyde solution, four grains (0.25 gm.) of potassium permanganate, or 2.5 drams (10 gm.) of dried alum. The foot bath should be hot if the feet are cold and cyanotic, and cool if they are red and hot. Twice daily one of the following solutions should be used as a lotion:

I.

℞ Tincturæ benzoini, ...3iiss (10 grams);
Liquoris formaldehydi, ...℥ss (15 grams);
Aquæ, ...Oii (1000 c. c.).
Misce.

II.

℞ Quininæ sulphatis, ...gr. xv (1 gram);
Alcoholis diluti, ...℥iiiss (100 grams).
Misce.

III.

℞ Acidi tannici, ...3ss (2 grams);
Alcoholis diluti, ...℥v (150 grams).
Misce.

Or, the following combination may be applied to the feet:

℞ Liquoris ferri chloridi, ...℥i (30 grams);
Glycerini, ...3iiss (10 grams).
Misce.

Within the patient's socks may be placed soles of blotting paper previously impregnated with a one per cent. solution of potassium permanganate or a two per cent. solution of salicylic acid; or, again, one of the following powders may be similarly used:

I.

℞ Bismuthi subnitratis, ...3xiii (50 grams);
Sodii salicylatis, ...3iiss (10 grams).
M. et ft. pulvis.

II.

℞ Talci pulveris, ...
Bismuthi subnitratis, . } .....āā 5x (40 grams);
Aluminis pulveris, ...3iiss (10 grams);
Potassii permanganatis, ...5ss (2 grams).
M. et ft. pulvis.

Where local infection or eczematous lesions are present, they may be treated, according to indications, with moist dressings, bland powders, zinc paste, or preparations containing ichthyol or tar. Interdigital fissures should be painted daily with a two per cent. solution of silver nitrate.

In very marked and rebellious cases, the possible value of Röntgen ray therapy should be borne in mind.

General constitutional treatment is not to be neglected, though an attempt to prevent sweating with remedies internally given would be fruitless. Obesity, the arthritic diathesis, general nervousness, faulty diet, etc., must, on the other hand, be corrected as far as is possible.

In hyperidrosis of the palms the same local measures may be employed as in the plantar variety. Astringent and formaldehyde-containing lotions are the most suitable. In addition, astringent pastes may be applied overnight:

℞ Acidi tannici, ...3i (4 grams);
Glyceriti amyli, ...5x (40 grams).
Misce.

Intrapleural Injections of Epinephrine in Pleurisy.—Wedensky, in *Semaine médicale* for September 10, 1913, is stated to have reported a series of about twenty cases of pleurisy in which injections of a one to 1,000 solution of epinephrine hydrochloride into the pleural cavity constantly yielded such favorable results as to lead to his discarding all other methods of treatment in this condition, except surgical intervention where indicated. The amount injected was at first 0.3 c. c. (five minims) and on the four or five succeeding days, 0.2 c. c. (3.33 minims) in saline. As a result, the temperature would begin to descend on the third day and the effusion be rapidly absorbed, so that already by the tenth day the presence of fluid could only with difficulty be demonstrated. In dry and in purulent pleurisy the measure was also employed with benefit. Distinct improvement in the patient's general condition was among the additional favorable effects noted.

The same procedure was tried by Volkova in six cases of pleurisy with effusion, all in children ranging from two to ten years of age. The dose used was at first 0.15 c. c. (2.5 minims) of the solution: this was later increased to 0.3 c. c. (5 minims) and in one case even to 0.5 c. c. (8 minims). Rapid absorption of the effusion followed, even in cases where previous exploratory puncture had shown little or no tendency to initiate absorption. In two cases of the series, perhaps because of somewhat excessive doses, a temporary acceleration of the pulse was witnessed under the influence of the epinephrine, together with well marked diuresis and slight glycosuria.

Treatment of Sciatica.—L. W. Reynolds, in *Lancet* for April 12, 1913, reports a case of sciatica, rebellious to baths, massage, blisters, salicylates, iodides, etc., in which injections of the following solution, repeated at different points along the course of the sciatic nerve, yielded, after a time, marked and lasting relief:

℞ Antipyrinæ, ...3iiss (10 grams);
Cocainæ hydrochloridi, ...gr. iiss (0.15 gram);
Aquæ distillatæ sterilisatæ, ...3iiss (10 grams).
Fiat solutio.

The amount injected at each sitting was sixteen minims (one c. c.). The injections caused no pain at the time, but considerable pain was always experienced about six hours afterward. The more closely to the nerve an injection was given, the greater the relief. Thus an injection over the external popliteal behind the head of the fibula was productive of marked benefit, and another on the dorsum of the foot completely removed the pain in four hours, after which it failed to return. At the conclusion of the treatment, in the course of which eight injections were given, the patient was able to resume his ordinary habits, considerable stiffness in the leg being alone experienced.

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EDITORS

CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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NEW YORK, SATURDAY JANUARY 17, 1914.

NEWER GLEANINGS RELATIVE TO CARDIORENAL REMEDIES.

The recent studies of Cushny and others on digitalis action, and the present disposition to question the existence of a direct stimulating action of camphor on the myocardium, lend unusual interest to some clinical and experimental observations reported at the first annual meeting of the Federation of American Societies for Experimental Biology, held recently in Philadelphia. In a paper presented by A. E. Cohn and F. R. Fraser, dealing with the effects of digitalis carefully observed in twelve cases of cardiac disease of the ordinary types, it was noted that but one case of the series had shown slowing of the heart rate under the influence of full therapeutic doses of this drug. Where the latter was pushed to the stage of toxic effects, slowing was observed, but in these cases it was due to the production of an incomplete heart block, instead of representing an actual slowing of both auricles and ventricles. Atropine always proved capable of releasing the heart from the influences operating to slow its action, and in many cases unmistakably overcame the preexisting impairment of auriculoventricular conduction. Reference was made to the value of digitalis administered in suitable doses, in cases of mitral stenosis, the tendency toward slowing of the ventricular rate by the drug favoring better repletion of the left ventricle during diastole and in a measure relieving the left auricle from its excessive burden.

In contrast with these observations confirming the value of digitalis as a heart remedy, were those of O. H. Plant, who reported experimental work in the dog, frog, and turtle. Of ten dogs to which camphor was administered intravenously in a saturated Ringer solution, only two showed a slight increase in the amplitude of the heart beat in the myocardiographic tracing. The drug exerted no favorable effect on the blood pressure; neither did it improve the circulation in dogs in which this function had been depressed with hydrated chloral, whereas strophanthin and other cardiotonics did. In the experiments on cold blooded animals uniform evidence of cardiac stimulation by the drug was not obtained. The frog heart arrested by hydrated chloral resumed beating when a saturated solution of camphor in 0.6 per cent. saline was directly applied, but this effect was not maintained, passing off in a few minutes. Ether exerted a similar, but more prolonged beneficial action in two out of eight instances. On the whole, it seems evident that the circulatory stimulant influence of camphor clinically employed is reflex, i. e., due to peripheral rather than direct irritation. It should not be overlooked, however, that in large amounts camphor is capable of exerting a very pronounced direct effect on the nerve centres. A rabbit will rapidly die in convulsions if a massive dose of camphor dissolved in olive oil is introduced into its stomach. Doctor Plant's experiments merely tend to show that no marked direct influence on the circulation can with certainty be expected from the administration of this drug.

At the same meeting J. D. Pilcher reported a detailed study of the effects of caffeine in a series of fifteen cases of advanced myocardial disease. To eight patients citrated caffeine in doses of ten to one hundred grains a day by mouth was given; to the remainder, pure caffeine in the average daily amount of seventeen grains. In most instances the drug was continued for four and a half to five days, after which the advent of such untoward phenomena as insomnia, nervousness, anorexia, vomiting, etc., necessitated its abandonment. A sudden rise in the diuretic coefficient—ratio of volume of urine to that of fluid intake, the latter being kept constant in each patient—was observed on the first day. Further increase took place on the succeeding days, the maximum being attained on the third or fourth day. The blood pressure, estimated every morning, showed in most cases a decided fall—usually twenty to forty mm. of mercury—involving

both the systolic and diastolic pressures. Where 100 grain doses were reached, however, the pressure instead rose considerably at first, then descended gradually in the subsequent three or four days. The greatest drops in blood pressure occurred, as might be expected, in the cases showing the greatest increase in the diuretic coefficient. The body weight likewise showed an inverse relationship to this coefficient; twelve cases in the fifteen exhibited a diminution of weight ranging from two to twenty pounds. The caffeine always caused an increase in the pulse rate, but this persisted only for a short period. Improvement in the general condition of the patient as a result of the caffeine treatment was noted in eight cases. Observations such as these are of considerable assistance in the attempt to produce an essentially rational system of therapeutics, and as such, worthy of commendation.

THE RECTAL TEMPERATURE.

On phenomena of fever our first word must be: What is the real temperature of the body? What does it register in the rectum? How does it differ from the surface temperature? Even the further question, How does it arise? is less ultimate and imperative. For the difference is essential and in the nature of disease, since the skin and even the mouth may show no sign of fever, and yet a high temperature be at the same time spreading throughout the body. The summaries and studies of the comparative fluctuations of fever are strangely defective, when we consider that the comparison is the natural complement of the clinical survey. The subject has seldom been treated as an isolated problem, to be scrutinized and solved in an abstract manner. We often find *obiter dicta* on such variations as the temperature in cholera, a familiar instance, but, if space allowed, we should like to cite many passages which show sound observation backed by research and a decided gift of exposition. We mention, however, an instance almost unique in its interest. The "temperature in the axilla at 8 a. m. was 101°F., and at 11 a. m. 102.4°F. The temperature was now taken in the rectum and also twice with different thermometers in the groin and axilla. In the rectum the temperature was 106.4°F.; in the other situations it was still 102.4°F. The difference in the temperature in the axilla and in the rectum of over four degrees is remarkable and we believe very exceptional; in fact, if the rectal temperature had not been taken the hyperpyrexial element in the illness would certainly have escaped notice." (*Lancet*, December, 1905.) Here is a practical reduction of clinical fallacies There is current in the matter of the thermometer a good deal of antiquarian idolatry. As a matter of fact, this instrument is not infallible, and it is certainly judicious to rectify a possible lapse by using two thermometers. As to the rectal temperature, the preponderance of such instances as the one cited should be noted; it is quite in the best tradition of surgery, and might be fortified by a generalization of all forms of clinical experience regarding the rectal temperature.

PARALYSIS AND THE PASTEUR TREATMENT.

In the *Public Health Reports* for October 24th passed assistant surgeon H. E. Hasseltine, of the Public Health Service, reported two cases in which paralysis occurred during the course of antirabic treatment. From a study of these cases and a review of the literature concerning similar ones he concludes that, in rare instances, some form of paralysis may be the direct result of the Pasteur treatment. Concerning the basal cause of this paralysis there is a difference of opinion among neurologists. Some hold that it is a myelitis; others believe it is a neuritis. Although the frequency with which this complication occurs is not exactly known such statistics as are available indicate that it is exceedingly uncommon. Thus out of 567 persons treated at the Hygienic Laboratory, paralysis occurred in only two instances, whereas a series of 7,080 treatments investigated by Jones did not furnish a single complication of this nature.

After reviewing the various theories as to the cause of paralysis occurring in the course of the Pasteur treatments, Hasseltine is inclined to lend his support to that one which explains it as a phenomenon of anaphylaxis resulting from the injection of foreign animal tissue (rabbit's cord). It is therefore analogous to those cases of individual hypersusceptibility occasionally seen after the administration of diphtheritic antitoxin.

Considering the fact that recovery has eventually followed in nearly all cases so far reported, it does not appear that the fear of this complication should deter one from administering antirabic serum whenever indicated. However, as canine rabies is steadily increasing in the United States it is the duty of all physicians to report any serious complications which come under their observation. These cases should be reported accurately and in detail, for it is only by the way of this knowledge of the subject that we can be expected to learn to check the advance of the disease. This is an important matter, for this disease is the subject of much dangerous ignorance on the part of the laity, many of whom deny its very existence.

SUPPRESSION OF THE HARMFUL EFFECTS OF WATER BY THE USE OF CONCENTRATED SOLUTIONS OF NEOSALVARSAN.

P. Ravaut (*Presse médicale,* October 25, 1913) now uses but from five to eight c. c. of water in administering neosalvarsan intravenously. The solution is filtered before injection in a simple apparatus preventing contamination. A glass syringe of ten c. c. capacity is used to draw up the solution through the filter and administer the injection. The author has lately been using distilled water not freshly prepared but kept for four months in ampoules at room temperature and, after this, for two months in the incubator at 37° C. The patients have shown no febrile reaction whatever. This demonstrates that if the concentrated solution method is used, old distilled water can be employed with impunity even in the tropics. A febrile reaction noted after any neosalvarsan injection, but the first in a given patient, is due to intolerance of the drug itself. Continued treatment with careful regulation of the dose should cause no reaction.

INSECT TRANSMISSION OF ANTHRAX.

M. Bruin Mitzmain, veterinary entomologist, Government of the Philippines, records, in *Public Health Reports,* XXIX, 2, for January 9, 1914, a preliminary note of a large number of experiments on the role of suctorial insects in the dissemination of anthrax. The experiments were tried with an artificially infected guineapig, which died of the disease upon the third day. The flies were applied two and one half hours to a few minutes before the death of the blood donor. Guineapigs were used to receive the infective bites of *Stomoxys calcitrans* and *Tabanus striatus.* Each animal was placed in a gauze sack strapped to an individual board and the flies were induced to feed when applied from separate test tubes. *Stomoxys calcitrans* was used as the porter in two experiments and *Tabanus striatus* in a single experiment. With both species the infection was successfully transferred by the direct method in which the flies were interrupted while feeding on the sick animal. The stable flies were transferred to the healthy animal in one trial with only a few seconds' interval after biting the infected host, and in the other instance an interval of ten minutes elapsed between the feedings. A total of twenty flies were used in the first experiment and thirty flies in the second trial.

The exposed animals died in both cases during the evening of the third day. Typical pictures of anthrax infection were presented at the necropsy of the two animals. In addition a substantial gelatinous and hemorrhagic edema was observed in the subcutaneous region of the area upon which the flies were applied in biting. The agar cultures when injected reproduced the disease with fatal results in guineapigs used in later experiments.

Similar results were obtained in all essentials when horseflies were employed to transfer the disease from the sick to a healthy guineapig. Three flies were used to carry the infection, with only a few seconds' interval from infected to healthy host. The latter died on the fourth day after the flies were applied. The autopsy was made a few minutes after death. As in the other instances, there was no rigor mortis. The site of fly biting was not much involved; only a slight gelatinous hemorrhagic edema. The subcutaneous injection also was slight in effect. The spleen was greatly enlarged and extremely friable. Vigorous growth characteristic of the anthrax bacterium was obtained on agar, and later the disease was reproduced in a horse from a saline suspension of the agar culture. Typical organisms were seen in the feces of horseflies at various intervals up to forty-eight hours from the time the infected animal was bitten. The feces of the stable fly were likewise found to be infected up to twenty-four hours after obtaining blood from a sick animal.



DR. EDWARD CHARLES SPITZKA.

A series of experiments is at present being conducted with anthrax in cattle and horses. Guineapigs or other rodents will in every instance be employed as blood donors, as experience has shown that it is difficult in large animals to time the probable invasion of the peripheral circulation by the anthrax organisms so as to render insect transmission practicable. An attempt will be made to determine the limits of infection in flies acting as carriers of contaminative material.

Obituary.

EDWARD C. SPITZKA, M. D.,

of New York.

Dr. Edward Charles Spitzka died at his home in New York, at the age of sixty-one years, on Tues-

day, January 13th, of apoplexy. Doctor Spitzka had suffered for some time from necrosis of the upper jaw and had undergone several operations. He was born in New York, educated at the College of the City of New York, took his degree in the Medical School in the University of New York in 1873, and subsequently studied in Leipsic and Vienna for three years. Returning to New York, he engaged in practice, establishing a reputation as a specialist in diseases of the nervous system, and soon became recognized as an expert alienist and neurologist, and appeared in court in many celebrated cases. He occupied the chair of medical jurisprudence and neurology in the New York Post-Graduate Medical School and Hospital, and was consulting neurologist at Sydenham Hospital. He was for three years editor of the *American Journal of Neurology*, and served as president of the American Neurological Association and of the New York Neurological Society. While in Vienna he married. His son, Dr. Edward A. Spitzka, is professor of anatomy in the Jefferson Medical College, of Philadelphia. Doctor Spitzka was a brilliant writer and a welcome contributor to the NEW YORK MEDICAL JOURNAL, as well as to the journals it absorbed, the *Philadelphia Medical Journal* and the *Medical News*. In 1883 he published a *Treatise on Insanity*, which took a high place in medical literature.

News Items.

Cancer Research Fund for Jefferson Hospital.—A fund providing an annual income of $3,500, to be devoted to a study of cures for cancer, with special reference to the use of radium, has been donated to the Jefferson Hospital, Philadelphia, by Mrs. Lucy Henderson, of Newcastle, Pa. The fund will be named for the founder and the work of investigation will be carried on under the direction of a commission that includes Dr. J. Chalmers Da Costa, Dr. W. M. L. Coplin, and Dr. Hobart Amory Hare.

Personal.—Dr. M. Frazer Percival has been appointed röntgenologist to the Philadelphia Polyclinic Hospital, succeeding Dr. Charles Lester Leonard, deceased.

Dr. W. W. Keen, of Philadelphia, was elected president of the American Philosophical Society for the fifth time, at the annual meeting of the society held in Philadelphia on January 2d.

Colonel William C. Gorgas, chief sanitary officer of the Panama Canal Commission, has been elected an honorary fellow of the Royal Sanitary Institute, of London.

Philadelphia Pediatric Society.—This society has elected the following officers to serve for the year 1914: President, Dr. William N. Bradley; vice-presidents, Dr. John F. Sinclair, Dr. Howard Childs Carpenter, and Dr. S. S. Woody; treasurer, Dr. Frederick Fraley; secretary-recorder, Dr. Maurice Ostheimer, and board of directors, the six officers previously mentioned and Dr. Eleanor C. Jones, Dr. C. A. Fife, Dr. J. Claxton Gittings, Dr. Howard Kennedy Hill, Dr. Theodore Le Boutillier, and Dr. John K. Walker.

The Cost of Tuberculosis.—In the annual report of the National Association for the Prevention and Study of Tuberculosis, it is stated that the sum of $29,000,000 was used last year in the various applications of scientific and medical activities dealing with the prevention and treatment of tuberculosis. From the schedules of expenses which are drawn up for public information, it appears that sanatoria and hospitals cost $13,000,000; care of patients in dispensaries and open air schools, about $825,000; while State and local boards of health spent over $250,000. Public funds furnished $13,800,000, or nearly seventy per cent. of the total. The greatest amount spent by any State was credited to New York.

Bronx County Medical Society.—The new Bronx County Medical Society was organized January 9, 1914, with the following officers for the first year: President, Dr. Nathan B. Van Etten; first vice-president, Dr. Francis L. Donlon; second vice-president, Dr. William A. Boyd; secretary, Dr. Herman T. Radin; financial secretary, Dr. Henry A. Dodin; treasurer, Dr. Edward F. Hurd.

Obstetrical Society of Philadelphia.—At a stated meeting of this society, held on the evening of January 2d, the following officers were elected to serve during this year: President, Dr. George Erety Shoemaker; vice-presidents, Dr. Frank C. Hammond and Dr. John A. McGlinn; secretary, Dr. Edward A. Schumann; treasurer, Dr. William E. Parke; council, Dr. R. C. Norris, Dr. G. M. Boyd, Dr. J. N. Fisher, and Dr. B. C. Hirst; publication committee, Dr. S. E. Tracy, Dr. John G. Clark, Dr. William E. Parke, and Dr. B. M. Auspach.

To Control Radium Lands.—Representatives Foster, of Illinois, and Ferris, of Oklahoma, introduced bills on January 12th providing for the segregation of any lands in the public domain upon which there may be carnotite, pitchblende, or other radium bearing ores, and for their development by the Government. The Foster bill was prepared by the Department of the Interior and indorsed by Secretary Lane. Representative Ferris is chairman of the House Committee on Public Lands, and introduced his bill so that it might be referred to his committee. Neither bill proposes to interfere with any radium deposits upon lands not belonging to the United States.

Italian Medical Society of New York.—At the annual meeting of this society, held on Friday, December 26th, the following officers were elected: President, Dr. Felippo Cassola; first vice-president, Dr. Frank Samarelli; second vice-president, Dr. L. Criscuolo; secretary, Dr. John Corcio; corresponding secretary, Dr. Francis A. Auleta. The position of treasurer has not yet been filled. The board of directors is composed of the following members: Dr. B. Baldereschi, Dr. A. Cifoldi, Dr. C. Legiardi Lauro, Dr. G. Lopinto, Dr. V. Nacciarone, Dr. E. Perrone, Dr. C. Focci, and Dr. E. Fresco. Meetings of the society are held monthly, on the fourth Friday.

American Society for the Control of Cancer.—This society has just published the following note of warning as to the value of radium in the treatment of cancer. "The American Society for the Control of Cancer fears that exaggerated ideas of the power of radium in the treatment of cancer may result from the recent publicity given to this agent in the daily press. It appears highly important at the present time that the limitations of radium in the control of cancer should be emphasized, as well as the favorable effects in certain cases. Otherwise, the familiar story of new hope, destined only to disappointment, will again be recorded at the expense of many unfortunate sufferers."

Medical Schools and Students in the United States.—The United States Bureau of Education has published statistics on the number of medical schools and students, from which it appears that in 1913 there was a decrease of both. The number of graduates has also decreased. Seventy-nine medical schools combined with others or ceased to exist. The enforcement of a rule that every applicant for a medical license must study one or two years in college before beginning a medical course, is noted. Efficiency is promoted by having fewer institutions, which should be large and well equipped. While the statistics show that the number of women studying medicine has increased, the number of women graduates decreased in 1913.

The Sale of Bichloride Tablets.—The Department of Health of the City of New York has further amended the penal code so that on and after March 4th it will be illegal to sell bichloride of mercury except in the form of triangular blue tablets labeled poison. The latest addition to the various methods proposed for preventing accidental poisoning from mercury bichloride is the saturation of bibulous paper with a corrosive sublimate solution. Pieces of this paper, measuring four inches by two, have been placed on the market; when soaked for two minutes in a pint of water one piece gives a solution of one to 1,000. It would be manifestly impossible for any one to swallow such antiseptic leaves, which are thus superior from every point of view to tablets.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, January 19th, Philadelphia Clinical Association, Medical Society of the Woman's Hospital, and the Episcopal Hospital Clinical Society; Tuesday, January 20th, West Branch of the County Society, Philadelphia Laryngological Society, and the annual meeting of the Physicians' Motor Club; Wednesday, January 21st, business meeting of the County Society, and the Section in Otology and Laryngology of the College of Physicians; Thursday, January 22d, Pathological Society and the Germantown Branch of the County Society; Friday, January 23d, Neurological Society, Northern Medical Association, South Branch of the County Society, and the board of directors of the Medical Club.

Transfer of Clinics for the Administration of the Pasteur Treatment, Department of Health, City of New York.—The administration of the Pasteur treatment for rabies was, until January 1, 1914, carried on at the research laboratory and the Brooklyn Borough office. On January 1st this work was transferred to the Bureau of Infectious Diseases, and a daily clinic from one to four p. m., in Room 802 on the eighth floor of the department headquarters, 149 Centre Street, was established.

On Sundays and holidays, patients from Manhattan are referred to the Brooklyn clinic, at the Brooklyn Borough office, Flatbush Avenue and Willoughby Street, between the hours of ten and twelve a. m. A clinic will also be established at the Bronx Borough office in the near future.

For the present, cases from the Borough of Queens are referred to the Brooklyn clinic, and cases from the Borough of Richmond to the Manhattan clinic for treatment.

New Officers of the College of Physicians of Philadelphia.—At the annual meeting of the College of Physicians of Philadelphia, held on the evening of January 6th, the following officers were elected to serve for the ensuing year: President, Dr. James C. Wilson; vice-president, Dr. Richard H. Harte; censors, Dr. James Tyson, Dr. William W. Keen, and Dr. George E. de Schweinitz; secretary, Dr. Thomas R. Neilson; treasurer, Dr. John B. Roberts; honorary librarian, Dr. Frederick P. Henry; councillors (to serve until January, 1917), Dr. David Riesman and Dr. George G. Ross; committee of publication, Dr. G. G. Davis, Dr. Thompson S. Westcott, and Dr. Walter G. Elmer; library committee, Dr. William J. Taylor, Dr. Francis R. Packard, Dr. George W. Norris, and Dr. Astley P. C. Ashhurst; committee on Mütter Museum, Dr. Henry Morris, Dr. George P. Müller, and Dr. George Fetterolf; hall committee, Dr. John K. Mitchell, Dr. Thomas H. Fenton, Dr. B. Alexander Randall, Dr. E. Hollingsworth Siter, and Dr. J. Norman Henry; committee on directory for nurses, Dr. Thomas G. Ashton, Dr. Frederick Fraley, and Dr. John H. Gibbon.

Resolutions on the Death of Doctor McBurney and Doctor Garrigues.—At a recent meeting of the Medical Board of St. Mark's Hospital, New York, the following resolutions were adopted on the death of Doctor McBurney:

WHEREAS, It has pleased Almighty Providence to call from us our friend, Dr. Charles McBurney, consulting surgeon to St. Mark's Hospital, of New York city, and

WHEREAS, He has at all times been ready to place his eminent skill and knowledge at the disposal of the institution, be it

Resolved, That the Medical Board of St. Mark's Hospital, of New York city, do hereby express their deep sense of grief at the loss of their friend, Dr. Charles McBurney, and be it further

Resolved, That the secretary be instructed to spread these resolutions in full upon the minutes, and that a copy of the same be forwarded to the medical press.

The following resolutions were also adopted by this board on the death of Doctor Garrigues:

WHEREAS, It has pleased Almighty Providence to call from us our friend, Dr. Henry J. Garrigues, one of the founders of St. Mark's Hospital, of New York city, and

WHEREAS, He has for many years by his devotion to duty furthered the interests of the institution and earned the gratitude of his colleagues, be it

Resolved, That the Medical Board of St. Mark's Hospital, of New York city, do hereby express their deep sense of grief at the loss of their friend, Dr. Henry J. Garrigues, and be it further

Resolved, That the secretary be instructed to spread these resolutions in full upon the minutes, and that a copy of the same be forwarded to the medical press.

A. VAN GIESON, M.D., Secretary of the Board of Managers.

REYNOLD WEBB WILCOX, M.D., LL.D., President of the Medical Board.

[illegible], M.D., Secretary of the Medical Board.

[illegible], M.D.

Pith of Progressive Literature.

CORRESPONDENZBLATT FÜR SCHWEIZER AERZTE

November 8, 1913.

Retention of Salt in Nephritis, Heart Disease, and Pneumonia; Origin of Edema.—Ida Hoff concludes that in hydropic nephritis we always find retention of both salt and water in the blood and in the edema; that it is likewise present in the blood and in the edema in hydropic diseases of the heart, but not to the same average degree; that in spite of the retention of water in the blood we often find a greater retention of salt in the blood in both forms of disease with edema. The concentration of salt in the blood of nonhydropic nephritis is either increased, normal, or diminished. The refraction index also varies, but both salt and water in the blood are never present in equal proportion. From these findings the independence of the retention of water from that of salt is deduced, for we find in the blood in nephritis without hydrops, retention of salt without retention of water, and the reverse, and when both are present the percentage of the salt may be high, hence the quantity of water is not one that is osmotically equivalent to the salt. In croupous pneumonia the concentration of salt in the blood is reduced, and yet the salt is retained in the body, by absorption into the tissues. After the crisis the retained salt is excreted in the urine, the concentration in the blood increases, and the refraction index in the serum rises from subnormal to normal.

Pathology of Herpes zoster.—W. Kuersteiner says that the lymphocytes and perineural lymphangiectasis found in the various spinal ganglia are to be looked upon as due to an inflammatory engorgement of lymph, a true senile degeneration is not to be thought of. The incongruence of the changes in the spinal ganglia and the localization of the zoster is best explained by the assumption of a reflex zoster as an expression of a visceral disease, whereby the lymphocytes in the spinal ganglia increase the predisposition of the cutaneous nerves to the disease, and the fibres of the sympathetic mediate between the diseased viscera, the spinal ganglia, and the peripheral area of skin involved. We find similar cysts and hollow spaces in the spinal ganglia in pemphigus.

November 15, 1913.

Contribution to Gastric Diagnosis by the Modified Gluzinski Procedure.—F. Rusca finds that the greater demands made upon the stomach by the Gluzinski procedure result in a clearer demonstration of gastric insufficiency than is obtained by the ordinary test breakfast. On the other hand a hyperacidity or hypersecretion may become manifest through the greater stimulation of digestion, which would have escaped observation had the test breakfast been employed. Gluzinski's method is therefore to be recommended whenever it is needed to diagnosticate an insufficiency of the mucous membrane at an early stage, and in affections of the stomach the signification of which is not made clear by the use of the ordinary test breakfast.

November 22, 1913.

Pernicious Anemia in Pregnancy and Puerperium.—A. Schuepbach says that it must be considered as proved that pregnancy is an important etiological factor in the pathogenesis of pernicious anemia. A knowledge of this causal connection is of great importance to the general practitioner.

Pure Agraphia in a Lefthanded Man Suffering from Left Hemiparesis, Caused by Softening in the Gyrus supramarginalis dexter.—Fritz Seiler concludes that in left handed persons the right hemisphere assumes the functional importance belonging to the left in right handed persons, especially with regard to the function of speech, yet also to other voluntary movements. Through the lesion of certain areas of the right hemisphere in the left handed, movements of the right side of the body are altered without the presence of a true motor or sensory paresis; such an impairment of function is known as apraxia. Motor apraxia may affect chiefly the movements of writing so as to produce clinically the picture of a pure agraphia, while the function of speech may not be impaired by the apractic disturbance. In his case an apraxia in the right arm and hand, together with a paresis of the left arm, was caused by a lesion in the right side of the brain. This apraxia was shown by an awkwardness in certain manipulations, particularly in an inability to write. The writing of the patient exhibited distinctly its apractic character, i. e., he understood written letters and words, but the ability to make them, to direct the pen, was gone. In addition, the patient had paresis of the left upper extremity and a distinct disturbance of the sense of touch in his left hand. This symptom complex was caused by a small focus of degeneration in the right side of the brain, involving the supramarginal gyrus and a small area of the middle third of the posterior central convolution and the angular gyrus.

Hereditary Predisposition to Diphtheria.—W. Spirig reports an investigation of fourteen families, from which it seems as though some families are immune to diphtheria, while others have a distinct predisposition.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT

November 6, 1913.

Initial Stage of Alopecia atrophicans.—Dreuw observes that very disfiguring and, in fully advanced stages, completely incurable alopecia atrophicans begins as alopecia parvimaculata, atrophicans or nonatrophicans, solitaris or conglomerata, in the form of gray or whitish irregular circumscribed areas, in size from a millet to a pea seed. In these areas the hair is almost wholly absent or only broken off stumps are left. The disease has been seen in boys from five to fourteen years exclusively; the epidemic appearance of the disease, as it has occurred in France, makes one suspect its infectious nature, although microscopical and bacteriological examinations have been without result, and for this reason Lesser and Joseph deny its infectious character. In its nonatrophic incipient stage the disease offers hope of cure. The treatment is given internally with subcutaneous injections of sanobalgin, or, two to three times daily, one half to one iron-arsenicfermentin tablet per os; externally, medications in form of alcoholic solutions, soaps, or salves, whose chief ingredients are salicylic acid, sulphur, and resorcin. The sinusoidal current is the best physical means. In advanced atrophy the only thing is to remove the remaining islands of hair with Röntgen rays and to fit a wig.

Hyperemia Treatment in Inflammatory Infiltrative Diseases of the Urinary Passages.—E. R. W. Frank and H. Stanger have constructed a series of electrical apparatus for the thermic treatment of the whole pelvis, particularly of the prostate, seminal vesicles (by way of the rectum), testes, and the male urethra. The heating sounds for the urethra are made in the elastic form as well as in the form of the usual metal sounds. It is to be remembered that these sounds attain a temperature 15°C. higher than the control thermometer placed in the course of the current. The hyperemia attained with these instruments (temperatures of 55°C. are borne without discomfort) causes a rapid softening and permeability of otherwise impassable strictures. Time has been too brief to permit of judging the possibility of relapses.

Function of the Prostate and Treatment of Prostatic Hypertrophy by Indirect Illumination.—J. Jacobsohn thinks it is rational to treat senile prostatic hypertrophy by mesothorium illumination of the seminal vesicles by way of the rectum, because there is a cooperative relation biologically and functionally between the prostate and the vesicles. Three case histories illustrate the favorable results achieved by this method. The future may show that illumination of the colliculus seminalis and the ductus ejaculatorius with cylindrical mesothorium capsules is best, with deep Röntgen rays for the region of the ampullæ and seminal vesicles.

Calcium and Magnesium in Therapy on the Basis of Experimental Results.—M. Kochmann says that the calcium in the animal organism not only serves the purpose of building up the skeleton, but also makes harmless the poisons of normal and pathological metabolism (diabetes, oxalic acid poisoning). Further, it is the catalyzer in ferment action (clotting of blood) and instigator of phagocytosis. Accordingly, the therapeutic results with calcium will serve to balance up a negative calcium deficiency, to effect the neutralization of certain poisons, the promotion of blood clotting, and the preventing of thickening of the walls of the bloodvessels. The role of magnesium in the body is less clear. The experiments of Metzer and Auer showed a paralyzing action of subcutaneous or intravenous magnesium sulphate on certain portions of the nervous system. On the clotting of blood is based the treatment of tetanus with subcutaneous injections of a twenty-five per cent. solution of magnesium sulphate solution. Certain toxic effects of magnesia can be immediately counteracted by intravenous calcium injections. The use of the magnesium preparations for catharsis is well known.

Diagnosis and Therapy of Pulmonary Echinococcus.—E. Behrenroth asserts that, of eosinophilia, precipitin reaction, and complement test and

Röntgen picture, the last is by far the most valuable, and in uncomplicated cases absolutely characteristic. Difficulties in interpretation arise when there are secondary changes in the lung tissue or when the pleura is implicated. Peripheral lung echinococci are subjects for surgical interference, while the central or parabronchial cysts usually give symptoms only when they break into the bronchi spontaneously and are coughed up, after which healing takes place. The author has noticed this termination in three out of five cases.

Röntgen Diagnosis in Bronchostenosis.—J. Ziegler says that in a case of right sided bronchostenosis due to aneurysm of the descending aorta and the arch, a changing air content was observed in the stenosed bronchus within five hours in the lung connected therewith. The Röntgen picture showed this lung to be at one time darker than the normal side and at another lighter. The position of the diaphragm on the right side was lower than on the left when the lung was more filled with air. These appearances, to which Jacobson and Arnsperger have called attention, are due to a kind of valve action of the aneurysm compressing the bronchus. For this reason the dyspnea clinically was strongest in the upright position of the patient, while it was markedly decreased in the horizontal position and still more so in the bending posture. The aneurysm perforated later into the right main bronchus immediately below the bifurcation.

The Defensive Ferment Theory.—Rollmann thinks Abderhalden's theory is able to throw light upon the harm done to paired organs where the first of the pair is diseased. In this way it may be possible to explain the damage done to one kidney when the other is suppurating, sympathetic opthalmia, and perhaps also the injury of one ovary, of one testicle, by the diseased gland of the opposite side.

Cardiospasm and Hypnosis.—Szöllesy relates of a patient, thirty-six years old, whose operation did not reveal the slightest organic change, that he manifested a flow of saliva, dysphagia, frequent vomiting, and asthmatic attacks and became much emaciated. The Röntgen examination showed a marked cardiospasm with much dilatation of the esophagus. The treatment with sounds gave no result. Hypnosis with atropine injections gave a transitory improvement. The symptoms are to be interpreted as a vagus neurosis.

Dangers of Transfusion and Their Prevention.—Ottenberg and Kaliski consider hemolysis, agglutination, and phagocytosis as the dangerous factors in the direct transfusion of blood which has lately again come into vogue. Therefore they recommend the testing of the blood in vitro before transfusion to see what relation the blood of the donor has to that of the recipient and vice versa. Where this is impracticable on account of the lack of time, the nearest relatives should be taken for the donors. The seriousness of the transaction is great when there is agglutination of the cells of the donor by the serum of the recipient.

Abortive Treatment of Syphilis.—W. Lier reports that in twenty-seven cases of primary syphilis excision of the sclerosed tissue with combined mercury salvarsan injections gave good results, with permanent negative Wassermann reactions. Seven cases gave a negative result. The result in nine out of ten cases was also negative where mercury alone was given for abortive treatment.

November 20, 1913.

Meningitis Following Follicular Angina.—E. Siemerling tells of a boy cadet, fifteen years old, who, at the close of a febrile follicular angina, manifested marked symptoms of meningitis, clouded consciousness, somnolence, alternating with great excitability, vomiting, slowing of the pulse, and stiffness of the neck. Lumbar puncture, which was performed four times, yielded each time fifteen c.c. of spinal fluid, showed pleocytosis and high pressure. The punctures together with inunctions of unguentum cinereum brought about improvement and recovery.

Present State of Radium Therapy for Malignant Growths.—E. Schlesinger, considering the enthusiasm which exists at Halle in regard to illumination of malignant growths and the skepticism found at Vienna, arrives at the following conclusion: "With the exception of purely superficial skin cancroids no malignant new growth ought to be made the subject of ray treatment, which offers the slightest hope of radical removal by the knife. He who deserts this standpoint harms the patient, and discredits the method. The undebatable field for indication of radium and also of mesothorium, is the treatment of inoperable cancer and operative relapses." When this therapy is applied, the largest doses should be given, with the greatest possible reduction of the filter thicknesses, and avoidance, as far as possible, of secondary ray illumination.

Hemorrhage in the Second and Third Stages of Labor.—R. Zimmermann says that the procedure recommended by Henkel, of clamping the parametria of the pulled down uterus, by means of two laterally applied Muzeux's clamps, has given excellent results in post partum hemorrhage when due to a ruptured varix, a cervical tear, insufficiently detached placenta, or to retention of pieces of the placenta. The dangers in applying the clamps are, injuries to the bladder, clamping of the ureter, and opening of the cul-de-sac, even compression of an intestinal coil lying there; these, however, with careful technic, can be avoided and are without serious results. The danger of infection is less than in any other method.

Rhachitis of the Nose and Its Relation to Bronchial Asthma.—Walb avers that the nose naturally takes part in rhachitic changes, and this nasal rhachitis is prominent in the production of bronchial asthma. In a number of cases he was able to minimize the asthmatic attacks by the administration of phosphorus for long periods.

Valamin, New Hypnotic and Soporific.—Bräutigam says valamin is a valeric acid amylen hydrate and a good sedative (two to three pearls) and hypnotic (three to four pearls). The remedy can be taken only after meals.

Intravenous Treatment of Lupus vulgaris with Gold Potassium Cyanide.—Franz V. Poór has treated twelve cases of lupus vulgaris by intravenous infusion of this preparation (single dose 0.01 to 0.05 gm.) after the method of Bruck and Glück and reports good results. A treatment of twelve to fourteen infusions was followed by a pause of two

to three weeks and then another treatment was given. Even in severe cases the therapeutic results were better than are seen with tuberculin and other means.

November 27, 1913.

Yatren in Diphtheria.—F. S. Freund states that yatren possesses strong bactericidal action, is almost wholly nonpoisonous, does not affect healthy tissue, is absorbed evenly from the mucous membrane, and excreted by the kidneys undecomposed, without harming them; on account of its sweet taste it is well liked by children and has a slight laxative effect, for which reason the doses at times must be cut down. In eighty cases of diphtheria it was given alone or in conjunction with the serum; locally but mostly internally (0.2 to 0.4 gm. two to three times daily) with very good results, notwithstanding the fact that its administration did not always prevent a fatal issue. It is recommended as a prophylactic and in the treatment of bacilli carriers.

Treatment of Diphtheria with Intravenous Serum Injections and Yatren.—W. Kausch contrasted injections with noninjections in treating cases of diphtheria during an epidemic. The noninjected cases had without exception a much more severe course, thus proving that to the diphtheritic serum must be ascribed decided favorable action. This was plainly demonstrable when the serum was given intravenously (500 to 1,500 u.) and in some instances intramuscularly (1500 u.). It seems that the author does not make subcutaneous injections. The yatren, given locally and internally, is considered to be a valuable adjunct to other antidiphtheritic remedies; it causes a rapid dissolution of the exudates, disappearances of the fetor, healing of the bacilli carrier, and can be substituted for the prophylactic injection of serum.

LYON MÉDICAL.

December 7, 1913.

Curative Value of Subcutaneous Injections of Turpentine Oil in Children.—Péhu and Pillon report observations in seventy-eight cases on this subject. They found that, injected deeply in the abdominal wall, one c. c. of turpentine oil in children over two years of age, and 0.5 c. c. in younger children, invariably led to the formation of a suppurative focus, more or less plainly evident and either circumscribed or extensive. In but one patient did it appear clinically that no pus had been formed, and in this case the autopsy showed that, on the contrary, an abscess had resulted. In some cases—especially of tuberculosis—in which the disease present is running a rapidly fatal course, there is no external appearance of pus formation; where the disease subsides, however, there is a tendency for an abscess previously latent to become evident. Good results from the procedure were noted almost exclusively in primary bronchopneumonia. In eighteen of thirty-four patients the injection was soon followed by a lowering of fever and improvement in the general condition, followed by recovery. In thirteen cases there was no effect, and death ensued; while in three the favorable termination did not seem attributable to the turpentine. In bronchopneumonia secondary to diphtheria, measles, and scarlatina, in diphtheritic myocarditis, and in tuberculosis of various types, results were less favorable.

Pneumococcic Herpetic Stomatitis.—E. Weill and A. Dufourt call attention to the fact that among the herpetic forms of stomatitis and pharyngitis, there is one which is equivalent to a pneumonia, being due to a local pneumococcic pullulation and giving rise to constitutional disturbances and a febrile reaction similar to that of pneumonia.

Biological Action of Radium.—T. Nogier exposed the seeds of four different plant species to graded quantities of radium emanations, and observed the subsequent effects on growth when they were planted. The larger doses caused a complete loss of sprouting power, though the different seeds showed variations in the amount required, small seeds proving more resistant than the larger. A dose just insufficient to sterilize the seed resulted in a stunted, atrophic growth, soon followed by signs of senescence and death of the plant. Intermediate doses caused slow and incomplete growth, with delay in blooming. Small doses caused initial retarded, scanty growth followed in two months by growth so rapid that the plants eventually became larger than the untreated controls, though flowering was somewhat delayed. These last observations demonstrate the excitant effect of small doses of radium, and probably, by analogy, may be said to imply danger in the clinical use of radium where the amount available is insufficient and the exposures too brief.

PARIS MÉDICAL

December 6, 1913.

Transplantation of Strip of Scapula to Spinal Column in Pott's Disease.—L. Ombrédanne deems the removal of a long strip of the tibia, as practised in Albee's operation, an unnecessarily difficult procedure and one capable, in children, of interfering with normal tibial development through injury to the cartilages. At the suggestion of an assistant, Lance, he has substituted for the tibial fragment a bony strip consisting of the entire internal border of the scapula. The operation has been done five times, and no disturbance in the motility of the corresponding upper limb has resulted. The incision extends from a point level with the upper angle of the left scapula, vertically downward, one fingerbreadth from the border of this bone, to the level of the second spinous process above the seat of spinal deviation. It is then curved abruptly inward and across the spinal column, horizontally. After the flap has been dissected up, the trapezius muscle is severed one fingerbreadth within the scapular border, and next the rhomboid. The border of the bone is then drawn up with traction forceps, the supraspinati and infraspinati detached from it, and a strip of the bone 1.5 cm. broad cut off with strong scissors, complete liberation being accomplished by detaching the subscapularis. The latter is then sutured to the infraspinatus and rhomboid, and the two flaps of the trapezius likewise joined. In attaching the bony fragment to the spinal column, Albee's technic is followed, except that the spinous processes are divided exactly in the midline, the two sections being then spread

apart to form an angle in which the strip of scapula is placed. The heavy paravertebral fasciæ are then freed and sutured together over the transplanted bone with close interrupted catgut sutures, and the wound closed without drainage. The results as regards healing of the bony fragment with the spine in the five cases were good, as shown at autopsy in one child that died four months after the operation, from tuberculous meningitis; but the therapeutic results were not as good as in Albee's cases, the spinal curvature increasing notwithstanding the operation in four instances. The cases were of an advanced type, and could not be given the benefit of sea air.

Respiratory Disturbances in Typhoid Fever in Children.—Nobécourt and F. Mercier report two cases and point out that disturbances of the respiratory rhythm at the outset or during the course of typhoid fever in children, sometimes with Cheyne-Stokes respiration and associated with symptoms of cerebromeningeal irritation, may at times suggest a diagnosis of tuberculous meningitis. As a matter of fact, however, their presence does not impart any unusual degree of danger to the typhoid infection.

December 15, 1913.

Delayed Response to the Wassermann Test in Syphilis.—H. Gougerot reports cases in which the Wassermann became positive only several months after syphilitic infection, the patients having meantime received active mercurial treatment. He advises that in all genital lesions repeated dark ground examinations be made, but that the diagnosis of syphilis be not wholly rejected if negative results are obtained. Where the surgeon is in doubt prophylactic treatment should at once be begun, consisting of a series of twenty daily injections of soluble mercurial salts in each month for six successive months, followed by the similar administration of pills for six months more. Meanwhile the Wassermann test should be repeated every month for six months, then in the ninth and fourteenth months. If delayed syphilis appears or there is merely a positive Wassermann, systematic mercurial treatment for four years should be begun. If not, judgment should be suspended until the twelfth month. Beyond this time, any remaining doubt should not be allowed to interfere with marriage, although, by way of precaution, the Wassermann should be repeated at the twenty-fourth, thirty-sixth, and forty-eighth months.

PRESSE MÉDICALE.

December —, 1913.

Physiologic Rôle of Aminoacids and Their Quantitative Estimation in the Urine.—L. Lematte considers it established that a given protein and a mixture of its constituent aminoacids are equivalent from the nutritive standpoint. The function of these acids in the economy is so important as to lead Delaunay to state that "the tissues require aminoacids and not albumin." Union of fifteen molecules of glycocoll with three of levoleucina yields an amorphous body giving all the reactions of peptone, and Abderhalden has succeeded in maintaining nitrogen equilibrium with a diet consisting solely of aminoacids, sugars, fatty acids, and glycerin. The building up of specific albumins requires that the absorption of aminoacids shall have taken place in the alimentary tract; if injected into the blood, these acids are eliminated in the urine. Lematte describes a new, simplified procedure for the estimation of urinary aminoacids: In a stoppered 100 c. c. graduate place thirty c. c. of urine and fifty c. c. of a thirty per cent. solution of c. p. phosphotungstic acid; shake, allow to stand ten minutes, add four gm. of pure magnesium chloride and distilled water to 100 c. c. Shake, and allow to stand until the supernatant fluid is clear—about two hours. Decant the clear fluid on a filter, add ten drops of a saturated alcoholic solution of phenolphthalein and then fifty c. c. of normal sodium hydrate solution. The precipitate is now filtered off and the colored filtrate titrated against a standard half saturated formaldehyde solution, colored with phenolphthalein and alkali. The amount of decinormal sodium hydrate added to reproduce the standard tint affords an exact measure of the urinary aminoacid nitrogen.

December 13, 1913.

Antigonococcic Serum Therapy.—R. Debré and J. Paraf state that the failure of antigonococcic therapy, as hitherto practised, is easily explainable from the fact that the gonococcus, like the meningococcus, does not produce its effects with a diffusible toxin, but acts directly on adjacent tissues with its endotoxin. Just as Flexner found it necessary in cerebrospinal meningitis, to inject the serum into the spinal canal, so in gonococcal infection a serum must be injected at the seat of pullulation of the organisms. Furthermore, it must be administered early, in large amount, at frequent intervals, and in polyvalent form. The authors have succeeded in preparing an active antigonococcic serum by alternate subcutaneous and intravenous injections of both living and autolyzed gonococci in rabbits. The injections were made every other day, then every four days, in rapidly increasing doses, and with numerous strains of gonococci. A satisfactory method of standardizing the serum was also discovered, consisting in the injection in the anterior chamber of a rabbit's eye, after evacuation of a few drops of aqueous humor, of two to four drops of a strongly turbid emulsion of a thirty-six hour culture of freshly isolated gonococci. This leads constantly to a panophthalmitis ending in complete atrophy of the eye. Repeated injections of the antigonococcic serum, begun four to thirty-six hours after the inoculation with gonococci, uniformly arrested the morbid process, the eyes recovering completely save for small scars at the sites of injection. Normal rabbit serum or an antimeningococcic serum, similarly used, were without effect. The value of the antigonococcic serum was also shown in induced gonococcic suppurative spinal meningitis in monkeys, two injections of 0.5 c. c. of the serum into the spinal canal causing recovery in animals otherwise doomed. In applying this serum to human practice, a series of procedures adapted for different localizations of the disease will have to be worked out. In the two cases of acute gonococcal urethritis so far treated by repeated intraurethral injections of the serum, very encouraging results were obtained.

Abderhalden's Reaction in the Diagnosis of Pregnancy.—Berthe Sabin applied this reaction, the technic of which she minutely describes, in seventy-two cases. In forty-three cases the result was positive, with subsequent clinical confirmation of the diagnosis. In sixteen cases the reaction was negative, and no pregnancy followed. Five puerperal women gave positive tests four to fifteen days after delivery. In one case at the third month of pregnancy, with copious vomiting, the reaction was negative. In three women that had aborted not over a week before, the test was positive in two instances, while in four cases in which abortion had taken place about two weeks previously, the test was negative. Sabin deems the reaction of much value, considering the sometimes insurmountable difficulty hitherto experienced in diagnosticating certain ectopic gestations, fibromyomata, and pelvic tumors.

BRITISH MEDICAL JOURNAL.

December 27, 1913.

Nature of Old Age and of Cancer.—Hastings Gilford regards the development of the human body as a whole, or of any portion of the body, as describing a curve which ascends from the time of the union of the two genetic elements to a maximum at which there is the greatest development of specialization in function and the least in the general characters, such as those of multiplication. The curve then begins to descend with a gradual and progressive loss of differentiation in form and function and an increasing tendency of certain cells to multiply. Decay of certain cells during advancing age leads to their becoming bodies foreign to their host, and this, in turn, calls forth the phagocytes, which, walling off the foreign body, become themselves transformed into fibrotic tissue. The three characters of old age are, decay, fibrosis, and proliferation of nonspecialized cells. As the more specialized cells retrogress with a loss of specialization they take on an increased tendency to multiplication. "Reversion . . . is the keynote of the proliferation of old age wherever it occurs." Granting the foregoing statements regarding the anatomy and biology of old age as being true, Gilford believes that we can explain cancer in terms of senility. He says: "Thus, the typical cancer is made up of a collection of cells native to the part, but of more embryonic type, and these cells are surrounded by collections of round indifferent cells derived from fibrous tissue and from other low class structures, such as endothelium and leucocytes. The fibrous tissue, moreover, is often increased, as it is in the senile organ. These changes may be interpreted as follows. Certain somatic cells become aged while the tissues around them are still in a state of comparative youth. They express their senility by returning to a more embryonic form, and as they do so they increase in number, the faculty of multiplication being one of the manifestations of regression. But as this qualitative change takes place they become alien to their surroundings, and, as foreigners or rebels, stimulate into action the mechanism of phagocytosis. Not only is there an incursion of lymphocytes into the parts, but the connective tissue and endothelial cells in their vicinity revert to their embryonic state and begin the work of phagocytosis. But as a fact they have to deal with neither the effete products of molecular degeneration nor with an inert foreign body, for though virtually strangers, cancer cells are by no means inactive. Hence the attack is abortive, except in so far as the phagocytes, by forming new fibrous tissue, tend mechanically to limit the proliferation of the cancer cells. For in the meantime the fixed connective tissue cells are themselves rapidly proliferating, with the result that when they cease their activity and return to their resting stage, groups of cancer cells are cut off by intersecting bundles of fibrous tissue, while the whole mass is surrounded by an incomplete capsule of the same structure. This tends to limit the encroachment of the growing cancer, and were it not for the lymph spaces or capillaries, which are the gaps through which the growing cells escape, no doubt the limitation and strangulation of cancers would occur far more often than they do. It will be noticed that the more nearly the cells of a cancer approach the embryonic state the more rapid will be the growth, the less opportunity for fibrosis, the more malignant the cancer." Gilford maintains for this theory that it is satisfactory, based as it is upon facts reasonably interpreted, and that it covers all of the ground.

Intratracheal Insufflation of Ether.—Francis E. Shipway finds the following advantages: 1. The maintenance of a free airway under all conditions of spasm or of operation about the head or neck. 2. There is an even and constant administration of warmed ether vapor, which is weak and completely under control. Anesthesia can be maintained uniformly light for long periods. 3. The anesthetist is out of the way of the operator. 4. The recurrent stream of air effectually prevents aspiration of any material from the mouth or pharynx. 5. The slight respiratory movements facilitate operations on the abdomen above the umbilicus. 6. Operations which may lead to opening of the pleura can be done without danger. 7. Shock is greatly diminished, as are vomiting and postoperative depression. The author has used the method in a large number of different cases, including almost all types of severe operations, and has found that the aftereffects and complications are certainly as slight as from ordinary ether anesthesia. Pneumonia is far less frequent, in the hands of some anesthetists. Disadvantages consist in the expense of the apparatus and its cumbersome bulk, and in the difficulty encountered in the introduction of the catheter. The latter disadvantage can soon be overcome by practice.

LANCET.

December 27, 1913.

Concussion Cataract.—Percy Dunn calls attention to the frequent occurrence of this condition following injuries of the eyes. The views of authorities are conflicting, whether a rupture in the lenticular capsule is an essential factor or not. A case is reported in which cataract followed the slight concussion caused by a flying chip of steel, not larger than a sixteenth of an inch, which struck, but did not penetrate the eyeball. The importance

of this case lies in the fact that the blow upon the eye was slight, and in the common nature of the injury, which is one often sustained and usually untreated. It is highly improbable that in this case the blow was sufficient to cause a rupture of the lenticular capsule, though this fact cannot be proved.

Relation of the Thyroid to Antitoxin.—Rupert Farrant's results are best given in his own words: "Certain diseases, and especially certain toxemias cause hyperplasia of the thyroid gland in man and animals." Among these diphtheria toxin has been examined especially, and it is found that a small dose is sufficient to produce hyperplasia in a susceptible animal, but that as immunity is acquired the thyroid no longer undergoes hyperplasia under the toxin. The hyperplasia thus decreases as the antitoxic value of the serum increases. The thyroid gland, in other words, is protected from the action of the toxin by the presence of antitoxin in the serum. There is no reason to suppose that any special relation exists between antitoxin formation and the thyroid gland—for example, the latter is not antitoxic itself. In some cases commercial antidiphtheritic serum fed to rabbits caused death with the same symptoms as thyroid feeding; this may be due to the serum of partially immunized horses containing an unusual amount of thyroid secretion from the hyperplasia. But this could not be controlled, as the amount of iodine in pure serum was too small for accurate estimation. The pure antitoxic serum does not appear to contain any estimable increase of iodine."

BOSTON MEDICAL AND SURGICAL JOURNAL.

January 1, 1914.

Carbon Monoxide Poisoning.—William H. Robey discusses poisoning with illuminating gas and thinks prophylaxis of the greatest importance. It has been sought to regulate by law the sale of poisons and firearms, and the general distribution to the public of a dangerous gas so readily available for selfdestruction may well be regarded with concern. It has been held that we should return to the use of coal gas, rather than water gas, on the ground that it is a less powerful poison, and that the majority of cases would be discovered in time to save their lives. In the treatment of acute poisoning the patients received principally local heat, fresh air, and cardiac stimulation. In a good many cases oxygen was given, although some authors regard it as useless. In a few selected cases venesection was used with apparent relief.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

January 3, 1914.

Intranasal Treatment of Dysmenorrhea.—E. Mayer refers to the fact that Fliess, in 1897, first called attention to the hitherto unknown and remarkable results obtained by treatment of the nose for the relief of dysmennorhea and labor pains. The relationship between the nose and uterine organs was limited to certain points in the nasal mucosa which he termed the "genital spots." These are the tuberculum septi and the anterior portion of the inferior turbinate in either side of the nose. Of the ninety-three patients treated by Mayer, no report was received from twelve. Of the remaining eighty-one, no relief was obtained in nineteen, fourteen were improved, and forty-eight were cured. Three were treated because of amenorrhea, and in each the flow became regular. Four became pregnant, two for the first time. One half of the number were married. Conclusions: 1. Permanent relief is obtainable by intranasal treatment in from fifty to seventy-five of the cases. 2. Trichloracetic acid applied to the genital spots four times, at intervals between menstrual periods, is usually sufficient to obtain lasting results. 3. It affords an additional field of usefulness to our therapeutics.

Pellagra: First Report of the Thompson-McFadden Pellagra Commission.—J. F. Siler, P. E. Garrison, and W. J. MacNeal present the following conclusions: 1. The supposition that the ingestion of good or spoiled maize is the essential factor of pellagra is not supported by their study. 2. Pellagra is in all probability a specific infectious disease communicable from person to person by means at present unknown. 3. No evidence has been discovered incriminating flies of the genus *Simulium* in the causation of pellagra, except their universal distribution throughout the area studied. If it is disseminated by a blood sucking insect, *Stomoxys calcitrans* would appear to be the most probable carrier. 4. They are inclined to regard intimate association in the household and the contamination of food with the excretions of pellagrins as possible modes of distribution of the disease. 5. No specific cause of pellagra has been recognized.

Gastric Ulcer from Overworking the Stomach.—R. H. Pierson has within the past few months observed seven cases of gastric ulcer, in the town of Tanana, Alaska, which originated under conditions not encountered in the experience of the ordinary practitioner. The essential factors which all these cases had in common were the following: 1. In all instances the food was rough. 2. There was a large proportion of nitrogenous food. 3. The cooking was poor. 4. Few green vegetables were used. 5. The meats eaten were either salt or dark meats, mostly game. 6. On account of the hard life which these patients lived, and the conditions of extreme cold, they became accustomed to eat immense quantities of food which had a high caloric value.

Potassium Mercuric Iodide.—D. Macfarlan states that this agent, as an antiseptic, is greatest. It is here practically universal in its possibilities, for in great dilutions its local effects and toxicity are insignificant, while its germicidal qualities still remain high. Thus, 1, it may be taken internally in doses of five drops of a one per cent. solution without toxic effect. 2. A one per cent. solution has but slight irritant action. 3. A dilution of one to 80,000, or nearly one thousandth of one per cent., exhibits marked germicidal powers. Cases of erysipelas, acne, pustular skin infections of all kinds, lupus, and psoriasis show remarkable results under its use. The purulent discharge in many minor surgical cases, such as infected burns, old leg ulcers, and ragged wounds, is rapidly cleared up; and even when the affection is somewhat subcutaneous, as in felons and boils, when there is as yet no pointing or definite formation of pus, a wet dressing of one

per cent. potassium mercuric iodide will usually reduce the prolonged course of the case, and frequently will abort it altogether. It is also excellent for the sterilization of instruments, and the tendency which it has to cause tarnishing, if left too long in contact, can be easily overcome by the addition to the solution of a little sodium bicarbonate.

MEDICAL RECORD.

January 3, 1914.

Unresolved Pneumonia.—J. S. Thacher says that while according to some authorities this matter would seem to lie more in the domain of mythology than pathology, many others assert, with no appearance of doubt or mental reservation, the occasional long delayed resolution of pneumonic consolidation. On account of these contrary opinions, he has reviewed the experiences of two hospitals with which he is connected, comprising a list of 1,252 cases of pneumonia observed during the past few years. In only two of these was the diagnosis of delayed resolution entered on the discharge card, showing the effect of the prevailing teaching; but in 200 of the cases, which are all that he has been able to study with some care, he finds thirty-four, or seventeen per cent., in which the fever ran for three weeks or longer. Of these, in fourteen the condition was so mild that, even if they possibly were true instances of unresolved pneumonia, they were of little clinical importance, except to show that such a delay in recovery, if the other symptoms are mild, is usually followed by perfect restoration to health. In the remaining cases there were six with miscellaneous complications, nine of empyema or abscess, one delayed resolution with abscess, one probably delayed resolution with abscess, and three probably simple delayed resolution. This small series of cases tends, then, to indicate this chief conclusion, that of patients who, after pneumonia, are quite ill with a prolongation of fever, more are suffering from the presence of pus, in pleura or lung, than from any other abnormal condition. On the other hand, many mild prolongations of fever occur without serious import, and among the cases with prolonged high fever there are some which clear up without manifestations of suppuration or tuberculosis, and are probably instances of simple delay in resolution. As suppuration in the pleura or lung is a not infrequent event after pneumonia, and it is most important to remove the pus if it is there, we should, if possible, find the means of recognizing its presence, and especially of distinguishing it from delayed resolution. Physical signs are not infallible in differentiating fluid from consolidation, and the thermometer and the microscope may also fail. We are therefore thrown upon the exploring needle as our main reliance in this uncertainty, but even here there are two discouraging circumstances: the needle may fail to find the pus, and it is not without danger. Still, such exploration must be done, when, after careful examination and watching, it seems reasonable to suspect the presence of pus, and its probable location is evident. Here the radiogram is of great help.

Acute Appendicitis in Infancy and Childhood.—W. G. Vincent finds that acute appendicitis occurs under the age of fifteen years much more frequently than is commonly supposed, and demands consideration because of its frequency, and of its often insidious development, obscure symptomatology, special difficulty of diagnosis, and other peculiarities when affecting infants and children. The disease is most frequent in patients from five to fifteen years, rather uncommon under five years, and rare under two, and male children appear to be more often affected than females. The conditions we are most frequently called upon to differentiate are, gastroenteritis, pneumonia, diaphragmatic pleurisy, and intussusception. Among others occasionally to be differentiated are, subphrenic abscess, mesenteric glandular tuberculosis and localized tuberculous peritonitis, general peritonitis of unknown origin, fecal impaction, typhoid fever, strangulated hernia, pyosalpinx, inflamed ovary, or ovarian dermoid cyst, pyelitis affecting the right kidney, stone in right kidney or ureter, inflamed undescended right testicle, duodenal ulcer, intra-abdominal tumors, acute infections of right hip joint, and malaria. The author believes that, except in rare instances, we should no longer consider that there is a medical treatment of acute appendicitis. The preoperative treatment consists in rest and fluid, or no diet except water, and the ice bag as a placebo, if thought advisable, while waiting to confirm the diagnosis; no active catharsis while any doubt exists. After the diagnosis of acute appendicitis is made, possibly the ice bag or coil and opium in some form may be employed while preparation is being made for the operation, which should be done as soon as possible.

Effect of Typhoid Vaccine on Sugar Output in Diabetes.—F. A. Prendergast, having seen the statement that in diabetics the sugar disappears from the urine during an attack of typhoid fever, and well on into convalescence, thought it would be of interest to know the effect of typhoid vaccine on the sugar output in diabetic patients. The experiment was tried on four hospital patients. These were first put on the regular hospital diabetic diet, and an attempt made to get their average twenty-four hour amount of sugar. Then, with patients still on same diet, treatment was begun with typhoid vaccine—fifty to 100 million a dose and at four day intervals; the result being that the sugar output was very markedly reduced. After a period of from three to four weeks the vaccine was discontinued, and the sugar amount taken at intervals. At the end of another four weeks a return to vaccine treatment was made, and the sugar output was again checked.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

November, 1913.

The Treatment of Puerperal Streptococcemia with Intravenous Injections of Magnesium Sulphate.—Harrar employs a two per cent. solution of chemically pure magnesium sulphate prepared with freshly distilled water. The reservoir containing the solution is held at not more than one foot elevation and 400 c. c. are allowed to enter the vein, this taking about twenty minutes. The author reports fourteen cases in which this method was used.

In five there was a streptococcic bacteriemia as proved by blood culture. The other nine were all severely infected women with high temperatures, and acutely ill with streptococcic toxemia, with pure growths of streptococci on uterine culture, but with negative blood cultures. He concludes that magnesium sulphate is of more value early in the course of the infection than after secondary localization has occurred. Its action seems to be chiefly on the organisms circulating in the blood. It shortens the course of the bacterial toxemias in which the bacteria cannot be demonstrated in the blood by cultures, and anticipates the establishment of a bacteriemia, and finally, it has reduced the mortality in puerperal bacteriemia, especially in streptococcemia, the most fatal form of puerperal infection, from ninety-three to twenty per cent.

Local Anesthesia in Operations for Hernia.—Jacobson reports thirty-six operations upon twenty-eight patients, eight of these being operated upon for double hernia. In these cases he used a solution of novocaine, one half per cent., adding three to ten drops of adrenalin solution (one in 1,000) to each ounce of the former. Attention is called to the fact that it is absolutely essential that fifteen to twenty minutes elapse from the completion of the injections to the beginning of the operation. Attempts to operate before the expiration of that time will be met with failure. In the foregoing cases the operations were uniformly painless, without nausea or vomiting and without the slightest toxic effect from the anesthetic solution. The sensation of the operation is described by the patients as that of a pulling or tugging on the parts. In a few instances some pain was complained of when working about the hernial sac or peritoneum. This can be overcome by a separate injection of the neck of the sac early in the operation. As the adrenalin acts as a hemostatic, there is some danger of a postoperative hematoma; it is therefore necessary to ligate all bloodvessels as soon as they are divided.

Diagnostic Hysterotomy.—Dickinson, in calling attention to the many difficulties in the diagnosis of uterine conditions makes a strong attack upon the use of the sharp curette. He avers that it is dangerous, punctures of the fundus being common and gouging out of considerable portions with damage to viscera, is not unknown; also that it is incomplete, particularly in the fornices where the tubes enter the uterus. It is incompetent in that much may be overlooked. The author states that he has met cases where the uterus alone attracted attention—persistent hemorrhage, occasional leaks, indicative of some chronic condition—where curettage had failed to establish a diagnosis, or where he had lost confidence in it and felt the necessity of exploration in order that sight and touch might make things more conclusive. In these conditions a vaginal section, the fundus brought down anteriorly, with hysterotomy, is without danger and gives one the confidence of a positive diagnosis.

The Use of Iodine in Abdominal Surgery.—Frank takes up the question of the use of iodine intraperitoneally. To determine whether or not it was harmful when so used he conducted some fifty experiments upon dogs. He concludes that though tincture of iodine is effective as a means of sterilizing the skin, it has its disadvantages. If the intestines come in contact with the iodine, adhesions will undoubtedly take place in the area thus exposed, owing to the action of the iodine as an irritant to the peritoneum. Under no conditions should iodine or its tincture be poured into the peritoneal cavity. Frank found, also, that in the normal peritoneal cavity iodine in alcoholic or aqueous solution is, in sufficient quantity, distinctly toxic.

AMERICAN MEDICINE.

November, 1913.

Intestinal Putrefaction; Its Treatment.—J. W. Beveridge asserts that the main pathological cause of intestinal putrefaction is bad food, food improperly cooked, contaminated, eaten in too great quantities, unbalanced with reference to carbohydrates and the proteid radical. Other causes may be imperfect metabolism during digestion from any change in the stomach, pancreas, or liver, and mechanical defects. Intestinal putrefaction always results when stasis is present, and in cases of this kind the treatment must necessarily be based upon the findings of the radiograph, and how seriously the food is interfered with in complete digestion. In general, treatment depends a great deal upon how readily patients can be accustomed to follow instructions, and made to understand the necessity for doing without certain foods. In the treatment the intestine must be aided by medication to overcome any defects which may be present, and prevent the absorption of toxic substances. For this purpose the most successful agent is the culture of *Bacillus bulgaricus*. Sodium cacodylate, hypodermically, is an excellent adjuvant in cases with slight secondary anemia. The glandular extracts are useful for aiding oxidation, especially in the obese. Summarizing: 1, The prevention of intestinal putrefaction is essential for the maintenance of good health; 2, this can be done in every instance, provided the cooperation of the patient is secured; 3, x ray examinations and laboratory tests are necessary for a complete diagnosis; 4, in overcoming this condition the possibility of nephritis, diabetes, and other serious ailments is guarded against; 5, surgical interference is indicated only when palliative measures are of no value.

Scientific Disinfection; An Essential Precaution after Infectious Disease.—J. T. A. Walker says that many of the highest authorities, American and foreign, who declare that the tuberculosis germ may remain active outside the human body for months, even years, adduce evidence to show that the disease may be transmitted through the habitation of houses infected with the germs left behind by former tenants, and urge the disinfection of all such houses. That certain bactericides are capable of killing tubercle bacilli is a demonstrable fact, but it would be a mistake to suppose that all such preparations possess this power. Fumigation with formaldehyde, for instance, though very commonly employed, is at the best an inefficient method of house disinfection, and quite useless in cases of tuberculosis. An editorial article in the New York Medical Journal for October 19th points out very clearly that without exactly the right proportion of steam in the room under treatment for-

maldehyde fumigation is absolutely unreliable. In reference to the difficulty of introducing the exact proportion of steam, compare with this the ease and accuracy with which a standardized disinfectant can be prepared and applied in the form of a fine spray. The latter is the only really reliable method of house disinfection, and should never be omitted after consumption or, indeed, after any infectious disease.

NEW YORK STATE JOURNAL OF MEDICINE.

November, 1913.

Accidental Wounds in Hernia Surgery.—William B. De Garmo draws upon his own experience of two thousand hernia operations, and discusses solely the question of injury to the urinary bladder. He says that the bladder may protrude through a large hernial sac; it may be drawn into the hernia by the peritoneum or the fascia of the transversalis; or an area of the bladder mucosa may be herniated through the muscular coat of the viscus. The bladder is greatly more liable to be present in a direct hernia than in an indirect one; so much so, that its presence should be suspected in every case of direct hernia. There is usually some complaint on the part of the patient of disturbance of urination when the bladder is herniated. In such hernias, the tumor due to the bladder seldom drops down into the scrotum or labium in inguinal hernias. The diagnosis before operation is usually very indefinite and very difficult, and the same may be said to be true to a less extent of the diagnosis at operation, when, if the bladder wall has been thinned out, it may be almost impossible to distinguish it from a normal hernial sac. If two sacs are found in an inguinal hernia, the lower and inner one is almost certainly the bladder. Perhaps the most satisfactory method of determining the presence or absence of the bladder in a doubtful case is that of examining the tumor from the inside through an incision into the abdominal cavity high up in the canal. Injury to the bladder entails a high mortality unless it is repaired correctly and immediately. The best way is either to invaginate the injured portion of the wall and close the pocket by a pursestring suture, or, if there has been no tear in the wall, to reduce the herniated organ and then to suture it toward the mid line by means of the prevesical tissue, which is to be attached to the conjoined tendon. The author proceeds to give brief summaries of thirty-two cases of herniated bladder from his own experience, and concludes his paper with a very comprehensive bibliography.

Human Serum Treatment for Hemorrhagic Diseases of the Newborn.—John E. Welch believes that the bleeding is often due to some metabolic disturbance, which does not necessarily arise from a bacterial disease, but which causes injury to the vascular endothelial cells. By way of explaining the mode of action of the injected human serum, he suggests that its sole value is in the nature of a readily assimilated food which restores the injured endothelial cells to normal. Certainly the use of subcutaneous doses of one ounce of human serum, repeated as often as every four hours in severe cases, yields better results than any other known method and is not followed by any ill effects. The use of foreign serums may actually increase the bleeding by reason of a cytolytic action on the endothelium. Transfusions of whole blood are fraught with the dangers of hemolysis, and are extremely difficult in infants.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held December 18, 1913.

The President, Dr. WILLIAM M. POLK, in the Chair.

This meeting was held under the auspices of the Section in Pediatrics.

Medical Sociology in the Public Schools.—Dr. MARY SUTTON MACY'S paper appeared in our issue for December 13, 1913.

A Study of the Results of Tonsil Operations on Public School Children in New York City.—Dr. GERHARD H. COCKS'S paper appears in full on page 113.

The Child in the Tuberculous Milieu.—Dr. MAURICE FISHBERG'S paper was based on a study of 217 families in which either the father or the mother, or both, were found to be tuberculous. These families were found living under conditions greatly favoring the dissemination of the disease. Of 274 consumptives found among these people, only 112 slept in a separate room, and 136 slept in beds by themselves; the rest shared their rooms or beds, or both, with other persons. Their economic condition could be summed up by saying that they were at the end of their resources, otherwise they would not have applied for relief. Inasmuch as these children were burdened by both a deleterious environment and a tainted heredity, they should offer splendid material for the study of the effects of the tuberculous milieu on children. Of the 1,129 persons comprised in this group of families, 692 were under fifteen years of age. Nearly all of these children were reared on breast milk, only 5.5 per cent. having been brought up on artificial food. The proportion reacting to tuberculin was not found to have been influenced by the manner of feeding during infancy. Some mothers suffering from tuberculosis were found suckling their infants and the latter apparently thrived as well as others of their class; most mothers, however, infected their children with active tuberculosis.

The weight of the infants was fairly normal, but the children over four years of age were deplorably short of weight when compared with others of their class. At the age of eight years, they lacked 3.67 kgs. and at fourteen even seven kgs. on the average. During the six months they were kept under observation, one half remained stationary in weight, forty per cent. had lost, and ten per cent. had gained in weight. The form and shape of the chest was normal in 62.5 per cent. of the children; 27.5 per cent. had flat chests, and ten per cent. had rhachitic chests. The large proportion of flat chests was not necessarily an indication of the *habitus phthisicus* because Jewish people were known for their flat chests. In eight per cent. of the children, enlarged thoracic veins were

found. In children in whom a diagnosis of tuberculosis was made, 37.5 per cent. showed these enlarged veins and three fourths were unilateral. Of the children showing signs of latent tuberculosis, twenty-five per cent. had enlarged thoracic veins.

The cervical glands were swollen in 67.8 per cent. of the children; swollen glands in the axilla, groin, etc., were exceedingly rare. Only one child was found with enlarged supraclavicular glands, and this child had other symptoms and signs of tuberculosis. Hyperplastic conditions of the nose, throat, and pharynx, such as enlarged tonsils, adenoids, chronic rhinitis, etc., were found in 58.6 per cent. of the children. Scrofula was rather infrequent. This investigation tended to confirm the opinion that these hyperplastic conditions, as well as scrofula, had nothing in common with tuberculosis. The external stigmata of tuberculosis, such as scrofuloderma, tuberculides, phlyctenula, glandular blepharitis, conjunctivitis, keratitis, etc., were exceedingly rare among these children.

The cutaneous tuberculin test, applied twice and three times to those who reacted negatively to the first application, was found positive in seven per cent. of the infants between one and six months of age. Between six months and one year of age, twenty-one per cent. of the infants reacted positively. The proportion of positive reactions kept on increasing with advancing age, and, at fourteen years of age, 83.79 per cent. were found infected with tuberculosis. When compared with the results obtained by others who reported the application of the tuberculin test to a large number of children, it appeared that the tuberculous milieu had not materially increased the number infected with tuberculosis during the first fourteen years of life. In other cities it was found that about the same percentage, or even more, reacted positively.

Among the 692 children, sixty-five were found to be suffering from active tuberculosis. Of these thirteen had tuberculosis of the bones and joints, four Pott's disease, two spina ventosa, and one tuberculosis of the glands. Active pulmonary tuberculosis was found in nineteen, and in twenty-five tracheobronchial adenitis. The mortality of children under fourteen years of age among these families was high. Of 229 children that had died, thirty-two succumbed to meningitis, that was, 17.6 per cent. of all the deaths of children under six years of age were due to meningitis, which was an enormously high mortality from this cause. Among the children in New York city the mortality from tuberculous meningitis was only two per cent. of the total deaths. While only seventeen, or 7.3 per cent., of all the deaths were said by the mothers to have been due to pulmonary tuberculosis, it must be borne in mind that in seventy-nine cases the parents stated that the deaths were due to unknown causes. Many of these were undoubtedly due to tuberculosis, which during infancy was not always diagnosed.

The opinion entertained by many that infants under one or two years of age when infected with tuberculosis did not survive the disease, was not supported by their investigation. They had among these children many who were infected during the first few months of their existence, and they survived, and even presented a healthy appearance. Massive infections, such as were found among these children, were the strongest factors in the propagation of the disease. Prophylactic measures taken against the spread of tuberculosis, to be effective, must be directed toward the protection of infants and children against massive infections, such as had been found among the families that had been investigated.

Dr. T. Passmore Berens said that the readers of the papers had done a valuable service in bringing this subject to the attention of the profession. The work done by the department of health for the benefit of the school children was deserving of praise, encouragement, and cooperation on the part of the profession at large. It was astonishing to learn from Doctor Cocks's statistics of the large percentage of children who had been operated upon without the use of an anesthetic. Doctor Berens considered that the practice of operating on children for the removal of tonsils and adenoids without the use of anesthetic was most reprehensible and should be severely condemned at every opportunity. The practice was a horrible one; it was brutal and unsurgical, and the results usually were bad. The nervous shock to the child very frequently caused grave sequelæ, for instance, chorea, post-operative neurasthenia, and last, but by no means least, a dread of the doctor. It was astonishing to think that the children were operated upon for the removal of adenoids and tonsils with or without the use of a general anesthetic and then within a few hours were allowed to return to their homes in the care of an untrained attendant. They should not be subjected to the dangers which this pernicious practice entailed.

Dr. S. Josephine Baker approved Doctor Cocks's conclusions in regard to tonsil and adenoid operations without a general anesthetic. It had been their experience that children suffered extremely from the severe nervous shock incident to an operation performed without an anesthetic and that from a surgical point of view these operations done without an anesthetic were not successful. Frequently children were referred for operation when they had already been operated upon and were not improved by the first operation. The hospitals were not equal to the demands made upon them. There were 30,000 children in the public schools last year who required adenoid and tonsil operations and less than twenty per cent. were operated upon. The department of health conducted five hospitals for the performance of adenoid and tonsil operations. These hospitals had been in operation about eighteen months, during which time about 4,000 children had been operated upon. There had been but one fatality. The children were kept in the hospital for thirty-six hours from the time of entrance, and at least twenty-four hours after the operation. There had been no unfavorable results if the one fatality was excepted. Doctor Baker hoped that Doctor Cocks's paper would awaken them to the fact that the dispensary was not the place for these operations and that the hospital service could be so extended that patients unable to pay could be properly cared for.

Dr. Alfred Hess said that Doctor Fishberg's in-

vestigation was of great interest to the community, concerning probably thirty or forty thousand of its children. In regard to the question of weight, what standard could be selected as normal? Were the weights of the children of this group compared with those of similar children or with the weights of normal children living under proper hygienic conditions? If they were compared with children of the latter class, one would expect the weights to be low; while if the comparison was made with children living in tenement houses there would probably not be so great a difference. If these children were really under weight, what was the cause? Was it due to hereditary constitutional weakness, to latent tuberculous disease, or to poor food and unhygienic surroundings? These factors were important to consider if one expected to get at the root of the matter and to attempt a solution. It might be that these children were below par merely because they did not have an average amount of proper food and did not live in quarters of average healthfulness. The tuberculous earned less than the average wage and therefore lived under the poorest general conditions of any of the poor in New York city.

Again, as to the tuberculin test, Doctor Fishberg had stated that the majority of these children reacted to the tuberculin test. In fact, sixty-seven per cent. according to his charts, reacted during the second year of life. This in itself led to the inference that this reaction did not denote tuberculous disease and one could not infer from it that the children would die of tuberculosis. Indeed, the question had been raised whether this reaction did not confer immunity on them in later life. Doctor Hess said it had been his experience that in a small proportion of these reacting children tuberculous meningitis developed.

In regard to the lack of gain in weight, at the tuberculosis preventorium, in the course of the past five years, about one thousand children had been admitted and harbored for a period of about three months and there had been no difficulty in making these children gain in weight. These children had gained in weight as did ordinary children, though almost all were the children of tuberculous parents.

Dr. Godfrey R. Pisek said it should be remembered that Doctor Fishberg had done a large and commendable work and that it was after all among a special group of people; they were dependent, lived in the tenements, and were of one race. It was to be regretted that such work had not been done in other localities for they were in need of such statistics. It was also to be regretted that Doctor Fishberg had not told them more regarding his ideas as to the mode of infection. He stated that the majority of the children were breast fed and that during the first year of life they resisted infection, while during the second and third year the number of infections mounted up. Was the infection enterogenous or aerogenous? Another factor in these cases that differed from the general type of child was that when the father became the victim of tuberculosis the mother became the breadwinner and the father was at home caring for the child, and thus the child came into close contact with the source of infection. The proportion of infections was given as eighty per cent. of those exposed in European countries. This had always seemed to him higher than the percentage in this country and he was glad to hear these statistics. Doctor Fishberg had not said much about the physical signs, and it would be interesting to know what type of physical signs these children mainly presented. He hoped that such physical examinations would be made and a report presented. The theory was confirmed that adult tuberculosis was latent tuberculosis in the child, and while they did not see the signs in the prenatal state or during infancy, they saw them in what might be termed the paratuberculous conditions of later life. A lowered resistance predisposed to these paratuberculous conditions and was certainly the result of living in a tuberculous environment.

Dr. R. Ottolengui said that as he was a dentist, practising more particularly orthodontia, he scarcely felt that he belonged to this discussion, but supposed he had been invited to take part in order that he might tell them that many of the assertions of the orthodontist had not been exaggerated. The observations of the orthodontist also confirmed the statement that many of the tonsil and adenoid operations did not yield satisfactory results. Formerly the orthodontist was in the habit of asking the parent if the child had been examined for adenoids, but now he asked whether the child had had his adenoids removed. The answer frequently was "Yes, two or three times." Doctor Cocks had mentioned mouth breathing and the high vault as though they were stigmata of disease. What did high vault mean? Did it mean a vault high from the floor of the mouth or high in proportion to the width of the arch? One might have a really high vault or one only seemingly so because of the narrow arch. Some dentists had made the statement that they lowered the vault by pulling the vomer down, but there was not a scintilla of truth in this assertion. There was nothing in the apparatus used which could lower the vault. Another statement sometimes made was that more breathing space could be given by opening the median suture. He had led the profession astray on this point some years ago, but discovered his mistake and was willing to acknowledge it. Often the suture between the premaxillary bones was open before they attempted an operation. The suture was an absolutely symmetrical one with the outer plates of the vomer attached throughout nearly its entire length and separating the suture would break the bones and the attached vomer.

Dr. John E. McKenty said that in his service at the Manhattan Hospital they met with many cases that had to be subjected to a second operation, but that he did not know that conditions were as bad as had been related in these tonsil cases. Children should be examined for nasal obstruction and should be sent to hospitals that were properly equipped not only to perform tonsil operations, but to care for nasal abnormalities. Children who suffered for any length of time from enlarged tonsils and adenoids, were very likely to have hypertrophy of the inferior turbinated bone. This fact had been recognized abroad and it was customary when operating on tonsils to remove a small portion of the inferior turbinated. One cause of mouth breath-

ing and of lack of good results after these operations was faulty occlusion. He was thoroughly in accord with the orthodontist in his endeavor to correct this defect. It often happened that after an operation the child continued to be a mouth breather because he had never been taught to breathe properly. The proper method of breathing was now being taught in some clinics and for this they should thank the orthodontist. In some instances even as much as one half of a tonsil remained after operation and this became cicatrized and obstructed drainage when the resulting condition was worse than before the operation. A variety of mutilations were met with as the result of faulty operations. It should be remembered that the modern tonsil operation was a different operation from that formerly done, even by the same men. The modern operation was a major one and should be in the hands of an expert. As to the care of these tonsil cases in the city hospitals—there were only forty or fifty beds in the city hospitals and the question was who was to pay for the work. At the price that the city paid the hospitals they would lose about two dollars on every operation.

Dr. Maurice Fishberg said that Doctor Hess's question was very pertinent. One must be careful in making comparisons of this kind; the race factor must always be considered. In the present study he had compared the children in the tuberculous milieu with those of the same race stock measured in the public schools in the same neighborhood. As to whether children who made an active response to the tuberculin test were in danger of their lives, he wished to say that infection might be massive or mild. The child with the mild infection might become immune to the disease, and not only did not succumb but might be proof against reinfection. Those who received a massive infection during the first or second years either succumbed or if they survived might carry a latent lesion which might flare up at puberty.

Dr. L. E. La Fetra asked Doctor Cocks whether when he spoke of the necessity of a general anesthetic for operations on adenoids and tonsils, he meant that adenoids alone should never be operated upon without a general anesthetic. He asked this question because there were instances in which removal of the adenoids was required while a tonsil operation was unnecessary.

Doctor Cocks replied that he considered it necessary to use a general anesthetic in the removal of adenoids if one expected to do a complete operation.

SOUTHERN MEDICAL ASSOCIATION.

The Seventh Annual Meeting, Held at Lexington, Kentucky, November 17, 18, and 19, 1913.

The President, Dr. Frank A. Jones, of Memphis, in the Chair.

(Continued from page 98.)

Phases of the Tuberculosis Problem.—They, as physicians, should teach the masses how to protect themselves against tuberculosis. The facts must be presented in a startling manner, but he believed they had overshot the mark, and that it was now time to allay some of the unreasonable fear by more rational teaching. The tuberculosis exhibit scared more people than it instructed. A wholesome dread of the infection was to be desired, but an insane fear did harm to the cause. He also questioned the wisdom of excluding tuberculous patients from the general hospitals, for beside increasing this fear of contagion among the people, it seemed to be working to the disadvantage of the medical man by limiting his opportunities for study of the disease at the bedside.

He would criticise the increasing tendency of the profession to send tuberculous patients away from home, not for specific treatment, but to build up by their own unaided efforts. Under the noncommittal diagnosis of neurasthenia they were sent out in various stages of the disease to mingle with healthy people, incapable of properly managing their own cases, the true nature of which they were trying to conceal. He regarded this practice as an injustice both to the patient and to society at large.

Surgical Treatment of Goitre.—Dr. John R. Wathen, of Louisville, stated that his own experience, which included over 300 operative cases of goitre covering a period of the last eight years, furnished operations embraced in two general classes, the simple and the exophthalmic types, in numbers about equally divided. A proper time to advise operation with the expectation of good mortality results was after the thyroid enlargement had begun to manifest the early symptoms of exophthalmic goitre, and had existed for several months with little or no sign of improvement.

In the selection of their patient for operation they should realize that early operation, before complications had arisen, as in appendicitis, gallstones, etc., offered the best results. All the patients operated upon by him, and who left the hospital cured, had remained cured or greatly benefited, the latter class being the cases seen late in the progress of the disease. His mortality had not been much over four per cent., and he had benefited all upon whom he had operated, apparently cured permanently about three fourths, and offered the remainder relief to some extent. He believed they had now almost completely mastered the greatest drawbacks to goitre operations, i. e., the injury to the recurrent laryngeal nerve and the resultant paralysis of the voice, either complete or partial.

Growths and Syndromes of the Thyroid Gland Requiring Operation.—Dr. William D. Haggard, of Nashville, stated that one of his most striking cases was in a woman, aged thirty-six years, acutely ill for ten weeks, with severe vomiting and diarrhea, and a loss of fifty-nine pounds. The pulse varied from 160 to 180, and she was so nervous and weak that transportation all but resulted in death. A ligation of first one and then the other superior thyroid artery promptly resulted in great improvement, with a gain of seventy pounds in ninety days. In this case there was scarcely any perceptible enlargement of the thyroid, and he had not advised removal of one lobe.

The acute exacerbation should be the *noli me tangere* of the surgeon. If operation were undertaken when the disease was at its height, fatal intoxication would often ensue within thirty-six hours. The same might be said of the very far advanced

cases with cardiac insufficiency, ascites, etc. Careful medical management might restore some of those cases to a condition where surgery could benefit. As Crile had said, in any case the operation was but a means to the end. The raising of the threshold of environmental stimuli by diminishing the amount of activating sensitizing thyroid secretion and in conjunction with physical and psychic rest, permitted the patient to regain the power of normal control by the brain. Travel, diversion, nature, all were helpful, the operation serving to break the pathological chain at one of its strongest links. These patients should be and could be literally taken by the hand and led away from mankind through the flowery paths of ease and pleasure to the haven of health.

Anxiety Neurosis.—Dr. S. T. RUCKER, of Memphis, said that as a general predisposing cause of anxiety neurosis, heredity played a large part. Neuropathic parents transmitted to their children a delicately poised and sensitive organization. They were emotional, mobile, and unstable. They reacted abnormally to irritating and depressing influences and were potentialized toward nervous diseases. His observation had been that hereditary taint came most frequently from the mother. Not infrequently a neuropathic mother would transmit a similar condition to all her children. In one family which he had under observation and treatment, the father was tuberculous all of his married life and finally died of the disease, leaving three children. Ten years after his death the wife had a severe attack of melancholia, but recovered and had since been well. Two of the children had nervous breakdown, and the other was psychically abnormal. In another of his families the mother suffered from hysteria ten years, was treated, and recovered. She had two children; one was treated for neurasthenia and the other for psychasthenia. The father of these children was a normal, healthy man.

Another predisposing cause of anxiety neurosis was early education in the home. Indulgent parents often failed to teach their children selfdenial and selfcontrol. A child grew up to girlhood accustomed to every whim being gratified and an abundant sympathy being lavished on every woe, however trifling. She reached womanhood with a mental organization unfitted to withstand the cares of every day life. She weakened under the strain of trying ordeals and a nervous trouble developed.

The symptom complex of anxiety neurosis was often associated with neurasthenia, hysteria, psychasthenia, and melancholia, and formed a clinical picture around which the classical symptoms of these diseases were grouped. By the process of suggestion and reeducation, wrong beliefs and habits of thought could be changed or repressed, and healthy psychic complexes organized and substituted for unhealthy. Mental conflicts could be terminated and peace and calm restored to the tempest tossed soul.

The Cancer Problem.—Dr. W. A. BRYAN, of Nashville, stated that there was a more or less prevalent opinion among the people that cancer was fundamentally a general disease, "a blood disease," as they were pleased to term it, and that, therefore, no matter how extensive local treatment might be applied, it could do no good. It was true that many cancers did become disseminated through the body, by the blood or otherwise, at a certain stage of their development, and that then the case was hopeless, but the condition was never general from the beginning. On the contrary, cancer was just as much localized at the beginning as a mole or a wart or a pimple. From this small and curable beginning it gradually invaded the surrounding structures and became less easily curable until it passed certain limits in a local way or invaded the remote parts of the body and positively became incurable.

It was important to impress that the time division between a curable and an incurable cancer might be no longer than a single pulse beat. A bruise, a cut, rough handling of the tumor by patient or surgeon might loosen the cancer cells into the circulating blood and render hopeless the curable case of a moment before. The value of this could be seen in a practical way, for if the curable became incurable in the twinkling of an eye, and if the time of such occurrence was uncertain, no time should be lost in determining the nature of the malady, and having settled this point, no delay should be countenanced by the physician or patient until the growth was destroyed.

Election of Officers.—The following officers were elected for the ensuing year: President, Dr. Stuart McGuire, of Richmond; first vice-president, Dr. J. W. Jervey, of Greenville, South Carolina; second vice-president, Dr. F. H. Clark, of Lexington, Kentucky; secretary-treasurer, Dr. Seale Harris, of Mobile.

Richmond, Virginia, was selected as the place for the next meeting.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Hygiene and Public Health. By LOUIS C. PARKES, M. D., D. P. H. Univ. of Lond., Consulting Sanitary Adviser to H. M. Office of Works, Late Civilian Sanitary Member of the Advisory Board for Army Medical Services, etc., and HENRY R. KENWOOD, M. B., F. R. S. Edin., D. P. H. Lond., Chadwick Professor of Hygiene in the University of London, Medical Officer of Health and Public Analyst of the Metropolitan Borough of Stoke Newington and Medical Officer of Health for the County of Bedfordshire, etc. Fifth Edition, with Illustrations. Philadelphia: P. Blakiston's Son & Co., 1913. Pp. xi-736. (Price, $3.50.)

The authors of this book deal thoroughly with their subjects, the chapter on school hygiene in particular containing much of value. In speaking of the school children the very pertinent statement is made that mental fatigue is due less to overwork than to wrong work at the wrong time and in the wrong way. If more teachers took that to heart their pupils would benefit greatly. That the book is written by an Englishman is shown in the chapter on heating. In the discussion of the various methods no mention is made of the hot air furnace. Consequently there is no comparison made with steam and hot water. In regard to lighting, acetylene is dismissed with a few lines. The book is a good one, however, and can be recommended.

Headache. Its Varieties, Their Nature, Recognition, and Treatment. A Theoretical and Practical Treatise for Students and Practitioners. By Dr. SIEGMUND AUERBACH, Chief of the Polyclinic for Nervous Diseases in Frankfurt, a. M. Translated by ERNEST PLAYFAIR,

M. B., M. R. C. P. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1913. Pp. vi-208.

The author makes a laudable attempt in this small book to identify the various causes of headache, and to establish a clear differential diagnosis and rational treatment of each of its many varieties. Although the pathogenesis of "migraine" for example, seems to us rather neglected when this disorder is entered under "the more independent forms" along with neurasthenia and nodular headache in Class A, still the classification proposed seems well borne out by experience. Class B includes those headaches associated with diseases of individual organs, viz., brain disease, disorders of the special senses, of the digestive tract, and of the kidneys; Class C, headaches in general disease: infectious diseases, acute and chronic intoxications, constitutional diseases; Class D, combinations of different forms of headache—so called habitual headache: nodular headache, associated with severe hysteroneurasthenia and migraine; severe states of exhaustion as the result of nodular headache; combination of migraine and nodular headache; combination of chlorosis with nodular headache; combination of nephritis, suppurative otitis media, and nodular headache; migraine, neurasthenia, frontal sinus suppuration, and supraorbital neuralgia. On the whole the work is well done and the translation accurate.

Die ambulante Therapie der Lungentuberkulose und ihre häufigsten Komplikationen. Ein kurzgefasstes Lehrbuch für Aerzte und Studierende. Von Dr. Karl Blümel, Spezialarzt für Lungen- und Halskrankheiten in Halle a. S. Berlin: Urban und Schwarzenberg, 1913. Pp. 208.

Doctor Blümel discusses the various forms of pulmonary tuberculosis, its complications, and the question of treatment with reference to the ambulatory condition of the patient. The book is full of solid information, but there is happily a clear and orderly arrangement. His practice is rest, in the intervals of work, air, baths, and nourishment. Therapeutic agencies are divided into three; the dietetic and hygienic, the specific or tuberculin mode, the medicinal strictly speaking. The main principle, to place diet and hygiene first, will please most physicians. Ambulatory treatment is designed to take the place of the sanatorium; it is not suited to febrile patients nor to those who neither will nor can carry it out at home. Diet and hygiene, being essential conditions, are rigorously adhered to. The merit of the book consists in its argument to show the efficacy of food in the liberal sense, not in the narrow sense of forced and artificial feeding. Blümel calls the attention to the limitations of tuberculin, though praising it as much as it deserves. It is not adapted for latent, mixed, or arrested cases. Of drugs he recommends the iodides, heroine, and codeine for cough and sleeplessness; ammonium chloride for the expectoration; bromides in neurasthenia; and the sedative effects of hydrotherapy. It is a concise treatise, useful in the hands of any physician.

London Public Health Administration. A Summary Showing the Principal Authorities, with Their Origin, Services, and Powers. By W. McC. Wanklyn, B. A. Cantab., M. R. C. S., L. R. C. P., D. P. H., Fellow of the Royal Society of Medicine, etc. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1913. Pp. 59. (Price, 90 cents.)

The author has prepared this small book of reference for foreign visitors to London, who are interested in public health administration. In it will be found: 1. A list of the principal London health authorities, with an account of their origin; 2, a list of London public health services with the appropriate authorities and legislation; 3, the principal public health statutes.

A Textbook of Biology. For Students in Medical Technical and General Courses. By William Martin Smallwood, Ph. D., Professor of Comparative Anatomy in the Liberal Arts College of Syracuse University and in Charge of Forest Zoology in the New York State College of Forestry at Syracuse. Illustrated with 243 Engravings and Thirteen Plates in Colors and Monochrome. Philadelphia and New York: Lea & Febiger, 1913. Pp. xiv-285.

This is an unusually interesting book. It departs from the beaten path in general structure in the sense that a distinct effort is made so to treat the different and varied subjects as to give them practical value. The first nine chapters consider the organism as a whole, the structure and functions of organs, and of the cellular elements of which they are built. Medical students are then given what medical schools now justly demand as a part of their curriculum; some conception of the animal kingdom as a whole. Then occur in turn, the biology of bacteria, yeast, and moulds; the plant kingdom; biological factors in disease; an outline of evolution and heredity, including eugenics and animal behavior and its relation to mind—all admirably although concisely studied.

Die Praxis der Gallenwege-Chirurgie in Wort und Bild. I. Band: Die Vorbereitungen zu einer Operation an den Gallenwegen und die allgemeine Technik der Gallenwege-Chirurgie. Von Professor Dr. Hans Kehr, Geh. Sanitätsrat in Berlin. Mit 48 farbigen und 23 schwarzen Tafeln sowie 116 Textabbildungen nach Originalen der Maler Franz Frohse, Karl Hajek, und Franz Kotzian. München: J. F. Lehmann, 1913. Pp. xxxii-419.

Kehr's name has been identified for the past ten years with the surgery of the bile passages. He has made many contributions to the literature, based on large experience. The present work, of which this is the first volume, is the most extensive that has appeared from his pen and in it he gives the final results of his studies and operations up to the present day. The first volume is devoted to the anatomy, physiology, and pathology of cholethiasis, followed by chapters on the clinical aspects, diagnosis, prognosis, the internal treatment, and finally operative technic. Any book written on the basis of such a large number of cases as Kehr has had at his disposal, must necessarily be of great interest, and the conclusions therein expressed cannot fail to represent the author's real convictions. Some of these conclusions, however, in this instance are considerably at variance with those of the majority of abdominal surgeons in Germany and elsewhere. Mention may be made merely of Kehr's use of excessive gauze packing after removal of the gallbladder or incision of the common duct. While less extreme in this respect than in former years, Kehr still holds views of the harmlessness of gauze in the peritoneal cavity, which are at variance with those of most surgeons. Many other points in technic which seem to be peculiar to Kehr's work, will not receive approbation by surgeons in this country, and have been criticized by his confrères in Germany. It cannot be denied, however, that his chapters on pathology, diagnosis, and indications for operation are sound, and many of the studies and conclusions are original. The plates and diagrams are exceedingly well executed and the former particularly represents a high achievement in art. The text is unnecessarily verbose, and digressions are frequent, which tend to tire the reader and obscure the value of the points that the author makes. The book will be read with chief interest by the general surgeon and is a distinctly valuable contribution to this important branch of abdominal surgery.

Interclinical Notes.

The following somewhat cryptic appeal is taken from a recent program of the New York Academy of Medicine:

"It is requested that a brief synopsis of papers to be read, be handed in for presentation in this folder, in order to elucidate the subject for expediency in discussion."

* * *

We are interested, as already explained, for physiological and hygienic reasons in the tango and allied exercises. The whole matter of the morality of the tango is summed up in the clever answer of a fifteen year old girl to the question of a clergyman who asked her, "Do you not think the tango vulgar?" The child replied: "Only when danced by vulgar people."

* * *

The *Outlook* for January 10th recalls that Guayaquil, Ecuador, is the "pest hole of the Pacific," a breeding place of yellow fever, bubonic fever, cholera, smallpox, and plague. The neighboring country of Peru, it is gratifying to learn, is in thorough sympathy with the intention of this country and England to clean up Guayaquil, although the

latter is bitterly opposed to Americans having any hand in the process.

* * *

The *Dial* for January 1st repeats the remarks made at Amherst University by Dr. Talcott Williams, dean of the Pulitzer school of journalism: "In our American civilization the law is the best trade; the doctor's is the next best trade, taking in all cases the highest ranks of the calling; the engineering manager comes next; the rewards of the clergy are about those of the journalist. No man can enter the calling with the expectation that his pay will be large, that his work will be as well rewarded as that of other men, or that he will find himself increasing in his returns as he grows older." It will be seen that the writers come a long way after the practitioners.

Meetings of Local Medical Societies.

MONDAY, *January 19th.*—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York (annual); Hartford, Conn., Medical Society; Medical Society of the County of Erie; Elmira Clinical Society.

TUESDAY, *January 20th.*—New York Academy of Medicine (Section in Medicine); Psychiatric Society of Ward's Island; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Tri-Professional Medical Society of New York; Medical Society of the County of Kings (annual); Binghamton Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital; Ogdensburgh Medical Association; Oswego Academy of Medicine; Syracuse Academy of Medicine; Medical Society of the County of Westchester.

WEDNESDAY, *January 21st.*—New York Academy of Medicine (Section in Genitourinary Diseases); Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association (annual); Northwestern Medical and Surgical Society of New York.

THURSDAY, *January 22d.*—Hospital Graduates' Club, New York (annual); New York Celtic Medical Society; The New York Physicians' Association; Bronx Medical Association (annual).

FRIDAY, *January 23d.*—Italian Medical Society of New York; New York Academy of Medicine (Sections in Public Health and Obstetrics and Gynecology); Academy of Pathological Science, New York; New York Clinical Society; Manhattan Medical Society.

SATURDAY, *January 24th.*—West End Medical Society; New York Medical and Surgical Society; Harvard Medical Society (annual); Lenox Medical and Surgical Society.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the fourteen days ending December 31, 1913:

Anderson, J. F., Surgeon. Reassigned to duty as director of the Hygienic Laboratory, effective October 1, 1913. Detailed to attend the annual meeting of the American Society for Experimental Pathology to be held in Philadelphia, Pa., December 29 to 31, 1913. **Austin,** H. W., Senior Surgeon. Detailed to represent the service at the National Conference on Race Betterment to be held at Battle Creek, Michigan, January 8 to 12, 1914. **Banks,** C. E., Senior Surgeon. Granted eight days' leave of absence from December 14, 1913. **Foster,** A. D., Passed Assistant Surgeon. Granted seven days' leave of absence from December 20, 1913. **Fox,** Carroll, Surgeon. Granted two days' leave of absence, December 26 to 27, 1913. **Francis,** Edward, Surgeon. Reassigned to duty as Assistant Director of the Hygienic Laboratory, effective October 7, 1913. Granted seventeen days' additional leave of absence from December 12, 1913. **Frost,** W. H., Passed Assistant Surgeon. Granted two days' leave of absence, December 24 to 25, 1913. **Gardner,** C. H., Surgeon. Granted two days' leave of absence from December 25, 1913. **Lavinder,** C. H., Surgeon. Granted twenty-one days' leave of absence from December 21, 1913. **McIntosh,** W. P., Surgeon. Relieved from duty at Louisville Ky., and directed to proceed to Portland, Me., and assume charge of the Marine Hospital at that port. **McLaughlin,** A. J., Surgeon. Granted three months' leave of absence without pay, from January 1, 1914. **Schereschewsky,** J. W., Surgeon. Detailed to attend the seventh annual meeting of the American Association for Labor Legislation at Washington, D. C., December 30 to 31, 1913. Directed to proceed to Youngstown, Ohio, and make an investigation into the origin and prevalence of trachoma in that city. Also to Dayton, Ohio, to inspect sanitary conditions in manufacturing establishments. **Warren,** B. S., Surgeon. Detailed to attend the seventh annual meeting of the American Association for Labor Legislation at Washington, D. C., December 30 to 31, 1913. **Wertenbaker,** C. P., Surgeon. Directed to proceed to Charleston Quarantine Station on special temporary duty. **White,** J. H., Surgeon. Directed to proceed to St. Joseph, Mo., to make a sanitary survey of that city and to advise with the health authorities regarding the reorganization of their health service.

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending January 7, 1914:

Boggess, J. S., Surgeon. Directed to supervise the fumigation of the steamer *Newlands* at the wharves in Mobile. **Foster,** M. H., Surgeon. Directed to proceed to Philadelphia for the purpose of observing the Grattage operation for the cure of trachoma. **Guthrie,** M. C., Passed Assistant Surgeon. Directed to proceed to Wheeling, W. Va., for the purpose of making a further examination of two aliens to observe the results of the Grattage operation for the cure of trachoma. **Kolb,** L., Passed Assistant Surgeon. Directed to proceed to Louisville, Ky., and report to Surgeon J. H. Oakley for duty in the examination of school children of Jefferson County. **Korn,** W. A., Surgeon. Granted one month's leave of absence, to be taken when the work of the station will permit. **Moore,** Dunlop, Surgeon. Directed to proceed to Louisville, Ky., and report to Surgeon J. H. Oakley for duty in the examination of school children of Jefferson County. **Nydegger,** J. A., Surgeon. Granted one month's leave of absence from January 8, 1914, on account of sickness. **Roth,** G. B., Assistant Pharmacologist. Detailed to attend the meetings of the American Pharmacological Society and the American Physiological Society in Philadelphia, December 29 to 31, 1913. **Safford,** M. V., Assistant Surgeon. Directed to proceed to Worcester, Mass., for the purpose of making a further examination of an alien to observe the results of the Grattage operation for the cure of trachoma. **Voegtlin,** Carl, Professor of Pharmacology. Detailed to attend the meetings of the American Pharmacological Society and the American Physiological Society in Philadelphia, December 29 to 31, 1913. **Wertenbaker,** C. P., Surgeon. Granted seven days' leave of absence from January 1, 1914.

Boards Convened.

Board of medical officers convened to meet at the bureau for the preparation of questions for the written examination of Assistant Surgeon D. C. Turnipseed at Manila, P. I., to determine his fitness for promotion to the grade of Passed Assistant Surgeon. Detail for the board: Assistant Surgeon General W. G. Stimpson, chairman; Assistant Surgeon General W. C. Rucker, member; Assistant Surgeon R. A. Kearny, recorder.

Board of medical officers convened to meet at Baltimore, Md., for the reexamination of alien child, Meyer Ewaschnitzki. Detail for the board: Senior Surgeon H. R. Carter, chairman; Surgeon J. A. Nydegger, member; Passed Assistant Surgeon J. T. Burkhalter, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending January 10, 1914:

Allen, J. H., Major, Medical Corps. Leave of absence

extended one month. **Bailey,** H. H., Captain, Medical Corps. Relieved from duty with the Second Division and from further duty at Fort D. A. Russell, Wyo.; will proceed to the Army and Navy General Hospital, Hot Springs, Ark., and report in person to the commanding officer of that hospital for duty. **Connolly,** P. B., First Lieutenant, Medical Reserve Corps. Leave of absence extended ten days. **De Witt,** Wallace, Major, Medical Corps. Upon arrival in the United States will proceed to Fort Ethan Allen, Vermont, and report in person to the commanding officer of that post for duty, and by letter to the commanding general, Eastern Department. **Eastman,** William R., Major, Medical Corps. Leave of absence heretofore granted extended ten days. **Erdmann,** J. F., First Lieutenant, Medical Reserve Corps. Resignation of commission in the Medical Reserve Corps has been accepted by the President, to take effect January 2, 1914. **McCown,** T. B., First Lieutenant, Medical Reserve Corps. Relieved from duty in the Philippines Department, to take effect on or about April 15, 1914, and will then proceed to the United States, and upon arrival report by telegraph to the Adjutant General of the Army for further orders. **Rich,** E. W., Major, Medical Corps. Granted one month leave of absence, effective January 6, 1914.

The following named officers of the Medical Corps are detailed to enter the Army Field Service and Correspondence School for Medical Officers, Fort Leavenworth, Kansas, for the purpose of taking the course in the Field Service School, and will proceed at the proper time to Fort Leavenworth, and report in person on April 1, 1914, to the commandant, the Army Service School for duty accordingly: Major Thomas S. Bratton, Major Thomas J. Kirkpatrick, Major James S. Wilson, Major M. A. W. Shockely, Major James F. Hall.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the two weeks ending January 10, 1914:

Beeching, C. L., Assistant Surgeon. Detached from the *Rainbow* and ordered to the *Quiros*. **Bostick,** J. B., Acting Assistant Surgeon. Detached from the training station, San Francisco, Cal., and ordered to the recruiting station, Dallas, Texas. **Brister,** J. M., Surgeon. Detached from the *South Carolina* and ordered to the *Utah*. **Brooks,** F. H., Passed Assistant Surgeon. Detached from the *Birmingham* to waiting orders. **Chambers,** W., Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to dispensary at that place. **Cole,** W. H., Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the *California*. **Cottle,** O. F., Passed Assistant Surgeon. Detached from the training station, Great Lakes, Ill., and ordered to the *Mississippi*. **Dodge,** A. H., Passed Assistant Surgeon. Detached from the *Mississippi* and ordered to the *Idaho*. **Downy,** J. O., Passed Assistant Surgeon. Detached from the Bureau of Steam Engineering, Navy Department, Washington, D. C., and ordered to the Atlantic Reserve Fleet. **Fiske,** O. N., Surgeon. Detached from the *Utah* to waiting orders. **Giltner,** H. A., Passed Assistant Surgeon. Detached from the Naval Dispensary, Norfolk, Va., and ordered to the hospital at that place. Howard, J. V., Assistant Surgeon. Detached from the *Quiros* and ordered to the Canacao Hospital, P. I. **Mann,** W. L., Passed Assistant Surgeon. Detached from the naval recruiting station, Dallas, Texas, and ordered to the training station, San Francisco, Cal. **Munger,** C. B., Passed Assistant Surgeon. Detached from the *California* to waiting orders. **Murphy,** J. F., Surgeon. Detached from the *Idaho* and ordered to the *Montana*. **Murphy,** J. A., Surgeon. Detached from the naval training station, San Francisco, Cal., and ordered to the Atlantic Reserve Fleet. **Richardson,** R. R., Surgeon. Detached from the *New Jersey* to waiting orders. **Smith,** H. W., Surgeon. Detached from the Naval Hospital, Boston, Mass., January 3, 1914. **Stuart,** Allan, Surgeon. Detached from the *Vermont* and ordered to the *South Carolina*. **Sutton,** D. G., Passed Assistant Surgeon. Detached from the *Birmingham* and ordered to the *Montana*.

Births, Marriages, and Deaths.

Married.

Day—Richards.—In Middlebury, Conn., on Saturday, January 3d, Dr. Hilbert Francis Day, of Boston, and Miss Elizabeth Vernon Richards. **Fleisher—Levis.**—In St. Louis, Mo., on Thursday, January 1st, Dr. Moyer S. Fleisher and Miss Adele Levis. **Harrington—Vail.**—In Poughkeepsie, N. Y., on Wednesday, January 7th, Dr. James Taylor Harrington and Miss Lavina Cornell Vail. **Langfitt—Davis.**—In Salem, W. Va., on Wednesday, December 31st, Dr. Frank V. Langfitt and Miss Veda Irene Davis. **Linquist—Russell.**—In New Canaan, Conn., on Saturday, January 3d, Dr. Maurice F. Linquist, of New Haven, Conn., and Mrs. Charles Hazen Russell. **Mahony—Dougherty.**—In Poughkeepsie, N. Y., on Tuesday, January 6th, Dr. Thomas L. Mahony and Miss Helen M. Dougherty. **Mercer—Atkinson.**—In Buckingham, Bucks County, on Wednesday, January 7th, Dr. Eugene Leroy Mercer and Miss Emily Atkinson. **Sherrick—Ives.**—In Philadelphia, on Wednesday, December 31st, Dr. Earl C. Sherrick, of Connellsville, Pa., and Miss Marian Edith Ives. **Tyson—Woodman.**—In Janesville, Wis., on Thursday, December 25th, Dr. George F. Tyson, of Evanston, and Miss Lulu Woodman. **Warner—Feraud.**—In Redlands, Cal., on Wednesday, December 31st, Dr. W. H. Alonzo Warner, of East Orange, and Miss Natalie B. Feraud. **Wherry—Smith.**—In Philadelphia, on Thursday, January 1st, Dr. Edgar Theodore Wherry and Miss E. Gertrude Smith. **Wichmann—MacCoy.**—In St. Louis, Mo., on Saturday, January 3d, Dr. Herman L. Wichmann and Miss Pearl Wilson MacCoy.

Died.

De Baun.—In Passaic, N. J., on Wednesday, January 7th, Dr. Edwin De Baun, aged fifty-nine years. **Busch.**—In Buffalo, N. Y., on Saturday, January 3d, Dr. Frederick C. Busch, aged forty years. **Byrne.**—In Dubuque, Iowa, on Thursday, January 1st, Dr. William F. Byrne, aged thirty-five years. **Converse.**—In Hanover County, Va., on Sunday, January 4th, Dr. T. Edward Converse. **Deming.**—In Cass City, Mich, on Monday, December 22d, Dr. Daniel P. Deming, aged seventy years. **Flood.**—In Elmira, N. Y., on Tuesday, December 30th, Dr Henry Flood, aged sixty years. **Forbes.**—In Worcester, Mass., on Saturday, January 3d, Dr. George F. Forbes, aged eighty-two years. **Fuller.**—In Monson, Mass., on Tuesday, December 23d, Dr. George E. Fuller. **Gober.**—In Beaumont, Texas, on Friday, January 2d, Dr. J. D. Gober, aged fifty-two years. **Hatch.**—In Orleans, Mass., on Sunday, January 4th, Dr. Anslem D. Hatch, aged fifty years. **Hays.**—In Atlantic City, N. J., on Saturday, December 27th, Dr. Thomas Rutherford Hays, of Bellefonte, aged seventy-four years. **Haywood.**—In Memphis, Tenn., on Monday, December 29th, Dr. James Glasgow Haywood, of Brownsville, Tenn., aged eighty-nine years. **Magoon.**—In St Louis, Mo., on Monday, December 29th, Dr. Ephraim Magoon, aged seventy years. **McAlpine.**—In Grand Haven, Mich., on Sunday, January 4th, Dr. Duncan McAlpine. **McCarty.**—In Roanoke, Va., on Saturday, December 27th, Dr. Robert H. McCarty, aged seventy-three years. **McCollum.**—In Greensboro, Ala., on Friday, January 2d, Dr. Edgar P. McCollum, aged forty-three years. **Parsons.**—In Peoria, Ill., on Monday, December 29th, Dr. George F. Parsons, of Chicago, Ill. **Patterson.**—In Fairmount, Ind., on Sunday, December 28th, Dr. J. W. Patterson, aged fifty-four years. **Perkins.**—In Springfield, Ill., on Friday, December 26th, Dr. T. Lyman Perkins, aged sixty-two years. **Rankin.**—In Akron, Ohio, on Thursday, January 1st, Dr. Irving C. Rankin, aged forty-two years. **Rush.**—In Allentown, Pa., on Wednesday, January 7th, Dr. William John Rush, aged forty years. **Scott.**—In Culpeper, Va., on Saturday, December 20th, Dr. James McClure Scott. **Sheldon.**—In Lyons, N. Y., on Sunday, January 4th, Dr. Andrew Flint Sheldon, aged eighty-four years. **Smith.**—In Flatbush, Brooklyn, on Friday, January 9th, Dr. Matthew W. Smith, aged sixty years. **Smith.**—In Lawrenceville, Pa., on Wednesday, December 31st, Dr. John Blandeer Smith, aged seventy-four years.

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Original Communications.

CHRONIC INTESTINAL STASIS SURGICALLY CONSIDERED.*

Some Types Illustrated.

BY WILLIAM SEAMAN BAINBRIDGE, SC. D., M. D.,
New York.

In a recent address before the French Surgical Congress, Sir Arbuthnot Lane, of London, defined chronic intestinal stasis as follows: "By chronic intestinal stasis I mean that the passage of food along the alimentary canal takes place with such slowness that there is formed an excess of toxic matter, especially in the small intestine. Consequently, the blood flow pours into the transforming and excretory organs a quantity of poison larger than they can eliminate. From this it results that all the tissues of the body, drenched in this blood rich in poisons, degenerate and offer a diminished resistance to infection. A defective drainage has consequences which are deleterious to the organism in general as well as to the individual tissues of which it is composed."

Accepting this definition as Sir Arbuthnot Lane has given it, we have practically a question of body drainage to consider. The body, in its last analysis, may be compared to a hollow cylinder, with an inner tube which is twisted, normally, in its development, some parts being dilated, others contracted, while some side passages are enlarged into great organs, which, by developing as diverticula, are still patulous and empty into the one central tube. In other words, this great central canal, the gastro-intestinal tract, with its side passages leading to reservoirs which we call organs, may be compared with a great drainage or sewage system. Obstruction and retention in one part of the sewage system means, sooner or later, contamination of the entire area drained by those canals. So with the body, when there is abnormal retention in one part the entire system, sooner or later, becomes contaminated. For, in the body, there are present just the conditions—warmth, moisture, and bacteria—which favor the development of toxic materials. If for any reason, therefore, there is a slowing of the passage of the contents of the great body sewage system, there is not only a greater development of toxic matter than in normal circumstances, but the absorption of more poisonous material, and the bathing of the tissues with it. The parts thus affected suffer, in time. Disturbed function, disease, and even death, may result.

Just as the sewage system of a great city is kept in proper working order by inspection and care in order to prevent obstruction or breaks, so the body drainage system should be subjected to surveillance, and the far reaching results of retention and tissue contamination prevented.

The prevention, therefore, of chronic intestinal stasis and its aftermath of disturbed function, disease, and death, is our prime object in the study of this subject. The vast majority of cases should have been prevented. Hygienic and medical treatment will cure a large proportion of cases if instituted in the beginning. Certainly nine out of ten and possibly nineteen out of twenty of all cases should not reach the stage which calls for surgical intervention.

Unfortunately, however, in many instances, there comes a time when the plumbing must receive direct attention along its course, when the surgeon, like the expert plumber, must be called into requisition. Whether he shall patch and mend, so to speak, the defective drainage system, thus warding off trouble, or whether he shall employ more radical measures and eliminate defective parts, is a fine point to be decided in each instance according to the exigencies of the case.

We therefore hear of the conservative and the radical treatment of chronic intestinal stasis. A clear understanding of these terms is important. It is equally necessary to bear in mind that there is no hard and fast distinction between the two terms; that what in one case may seem radical treatment may in another be extremely conservative. The one who, by waiting, content with palliative measures, fears to employ surgery, often by this delay renders necessary a severe surgical operation, and is less conservative than the one who, by resorting to milder surgical measures at first, renders unnecessary the more severe operations. Thus, the surgeon who urges immediate and radical surgical interference may be in reality, and in the light of the ultimate, the conservative one. A simple appendectomy, on the other hand, with division and suture of an early ileopelvic band, or the anchoring of a mobile cecum, with proper aftercare, may obviate many secondary changes, with their far reaching effects, eventuating, perhaps, in hopeless invalidism for the patient, or in the performance of a short circuit or a colectomy. A bankrupt body, with every organ mortgaged to the full by toxic absorption, is a poor surgical risk to be sure;

*Presented, with lantern slide illustrations and cases, before the annual meeting of the Medical Association of the Greater City of New York, December 15, 1913.

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yet many a physical derelict has become such in consequence of drifting, with medical interference and surgical help delayed until it is too late.

In many cases the drainage system has been neglected until a part of the human plumbing must be removed—that is colectomy; in others it is possible to sidetrack the damaged part—that is short circuiting. In still others the parts can be patched up, the tubes can be straightened, the angles can be corrected. It is often difficult to determine to which type an individual case belongs. In fact, it must be freely admitted that we are today feeling our way along, so to speak, endeavoring to profit by experience in order more accurately to place the borderline cases. Many patients will be operated on with the less severe procedures, and will be cured, while some will eventually return for the more radical intervention. In the second class of cases we shall regret that the latter procedure was not adopted in the beginning. By careful preliminary study of each case, and by thorough investigation of the actual conditions as seen upon the operating table, these mistakes will doubtless be obviated more and more in future.

For over seven years I have been in personal touch with Sir Arbuthnot Lane, studying many of his cases with him before, during, and after operation, supplementing this observation by actual experience in a large number of cases. Today I do not hesitate to short circuit or colectomize where I feel that less radical measures will not suffice, for, as Lane has shown, to cut bands and to disturb many adhesions may give, in markedly toxic cases, as great a mortality, if not a greater one, than short circuiting.

In a broad way we may classify cases of chronic intestinal stasis under three groups. The first may be called the medical group, in which surgery is not necessary, and in which, by means of hygienic measures, posture, diet, special exercises, liquid paraffin, a properly fitted belt, etc., the patient may be prevented from drifting to the surgeon. In the third group of cases either a short circuit or a colectomy is necessary. The first are the early cases, the third the late or extreme cases. Between these two comes a mid group, in which it is possible to repair the drainage system, to patch it up, so to speak, and to effect a cure. The cases which we shall present belong to the second group.

It requires much time and experience to determine the relative size of the second and third groups, and to know definitely to which an individual patient rightly belongs. It is debatable whether some of the patients whose cases are at present under discussion would not have fared better if they had been short circuited or colectomized: time alone will tell. At all events we have here a group of patients who were suffering from chronic intestinal stasis, with all the symptoms attributable to such a condition, who have been literally made over by surgical intervention, based upon the mechanical causes of intestinal obstruction as described by Lane.

It is not my purpose on this occasion to discuss in detail the mechanical causes and consequences of the slowing of the onflow of the intestinal contents, except as they may be mentioned in connection with the cases presented. Doctor Hayes has clearly given the medical side of the question, and Doctor Quimby has shown the radiographic side. I shall now present, in very brief detail, the histories of a few cases selected from our more recent ones, which have been worked out with Doctor Hayes and Doctor Quimby.

In the diagnosis of the conditions we have used the usual clinical methods, which are excellent; but these have been supplemented by radiographic examinations and careful interpretation of the plates. It must be understood that the radiographic examination includes the fluoroscopic study of the case, from which much is often revealed which is not seen in the skiagraph. The radiographic history includes both the x ray and fluoroscopic findings. The captions of the skiagraphic illustrations include only the x ray findings. Sometimes the radiographic findings are exactly similar to what is found clinically.

After all, however, the surgeon must substantiate, on the operating table, the predictions which he makes from the clinical observation and radiographic examination. In order to do this, and to put into indisputable and permanent form the actual conditions found upon laparotomy, it has been my practice for some time to have a skilled artist stand by the operating table to study the conditions, step by step, as they are revealed, and to depict on paper exactly what is seen, taking ample descriptive notes. In addition to this, I often have present a stenographer to whom I dictate a description of the conditions found and the surgical procedure employed. The exact state of affairs is demonstrated to any visiting physicians present, and what they see in the abdominal cavity is tallied up, so to speak, with the artist's portrayal of his own impressions and the stenographic report. The pictures which I shall present to you are made in this way, except in Case I. These three were made from stenographic notes taken at the time of operation, and carefully criticised by several surgeons who were present.

Case I.[1]—C. C. Referred to me by Dr. William Van Valzah Hayes. Male, aged forty-nine years. Widower. *Previous history.* Three years ago attacks of nausea and vomiting, lasting two weeks. Since that time had been gradually failing in general health. Two years ago had an attack similar to the first. In December, 1912, another attack, since which time he had vomited daily, had lost considerable flesh and strength, had suffered from constipation and general abdominal tenderness, more marked in right lower quadrant; pain in epigastrium four or five hours after eating; large amount of gas. No previous operation. When I first saw patient, about the middle of January, 1913, his general condition was very poor; he was practically starving to death. *Clinical diagnosis.* Almost complete pyloric stenosis, gastric dilatation, duodenal ulcer, iliac stasis. *Radiographic diagnosis*, by Dr. A. Judson Quimby: "Incomplete pyloric obstruction, organic involvement of the first portion of the duodenum, probably malignant; iliac stasis."

Operation, December 25, 1913, New York Polyclinic Hospital. *Conditions found:* (Figs. 1, 2, and 3.) Dilatation of stomach; almost complete pyloric obstruction; diverticulum of duodenum, with a mass of inflammation about it; marked duodenojejunal kink; adhesions between neck of gallbladder and duodenum; pronounced iliac stasis; marked Lane's bands; some enlarged glands about the pylorus and back of liver.

Treatment. 1. Posterior gastroenterostomy. 2. Iliac

[1]Presented at the meeting.

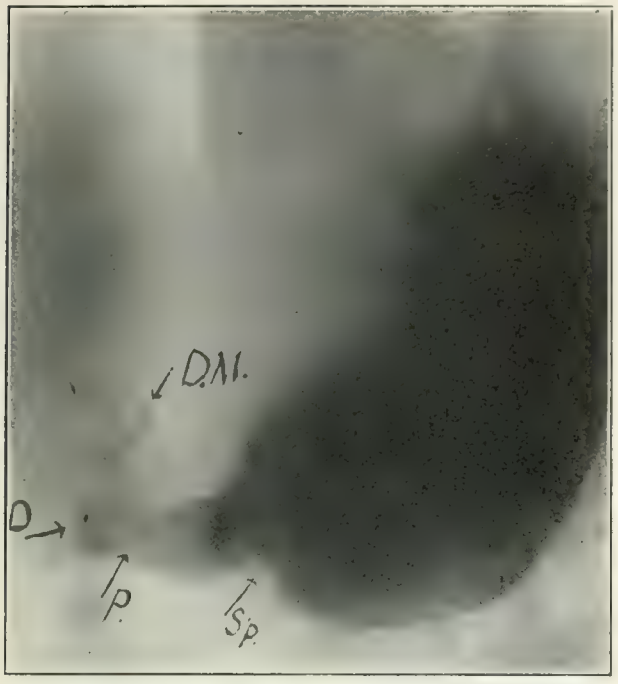


FIG. 1, Case I.—Stomach and first portion of the duodenum. *Sp*, gastric spasm; *D*, first portion of the duodenum; *Dm*, diverticulum; *P*, pylorus. Picture taken within half an hour of administration of bismuth.

band cut transversely and sutured longitudinally. Appendix normal, but removed. 3. Small fibroid of right lobe of liver at free margin excised, liver sutured. *Aftertreatment.* Liquid paraffin and supporting abdominal belt.

Status præsens: December 15, 1913, seemingly perfectly well; had gained about 45 pounds in weight; living a normal life.

CASE II.—R. C. Referred by Dr. William Van Valzah Hayes. Physician, aged forty years, married. *Previous history.* Ill defined stomach trouble for some years, with loss of flesh and strength; eighteen pounds lost in four years; intermittent heart action; cold hands and feet; sallow skin, often marked general abdominal tenderness; constipation; considerable mental depression; unable to practise his profession. No previous operation. *Clinical diagnosis.* Chronic intestinal stasis. *Radiographic examination* by Doctor Quimby: "Small ulcer near the pylorus. Adherent constricting band on the ascending colon. Ptosis more pronounced on the transverse colon, causing angulation. Dilated terminal ileum and colon."

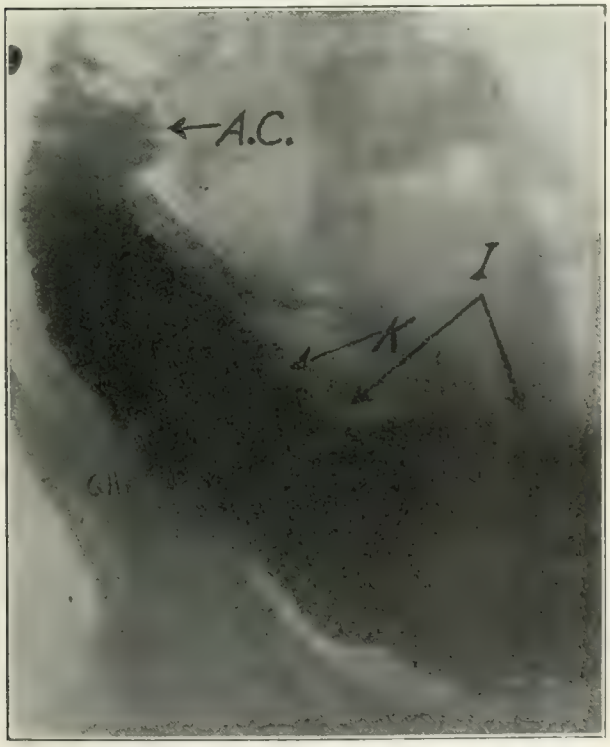


FIG. 2, Case I.—Six hour delay in the ileum. *K*, kink. *I*, ileum; *A.C.*, ascending colon.

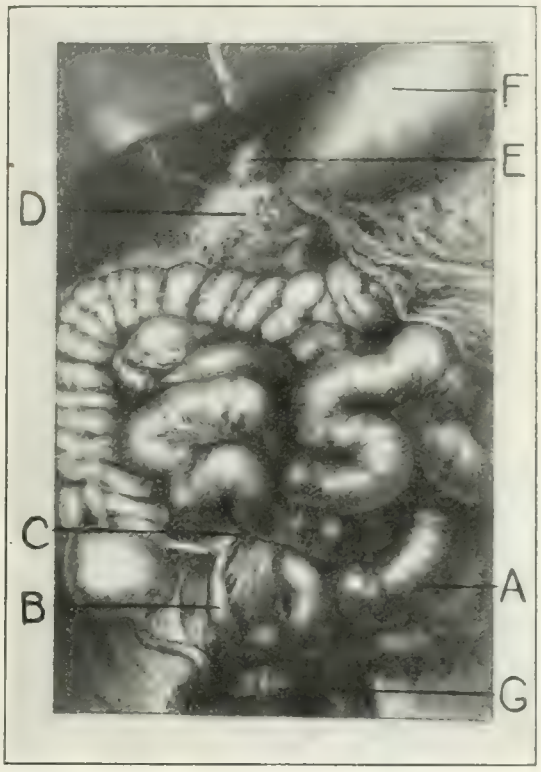


FIG. 3, Case I.—Shows patient in practically vertical position. *A*, dilated ileum; *B*, terminal coil of ileum; *C*, Lane's kink; *D*, inflammatory mass around first portion of duodenum; *E*, diverticulum of duodenum; *F*, dilated stomach; *G*, pelvic colon.

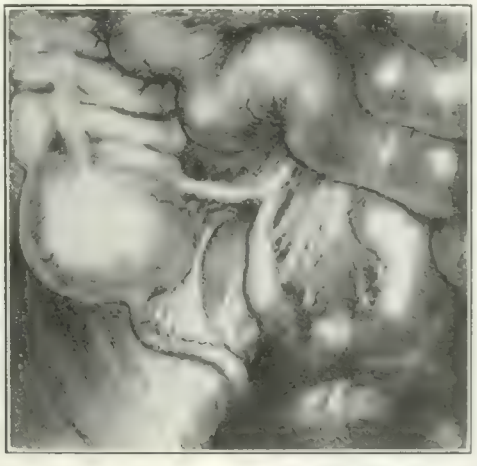


FIG. 4, Case I. Lower part [illegible]

Operation, February 26, 1913, New York Polyclinic Hospital. *Conditions found:* (Figs. 4 and 5.) From right to left the great omentum was twisted and adherent below to an appendix epiploica at the convexity of the sigmoid in the centre. The counterpull on the twisted omentum

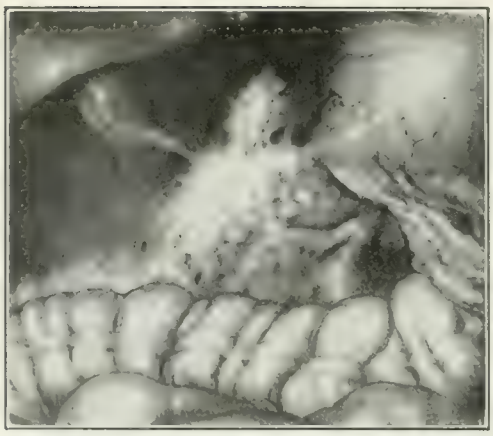


Fig. 3, Case —. Upper part of Fig. 2, enlarged, showing more detail.

was the attachment of the great omentum to the hepatic flexure and to a band between the ascending colon and the transverse colon, these parts making an acute angle at the hepatic flexure. This band was broken up in the angle and the raw surfaces turned in. There were found two distinct bands causing angulation at the duodenojejunal junction. When these bands were cut and the angulation corrected there was a visible diminution, clear to all present, of the collapsed condition of the jejunum.

Treatment. 1. Duodenojejunal bands severed. 2. The loop of jejunum fastened to under surface of transverse mesocolon, with a gentle curve, in just the position as for gastrojejunostomy. 3. Adherent omentum detached and raw surfaces turned in. 4. Appendix, which was long, wound around caput coli to the extent of four inches, and adherent to a typical Lane's band, becoming apparent as cecum was raised; was removed. 5. Lane's band, two inches from ileocecal valve, constricting ileum, severed transversely and sewed up longitudinally. 6. Mobile cecum fastened into right iliac fossa. *Aftertreatment.* Liquid paraffin and supporting abdominal belt.

Status præsens. December 15, 1913, very well; gained fifteen pounds in weight. Heart stronger and more regular. Beginning practice in distant city. Letter received stated regret at absence from meeting and reported feeling quite well.

Case III.[2] A. C. Female, aged fifty-two years, married, children. *Previous history.* Eleven years of constipation, pain in stomach, severe headaches, and sour regurgitation after eating. No relief with best medical care. Absolutely an invalid the past three years, spending the past five months in bed. Constant nausea; frequent vomiting. Sallow complexion; headaches; great mental depression; abdominal soreness. Had undergone nine operations. Three of these were laparotomies; right nephror-

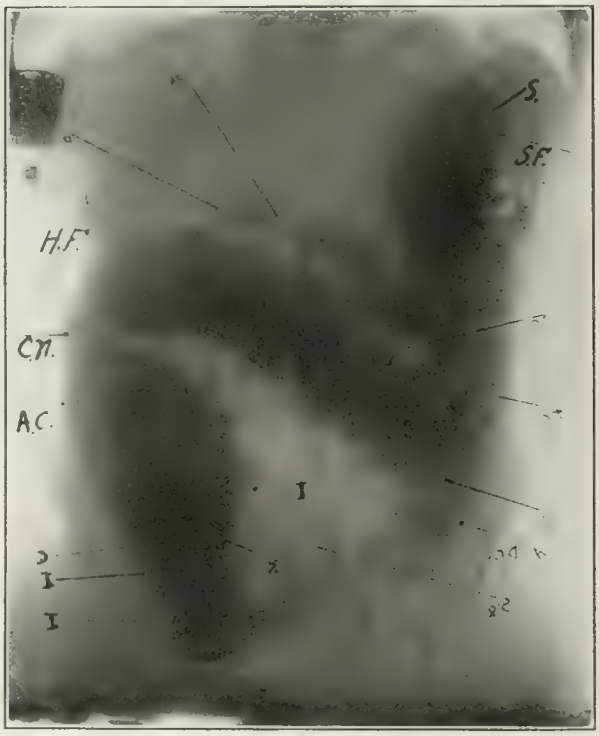


Fig. 7, Case II.—There is a bismuth meal in the stomach, and an enema in the colon. The cecum and ascending colon are dilated. Taken under same circumstances as Fig. 1.



Fig. 6, Case II.—The pelvic coil of the stomach marked *S*. The hepatic flexure of the colon; constriction marked *Cn* just below the hepatic flexure of the ascending colon. Picture taken immediately after the ingestion of a meal and the taking of a bismuth enema.

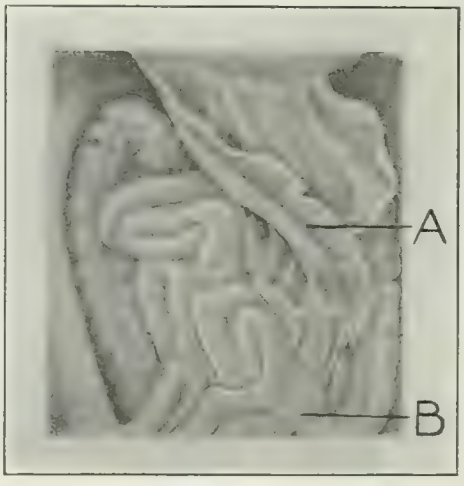


Fig. 8, Case II.—*A*, twisted omentum. *B*, adhesion between omentum and sigmoid.

[2]Presented at meeting.

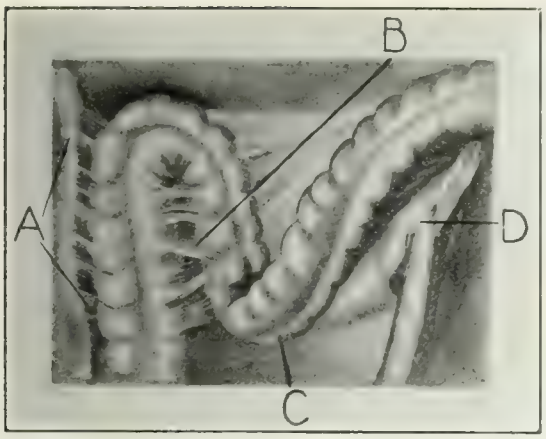


FIG. 9, Case II.—*A*, beginning Jackson's membrane; *B*, intercolonic bands; *C*, prolapsed colon held up; *D*, duodenojejunal kink.

rhaphy; ventral suspension; appendectomy, with removal of adhesions.

Clinical diagnosis. Chronic intestinal stasis, with abdominal adhesions. *Radiographic examination,* Doctor Quimby: "Pyloric adhesions, probably involving the first portion of the duodenum. Adhesions of the terminal ileum. Redundant sigmoid. The sigmoid's position suggests that it is involved in adhesions in the right iliac fossa."

Operation, March 6, 1913, New York Polyclinic Hospital. *Conditions found:* (Figs. 10 and 11.[3]) The great omentum was tightly adherent throughout the entire extent of the old central abdominal wound, pulling the incision downward. Adhesions between gallbladder and right side of great omentum, a broad band of about two inches, corresponding exactly to the length of the old wound from previous operation, on gallbladder. This band was strong and tight, with a considerable amount of fibrous tissue, and pulled on the right half of the greater curvature of the stomach, causing it to become corrugated and somewhat concave. There were inflammatory adhesions between the gallbladder and the duodenum, one band extending directly across the pyloric sphincter to the left of the hepatic flexure of the colon. Duodenum dilated; jejunum partly collapsed, with a number of adventitious evolutionary adhesions angulating the pylorus. The longitudinal bands of the cecum were partly obliterated. The cecum was long, mobile, and dilated at the head, which was turned toward the central abdominal line. Uterus retroverted and retroflexed.

Treatment. All bands and adhesions divided. Longitudinal bands of cecum shortened and head fixed in normal position. Malposition of uterus corrected. *Aftertreatment.* Tonics, diet, supporting belt, liquid paraffin.



FIG. 10, Case III.—Illustrates the position of the bismuth in the lower ileum and cecum at the seventh hour.

[3]This picture appeared in the *British Medical Journal* for November 1, 1913, p. 1129.

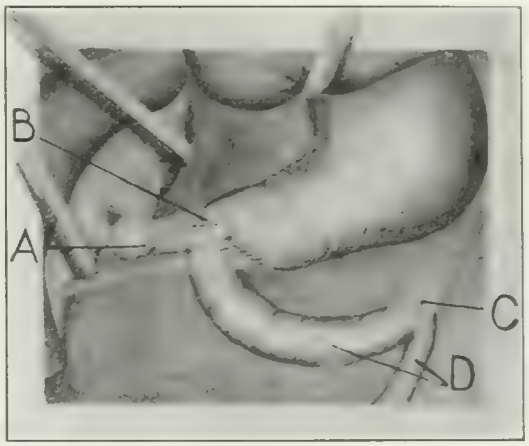


FIG. 11, Case III [illegible] the *British Medical Journal* for November 1, 1913).—*A*, adhesions around pylorus to gallbladder and liver; *B*, pylorus angulated and narrowed; *C*, kinking at duodenojejunal junction; *D*, duodenum dilated and jejunum collapsed.

Status præsens. December 3, 1913, condition better than for many years. Had gained fifteen pounds in weight, was no longer constipated, had no severe headaches, no depression, ate everything, and had no nausea.

CASE IV. E. S. Referred by Dr. William Van Valzah Hayes. Physician, male, aged fifty-five years, bachelor. *Previous history.* A year ago first noticed swelling of ankles, hands, and face, which disappeared promptly upon rest in bed and cathartic medication. Upon resumption of his duties this swelling returned and has persisted since. Moderate constipation for years; obstinate constipation for the past year. Very nervous and emotional; drowsy after noon meal. More or less insomnia; tendency to acne; considerable backache, low down; easily fatigued. No previous operation. *Clinical diagnosis.* Chronic intestinal stasis. *Radiographic examination,* Doctor Quimby: "Evidence of old gastric ulcer, probably healed. Iliac stasis

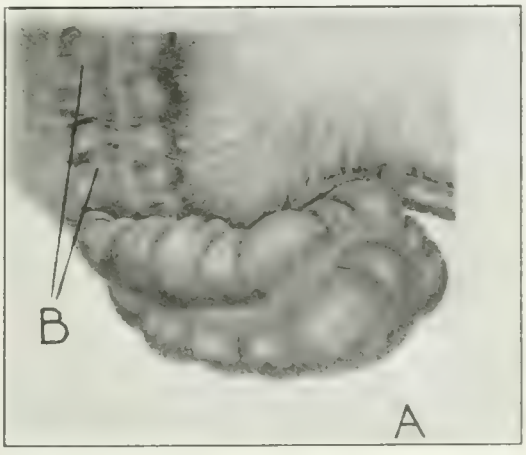


FIG. 12, Case III.—*A*, cæcum mobile; *B*, Jackson's membrane.

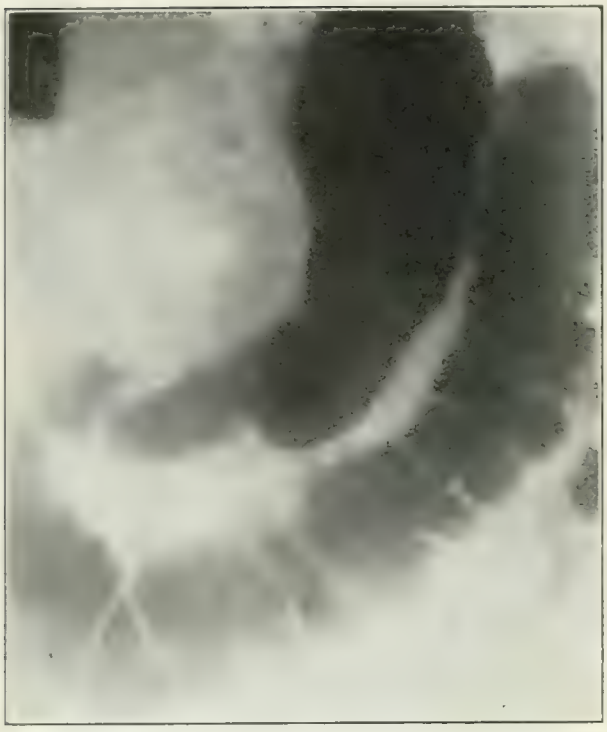


Fig. 13. Case IV.—Deformed lesser curvature and gastric spasm. Evidence of an old ulcer. Residue in colon from previous enema. Picture of stomach immediately after ingestion of bismuth.

due to a kink and probably adherent appendix. The stasis is of pronounced degree. Angulation of the sigmoid. Redundant sigmoid."

Operation, June 3, 1913, New York Polyclinic Hospital.



Fig. [illegible] ileum, indicating a patulous ileocecal valve and angulation of the sigmoid. Some residuum in stomach, taken one half hour after ingestion and immediately after bismuth enema.

Conditions found: (Figs. 13 and 14.) Appendix angulated and adherent to the under surface of mesentery by vascular bands, up to within an inch of its tip, lying parallel with the long axis of the ileum. There was no typical Lane's band, but running from the angle of the appendix just about an inch from the ileocecal valve was a thickening of the under surface of the mesentery which led into a band, this being almost like a continuation of the anterior muscle band and spreading outward at its base. The cecum was very mobile and a Jonnesco's fold ineffectually held the caput coli in position. A Jackson's membrane pushed across the ascending colon to the anterior longitudinal muscle band, becoming taut when the caput coli was allowed to sink and rotate into the pelvis, as when the patient was in an erect position. This Jackson's membrane lay about the middle of the ascending colon and ended above the ileocecal valve. No duodenojejunal kink was found. The fundus of the gallbladder was tightly adherent to the great omentum two inches along its greater curvature by a number of avascular and vascular bands going from the pylorus toward the cardia, thus constricting the omentum. These were freed and the body of the gallbladder was found attached by avascular bands to the gastrohepatic omentum. No gross evidence of a gastric ulcer was found, but the pylorus was

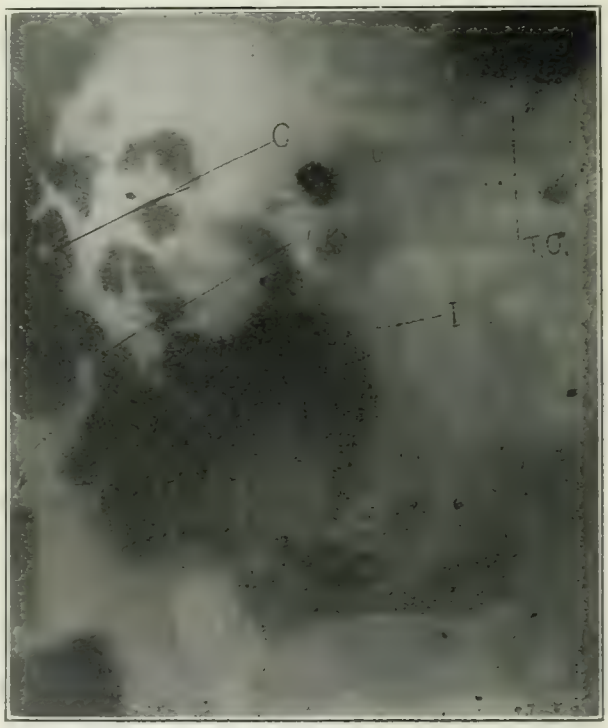


Fig. 14.—Duo[illegible] kink and stomach [illegible] appendix, eight hours after ingestion of bismuth.

slightly constricted, seemingly thickened, admitting only the tip of the index finger. The stomach was normal. The sigmoid was found somewhat redundant; below the last normal kink there were a number of bands attaching the sigmoid to what seemed to be a condition analogous to the broad ligament in the female, also corresponding to a large Jonnesco's fold, the whole inner wall of the abdomen being thickened and pulled over toward the sigmoid. This fold extended from the brim of the pelvis to the cavum Reitzei, forming a shelf to which the sigmoid was attached by several avascular bands, almost like tissue paper in appearance, which pulled this fold into its shelflike position.

Treatment. Appendix removed, which released the beginning Lane's band. Raw surfaces under ileum carefully covered. Caput coli fastened into normal position. Bands about gallbladder severed and all raw surfaces covered. Pylorus stretched so that it admitted easily the entire index finger. Bands about sigmoid, corresponding to Jonnesco's fold, cut transversely and sutured longitudinally, allowing the fold to fall back toward the abdominal wall. *After-treatment.* Liquid paraffin, abdominal belt.

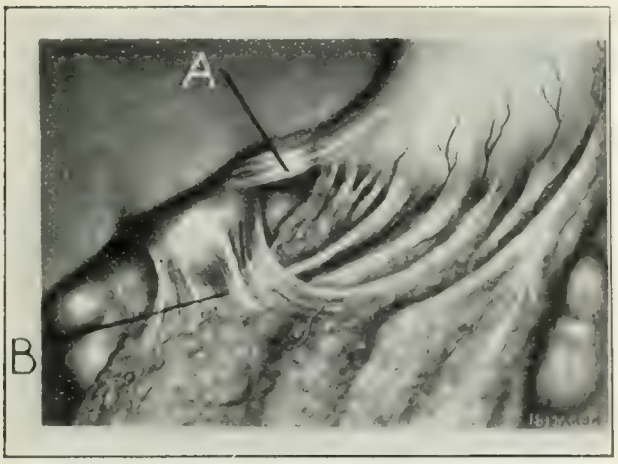


FIG. 16. Case IV. *A*, bands between gallbladder and stomach; *B*, adhesions between omentum and gallbladder.

Status præsens. November 28, 1913, at a dinner given in honor of Sir Arbuthnot Lane, in New York, in an after-dinner speech the patient spoke of "being made over," and of expecting soon to resume practice. Other engagements prevented his attending this meeting. Reported considerable gain in flesh and strength; bowels were easily controlled by the use of paraffin.

CASE V. E. H. Referred by Dr. William Van Valzah Hayes. Female, aged forty years, single. *Previous history.* Ulcer of stomach, with vomiting of two cups of black blood twelve years ago. Headache all her life. Attacks lasting one half to sixteen hours, of headache, nausea, vomiting, with photophobia, for years. Constipation; acidity of stomach; hemorrhoids. General abdominal soreness at frequent intervals. Subject to hay fever.

Clinical diagnosis. 1. Partial obstruction of pylorus; 2, abdominal adhesions; 3, iliac stasis. *Radiographic diagnosis,* Doctor Quimby: "A healed ulcer on the lesser curvature. Adhesions of the first portion of the duodenum. Gastric stasis, due to interference at the junction of the first and second portion of the duodenum. Iliac stasis, due to adhesions, with a preexisting Lane's kink. Adhesions of transverse colon to the cecal structures. Stasis in the sigmoid."

Operation, January 7, 1913, New York Polyclinic Hospital. *Conditions found:* (Fig. 23.) Duodenum the site obstruction; only tip of smallest finger with difficulty inserted. Pylorus thickened. Some angulation of pylorus. 2. Marked kinking of duodenojejunal juncture with dilatation of duodenum. 3. Lane's kink, band marked, but narrow. Iliac stasis. Cæcum mobile. Appendix adherent to band. 4. Slight Jackson's membrane.

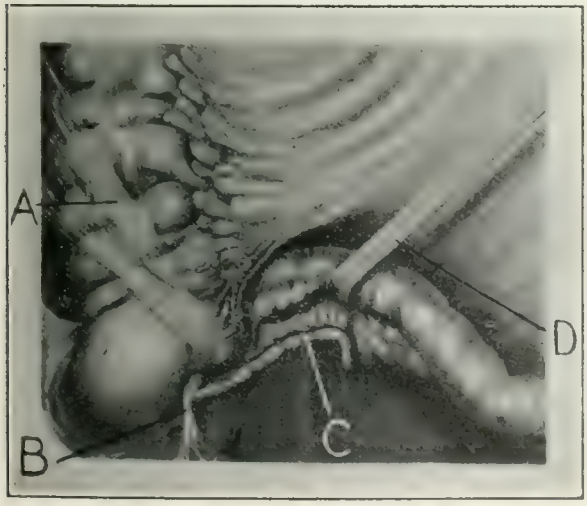


FIG. 17. Case IV.—*A*, Jackson's membrane; *B*, infracecal band; *C*, appendix angulated and adherent to under surface of mesentery of terminal ileum; *D*, retractor holding up terminal ileum.

Treatment. 1. Pyloroplasty (Heineke-Mikulicz). 2. Duodenojejunal kink stretched and some fibres divided. 3. Lane's band cut transversely and sutured longitudinally. 4. Apendix removed. 5. Cecum put into position. *After-treatment.* Liquid paraffin; abdominal belt.

Status præsens. Last seen six months after operation. At that time was very much better in every way. Lost sight of since.

CASE VI. W. K. Referred by Dr. William Van Valzah Hayes. Male, aged thirty-six years, married. *Previous history.* Chief symptoms began in 1907. Canker sores in mouth; anorexia; tongue coated; gas in stomach; tenderness in region of appendix. Stained color to skin. Appendectomy done. Medical treatment for ulcer of stomach, May, 1912. Duodenal feeding for four weeks. Improvement only temporary. Could seemingly not get far with treatment. Usual symptoms of moderate stasis.

Clinical diagnosis. Chronic intestinal stasis, with adhesions about scar and site of appendicitis stump. *Radiographic diagnosis,* Doctor Quimby, December 19, 1912: "Pyloric ulcer. Duodenal adhesions. Duodenal delay at the junction of the first and second portions. Lane's kink. Constricting band across the ascending colon about 5 cm. from the hepatic flexure."

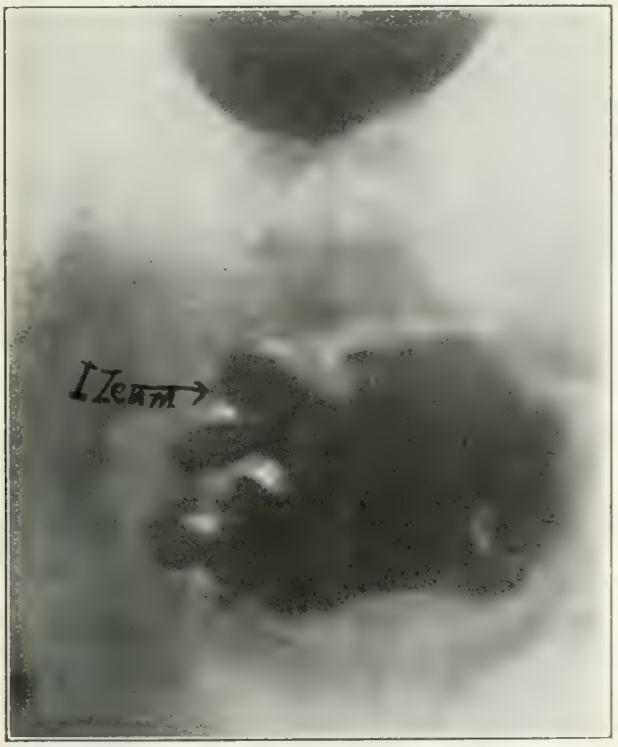


FIG. 18. Case V. A six hour accumulation in the terminal ileum; nothing has entered the cecum.

Operation, February 19, 1913, New York Polyclinic Hospital. *Conditions found:* (Figs. 21 and 22.) 1. Pyloric of a few cobweb adhesions. Pyloric opening readily allowed invaginated stomach and index finger of operator to enter. Lane's kink about 1.5 inch from cecum. Postoperative adhesions, a broad band, 1.5 inch wide, fastening cecum and adjoining ileum to a point in abdominal wall anteriorly and externally. Fairly firm, though small bands of adhesions, holding first portion of jejunum upward to left. Band across ascending colon.

Treatment. Bands and adhesions severed; peritoneum sutured over bared area. Intestines and omentum placed in normal position. *Aftertreatment.* Liquid paraffin; abdominal belt.

Status præsens. December 1, 1913, reports by letter, much improved in every way. Great change from past few years.

CASE VII. F. F.[1] Referred by Dr. Law McAfee Ingham. Female, aged thirty-five years, married, two children. *Previous history.* Diagnosis of tuberculosis of both lungs made in the Department of Clinical Diagnosis, New

[1] Presented at meeting.

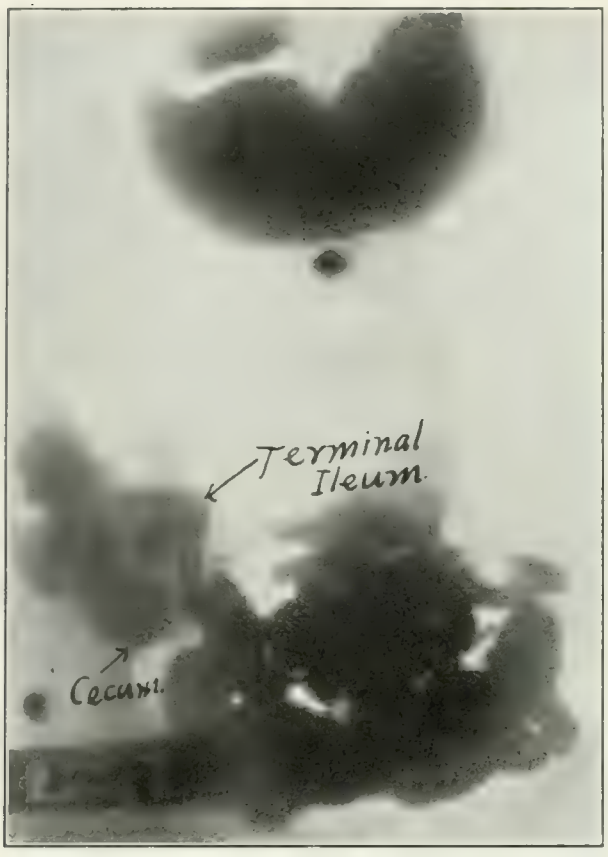
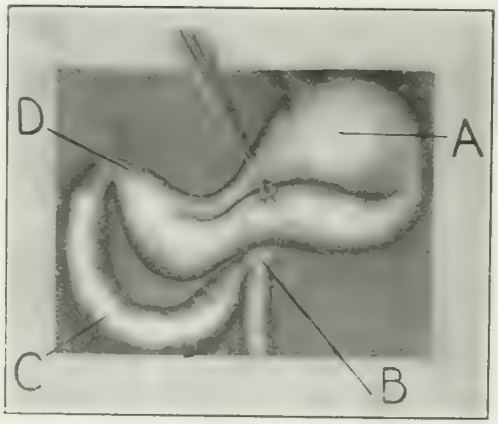


Fig. 19, Case V.—A residue in the stomach at eight hours. In the lower portion of the cut can be seen bismuth in the terminal ileum and cecum.

York Polyclinic Medical School and Hospital, service of Doctor Beal, in the spring of 1910. Sent to Seton Hospital for tuberculous patients. While there first noticed gastrointestinal symptoms. Severe pains in abdominal region; vomited blood and food immediately after meals and at varying intervals between meals. Gradual emaciation, loss of strength, continued nausea and vomiting, with expulsion of large quantities of bile. Three previous laparo-



[illegible] Case V.—[illegible] omentum not pictured; *B*, bands at duodenojejunal junction; *C*, dilated duodenum; *D*, bands about pylorus.

tomies: 1. Gastroenterostomy, January, 1911; 2, the "breaking up of adhesions" resulting from first operation, February, 1911; 3, the "breaking up of adhesions," January, 1912. After the second operation was sent to a home for incurables, presumably to die. Temporary improvement after the last operation. Sent to me, February 13, 1913. At that time a mere shadow. Looking back, a clear history of intestinal stasis for years.

Clinical diagnosis. Chronic intestinal stasis. Vicious circle and abdominal adhesions. *Radiographic diagnosis,* Doctor Quimby: "Iliac stasis, probably due to a Lane kink, although the distorted terminal ileum is suggestive of adhesions. The greater curvature is at the level of the



Fig. 22.—Case V.—*A*, dilated ileum proximal to Lane's band; *B*, Lane's band; ileopelvic band; *C*, angulated appendix caught in band; *D*, Jackson's membrane.

umbilicus. Pylorus is 4.5 cm. above, and one cm. to the right of umbilicus. The stomach contents are discharged by way of the pylorus, and an opening on the greater curvature, probably producing a vicious circle."

Treatment. The safer procedure to be followed with reference to the stomach was to close the pylorus, which was done, and to do an enteroenterostomy, giving a free passage of the stomach contents through the gastroenterostomy opening, and on through the enteroenterostomy opening below. This procedure was followed. *Aftertreatment.* Liquid paraffin; restricted diet; abdominal belt.



Fig. 20, Case V.—An enema has been administered which has filled the entire colon, except the cecum.

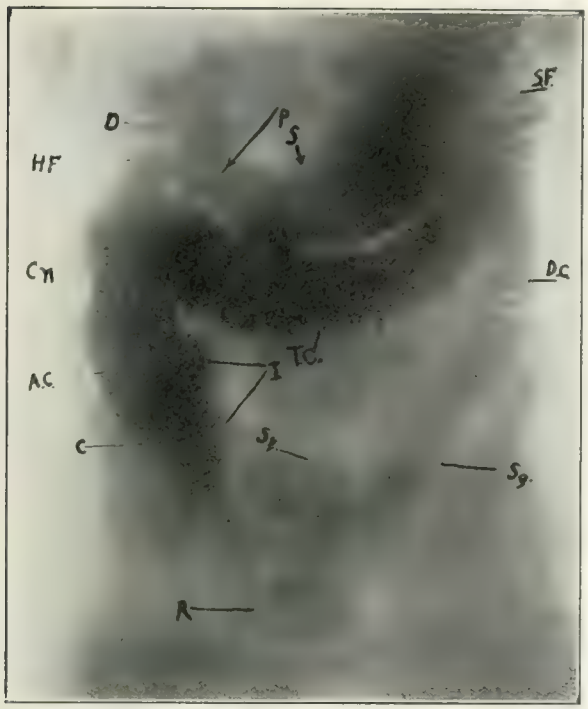


FIG. 23. Case VI.—The stomach contains a meal of bismuth while an enema has been administered containing the same material. It will be observed that it has passed through and accumulated in the terminal ileum. *C*, cecum; *I*, ileum; *A.C.*, ascending colon; *Cn*, constriction; *H.F.*, hepatic flexure; *D*, duodenum; *P*, pylorus; *S*, stomach; *T.C.*, transverse colon; *S.F.*, splenic flexure; *D.C.*, descending colon; *Sg.*, sigmoid; *R*, rectum. Taken immediately after meal and bismuth enema.

Status præsens. December 15, 1913, patient in much better condition than for years. The color had returned to face and lips, appetite was good, she was gaining in flesh and strength, and able to retain everything she ate. Practically made over from an absolute invalid to a fairly healthy and happy woman.

I have endeavored, by means of these few case histories and pictures, to demonstrate very briefly the existence of the various conditions which cause, and the results produced by, chronic intestinal stasis. It must be borne in mind that we must study the x ray plates, the fluoroscopic findings, and the drawings made at the operation with an appreciation of mechanical conditions. When the subject is in the prone position, as on the operating table, these kinks and angulations may not be apparent. When in the upright posture, as when

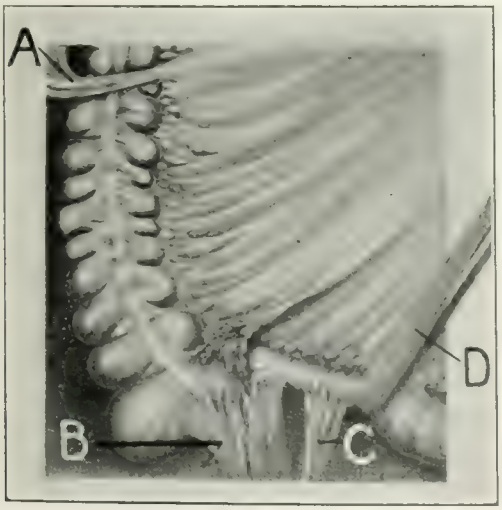


FIG. 24. Case VI.—*A*, band across ascending colon constricting intestine; *B*, adhesions at site of appendix stump; *C*, ileopelvic band; *D*, retractor holding up terminal ileum, exposing band.

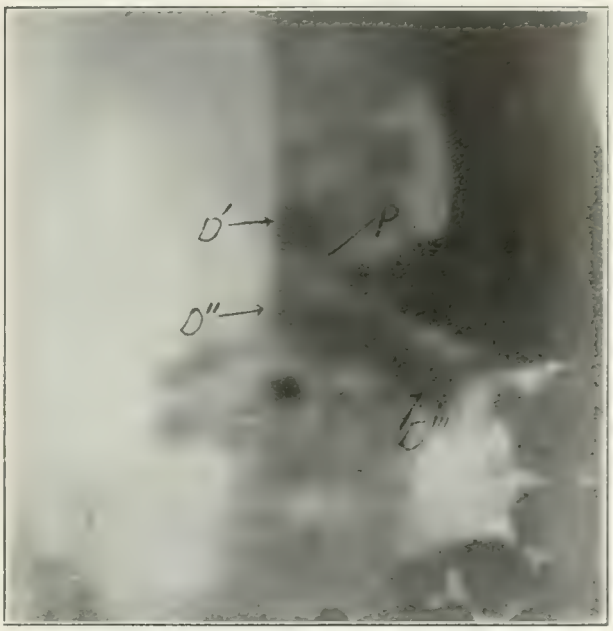


FIG. 25, Case VII.—*P*, pylorus; *D'*, first portion of the duodenum; *D''*, second portion of the duodenum; *D'''*, third portion of the duodenum. Taken immediately after ingestion of bismuth.

standing, or in the reverse Trendelenburg position on the table, or if the organs are carefully held up, the constricting bands and the resulting kinks become far more apparent. This mechanical fact perhaps explains the difficulty experienced by many

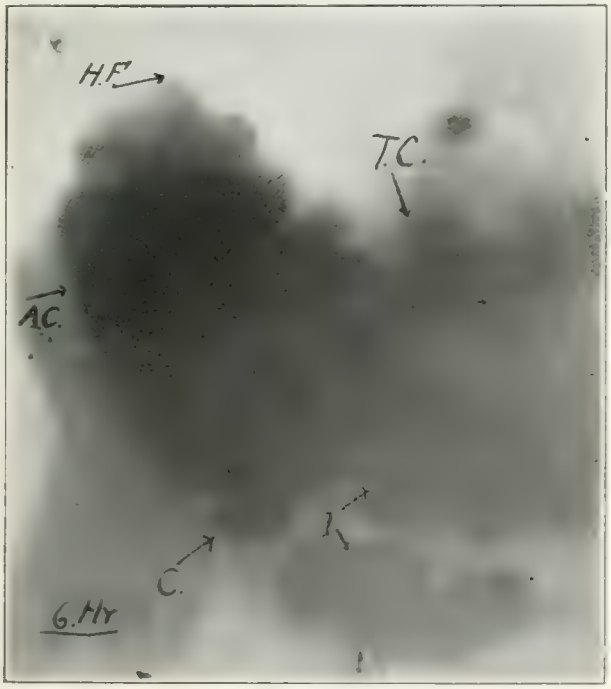


FIG. 26. Case VII. [illegible] *H.F.*, hepatic flexure. [illegible] progress of the bismuth meal; an accumulation remains in the lower ileum. As the bismuth has advanced rapidly because of the patulous gastrocolic stoma, [illegible] of the progress of the meal.

surgeons in "seeing the kinks." Added experience, however, with these changes of position borne in mind, has practically eliminated the former doubt concerning the existence of these "crystallizations of lines of strain," as Lane has called them, and the resultant slowing of the passage of the contents of the great drainage system of the body.

Just how far the admirable pioneer work of Lane in the study of chronic intestinal stasis will lead us, time and further study must determine. We no longer question the far reaching relationship of chronic intestinal stasis to many conditions which were formerly considered distinct disease entities. Lane, as is well known, has repeatedly emphasized a series of affections brought about by the enfeebled resistance which the tissues offer to the invasion of microbes. Among these may be mentioned here, pyorrhœa alveolaris; tuberculosis; rheumatoid arthritis; thyroid adenoma or general hypertrophy, or even exophthalmic goitre; Still's disease (polyarthritis affecting children and marked

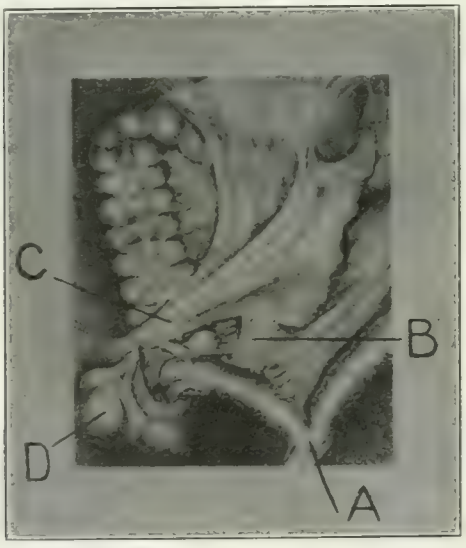


Fig. 2.—Case VII. *A*, adherent appendix; *B*, adherent omentum to upper leaf of mesentery; *C*, omentum thickened, attached to abdominal wall external to colon; *D*, cecum twisted upon itself; appendix attached to band passing in front of ascending colon and causing constriction.

by enlargement of the lymph nodes); infections of a purulent nature in the skin; ulcerating endocarditis, and many other affections. It may be predicted that many skin diseases, notably psoriasis, are initiated or rendered more severe and persistent by chronic intestinal stasis. The mental depression of stasis patients has been so uniformly noted, that the question arises as to how far many of the milder forms of mental derangement, epilepsy, criminal insanities, etc., may be influenced by the interference with normal body drainage.

Intestinal stasis presents a wide field for research on the part of the physician and surgeon; at the same time it opens the door of hope for many a person who would otherwise be considered as doomed to chronic invalidism.

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34 Gramercy Park.

CHRONIC INTESTINAL STASIS.*

Röntgenographically Considered.

By A. Judson Quimby, M. D.,
New York,
Clinical Professor of Radiography, New York Polyclinic Medical School and Hospital; Radiographer, New York Foundling Hospital.

The Röntgen examination of the intestinal tract to determine stasis or chronic constipation, involves the use of an opaque material in the form of a meal, which is administered and then followed in its normal course through the bowel at such time periods as will elicit the function of the organ and anomalies which exist. With the great variation in individuals, the technic that we may pursue is difficult to describe, therefore I wish to omit any prolonged discussion of methods except to state briefly that in my own cases I so arrange the time periods for the numerous examinations, as to enable me to röntgenograph places in which we expect to find causes for stasis, and at the same time, avoid overlooking unusual departures from the normal. I can recall only three patients in the last twelve months having registered a normal progress; not including several individuals who had been taking cathartics, laxatives, and oils; the second test on these quickly proved the first one fallacious.

In the administration of opaque material, we have the choice of several substances; those commonly used are bismuth subcarbonate and barium sulphate. My practice is to administer four and one half to six ounces in making my stasis test. The quantities depend on the height and weight of the patient. This meal is followed through the patient in as nearly a systematic manner as possible. The cases are examined at definite periods, which usually extend over a sufficient time to permit the bowel to clear itself of the original meal. The great variation in the different individuals usually results in modification of the periods, and either increase or decrease in the frequency of examination. Complete inspection requires from six to ten visits, and lasts from three to six days. Departures from the schedule are made to meet such variations as are presented. About fifty per cent. will evacuate the entire amount in fifty-four hours; of the remainder, thirty per cent. will evacuate in seventy-eight hours; fifteen per cent. in one hundred and two hours; five per cent. will extend beyond this period. The class of cases examined by myself have been those which have been subjected to all kinds of methods in diagnosis and treatment, and have been submitted for x ray examination only after other methods have failed to elicit all the in-

*Read before the Medical Association of the Greater City of New York, December 15, 1913.

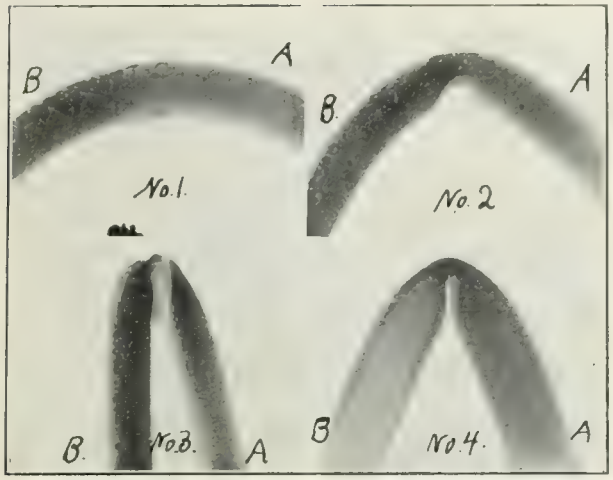


FIG. 1.—Rubber tube which had been radiographed while bismuth was forced through it under pressure; the flow is from *A* to *B*. No. 1 illustrates the tube slightly curved without any change in diameter. No. 2 exhibits a greater degree of curvature with traction in the middle partly constricting the tube, yet permitting the bismuth to pass through. No. 3 shows how greater traction has been applied, resulting in bending the tube and producing an acute angle, which has obliterated the canal and stopped the flow of bismuth emulsion. No. 4 illustrates one arm of the acutely flexed tube full of bismuth emulsion under pressure, while the contents of the other arm have flowed out and not left sufficient residue to cast a shadow. The action of the bismuth in this tube illustrates what occurs when the intestine is bent at an acute angle at the attachment of a supporting ligament.

formation desired; therefore, we should not regard these percentages as applied to the entire human race, but only to the most pronounced cases of constipation.

Preliminary to the examination, all enemas, cathartics, laxatives, and oils should be withheld. The influences of cathartics and laxatives extends over about thirty-six hours. The effect of oils may be observed much longer; the influence of mineral oil will persist a week. On first inspection of the fluoroscope following the administration of the meal six hours previously, I can usually determine whether oils have been recently administered.

The mechanics of obstruction may be best explained by first illustrating the method by which this occurs, when kinking of the bowel is the phenomenon which retards the onward propulsion of its contents. If we suspend a number of coils of rubber tubing containing a bismuth suspension under pressure, and apply stress in such a way as to change the normal curve of the tube to angles of various degrees, some of which are sufficient to cause the tubes to collapse and obliterate the lumen, then röntgenograph it, we have a picture of the wall of the tube, representing the bowel wall and the contained bismuth. In illustration No. 1 we have views of what occurs and the explanation accompanies the röntgenogram.

The foregoing illustration in the simple mechanics of obstruction that arise where normal suspension stress is applied, is especially applicable to conditions found at the junction of the first and second portions of the duodenum, of the duodenum with the jejunum, and at the terminal ileum; its general principles may also be applied to the large intestine, especially at the hepatic and splenic flexures, but other mechanical elements enter into the interference in the ascending and descending colon, the principal one of which is gravity. Mechanical twists also play an important part at various points of the intestine; this twisting is most apt to occur in the terminal ileum, and is due to the downward and inward rotation of the ptosed cecum. It is occasionally observed in the duodenum, but here is most apt to be secondary to displacement of organs as the result of adhesions.

Accumulations of gas at the hepatic and splenic flexures and at the apex of the sigmoid do indirectly prevent the progress of the intestinal contents; this can be illustrated by reference to the resistance of air in a hollow tube when an attempt is made to force a fluid through it. I do not believe that gas accumulations will primarily dilate the hepatic and splenic flexures; I do think that where gas forms, there is a mechanical obstruction beyond it. If there are functional disturbances and passive dilatation, it is an entirely secondary phenomenon.

The normal suspension points of the bowel are the first to receive stress when ptosis occurs; the exact age at which we may expect ptosis to manifest itself cannot be given. We see it in the very young; also we may observe in individuals at a very early age, various forms of abnormal supports for the intestine. The question has arisen, whether these supports are congenital or acquired. We have no proof today that they are acquired, but we have the evidence that the newborn may have mesenteric bands, short mesenteries, and various kinks of the bowel that are found at operation in

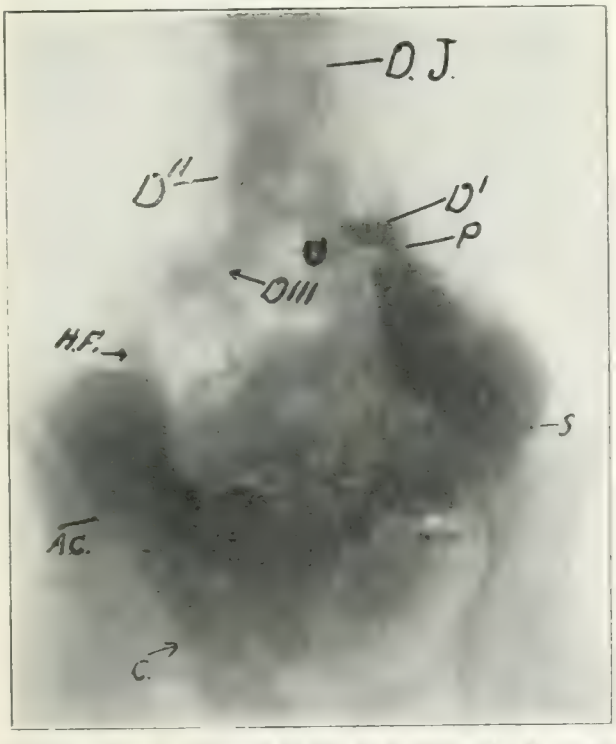


FIG. 2.—Miss S. Referred by Dr. A. J. W. [illegible] cus; *S*, stomach; *P*, pylorus; *D'*, first portion of duodenum; *D''*, second portion of duodenum; *D'''*, third portion of duodenum; *DJ*, junction of duodenum with jejunum. Plate taken six hours after meal. This stomach is resting below the level of the [illegible] the left iliac fossa. The pylorus is [illegible] and about 4 cm. [illegible] sufficient gastric tone to carry the bismuth up into the third portion of the duodenum. At the time the [illegible] part of the duodenum was partly emptied. In the original röntgenogram, bismuth can be seen through the duodenojejunal junction. The acute angulations at the junction of the first and second portion of the duodenum and [illegible] from passing this point.

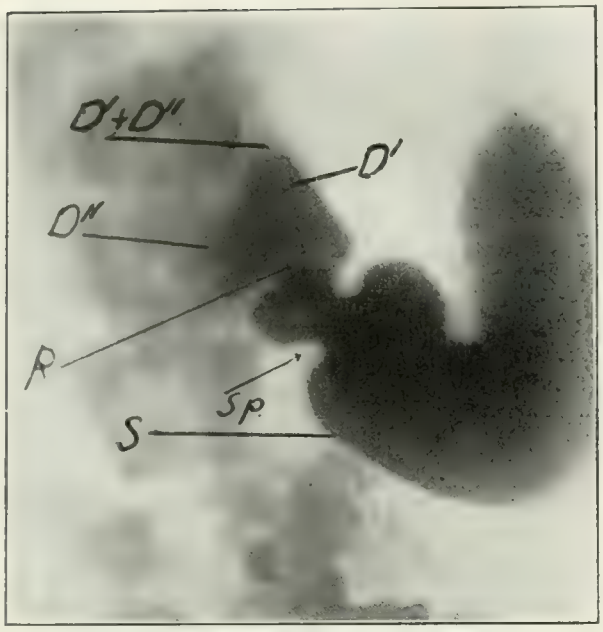


Fig. 3.—Mrs. K. Referred by Dr. G. Schaub. *S*, stomach; *P*, pylorus; *D'*, first portion of duodenum; *D''*, second portion of duodenum; *Sp*, gastric spasm. This illustrates dilatation of the first portion of the duodenum, due to an acute angle at the junction of the first and second portion, the result of a traction of the ptosed stomach on the duodenohepatic ligament. The röntgenogram is taken within ten minutes of the administration of a meal.

the adult. I have had the opportunity of examining children of all ages, and in them have found the same röntgenographic evidence of anomalous conditions as in the adult. Those found in the adult are as a rule more accentuated, the obstructive phenomena and stasis being more pronounced. Whether this stasis is due to these particular individuals having always had this amount of obstruction, and their normal resistance having overcome the evil effects to a sufficient degree to permit them to continue up to the time of life at which their symptoms cause them to seek medical aid, is also debatable.

A study of a number of cases with postoperative adhesions, and adhesions following acute and chronic inflammatory processes in the appendix, gallbladder, stomach, etc., has led me to conclude that the conditions that arise within the intestine in this class of cases, compared with inherited and acquired adventitious obstructive lesions, are with some exceptions the same.

We will broadly divide the obstructions into simple mechanical obstructions, simple obstructions combined with organic changes, and organic obstructions without mechanical phenomena. The simple mechanical obstructions occur where the suspending

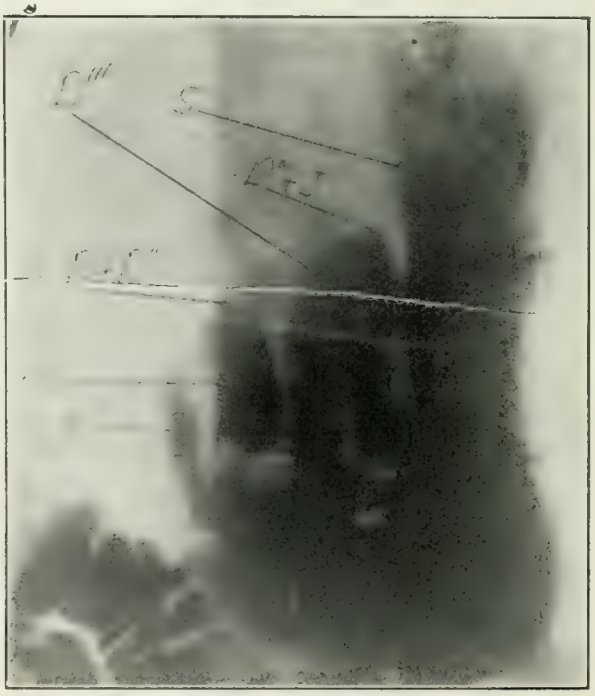


Fig. 5.—Same case as Fig. 4. *S*, stomach; *D'*, first portion of duodenum; *D''*, second portion of duodenum; *D'''*, third portion of duodenum; *DJ*, junction of duodenum with jejunum. It will be seen that the first portion of the duodenum is elongated, even when in the horizontal position, its apex being high above the greater curvature; also that the junction of the duodenum with the jejunum is very high. This could not be seen when the patient was erect, because of its position behind the stomach. In Fig. 5 we have retention in the third portion of the duodenum, continuing while the patient is erect; as soon as the horizontal position is assumed the bismuth pours through into the jejunum.

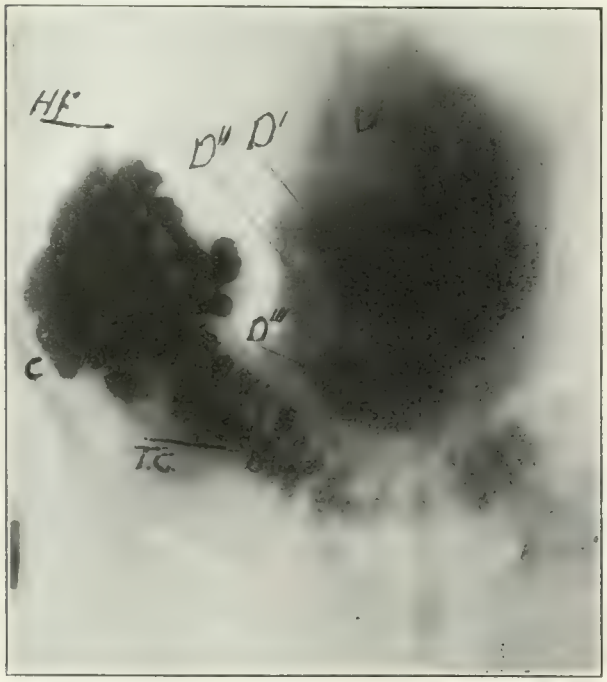


Fig. 4.—Miss H. Referred by Doctor Sorapure. *U*, umbilicus; *D'*, first portion of duodenum; *D''*, second portion of duodenum; *D'''*, third portion of duodenum; *C*, cecum; *HF*, hepatic flexure; *TC*, transverse colon. In this röntgenograph the patient is erect. It is taken eight hours after the administration of the meal. There is a large residue in the stomach, and in the third portion of the duodenum; the latter is dilated. See Fig. 6.

ligaments or attachments of the bowel, when the patient is in a favorable position, exerting a greater traction at a given point, cause this hollow tube to bend upon itself in such a way as to decrease its calibre sufficiently to inhibit peristalsis and retard the onward propulsions of its contents. The mechanical obstructions combined with organic changes consist of those cases in which we find bands, contractions, adhesions, and mucous ulcers at a point which is a common location for the simple mechanical class. In addition, we also find this class of obstructions where adventitious supports, as mesenteric and peritoneal bands, have assumed the functions of the normal supporting ligaments.



Fig. 6. Miss K. Referred by Dr. Maurice Packard. *S*, stomach; *D'*, first portion of duodenum; *D''*, second portion of duodenum; *D'''*, third portion of duodenum; *DJ*, junction of duodenum with jejunum. This is dilatation of the duodenum, most pronounced in the first half of its third portion, and is the result of adhesions in the distal end of the duodenum. The röntgenogram was taken eight hours after the administration of the meal.

Organic obstructions without mechanical aid are usually the result of an external inflammatory process transmitted to the bowel wall, causing connective tissue formation and contraction; or they may be secondary to an ulcerative process originating in the mucous membrane or peritoneal covering, as in typhoid fever, ulcerative colitis, malignancy, and the various types of peritonitis.

After having explained the mechanics of obstruction, which is the result of ptosis and adventitious formations, I will briefly state the points at which they commonly occur. First, along the lesser curvature of the stomach, chiefly near the pylorus, the lesser omentum may contract to such an extent as to pull the stomach upward at this point and materially interfere with the discharge of its contents. We do not see pronounced obstruction of this type very frequently. The next point at which there is mechanical obstruction, very frequently of the simple type, but often combined



Fig. 8. Mrs. E. Referred by Doctor Hewatt. S, stomach; D', first portion of duodenum; *U*, umbilicus; *I*, ileum; *TI*, terminal ileum; *K*, iliac kink. This is the six hour progress of a bismuth meal. It will be observed that there is a large gastric residue, and that the first portion of the duodenum is dilated; that there is no interference at the pylorus. Gastric motility is very good. While the patient is in the horizontal position bismuth is rapidly discharged. There is a large accumulation in the lower ileum, which extends up the terminal ileum to an obstruction marked *K*. See Fig. 9

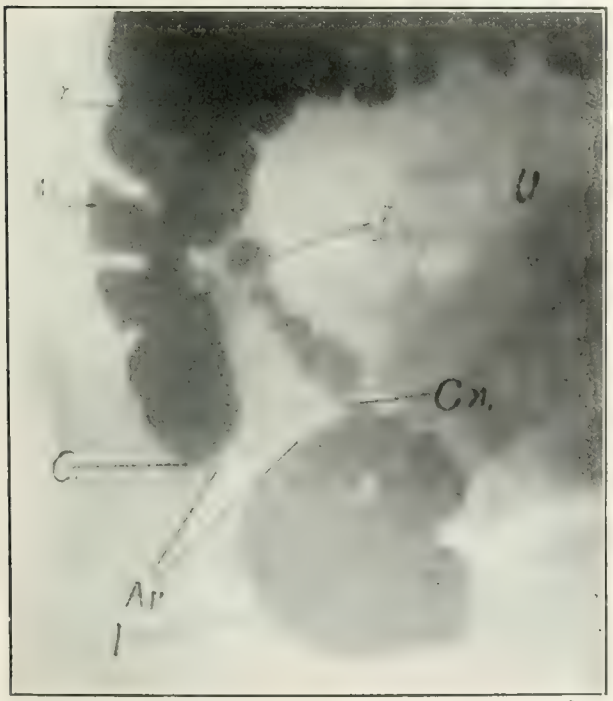


Fig. 7.—Mrs. E. Referred by Doctor Morris. *I*, ileum; *Cn*, constriction; *Ap*, appendix; *C*, cecum; *AC*, ascending colon. This plate was taken at the eighth hour after the meal. The terminal ileum is seen passing upward from the collection of iliac coils to the cecum. At the point designated as constriction on the ileum the tip of the appendix is attached; this offers sufficient obstruction to retard the iliac contents.

with organic changes, is at the junction of the first and second portions of the duodenum, or the apex of the conus duodenalis. It has been my observation that more cases of gastric delay occur as a sequela of this obstruction than from all other causes combined; this may sound like a rash statement, but if we consider the evidence as we find it in these subjects when thoroughly examined in both the vertical and horizontal positions under different conditions, there is ample evidence of its truth. More than fifty per cent. of cases with gastric delay have been observed to have normal motility or hypermotility amply sufficient to carry the stomach contents up into the conus duodenalis. The stomach

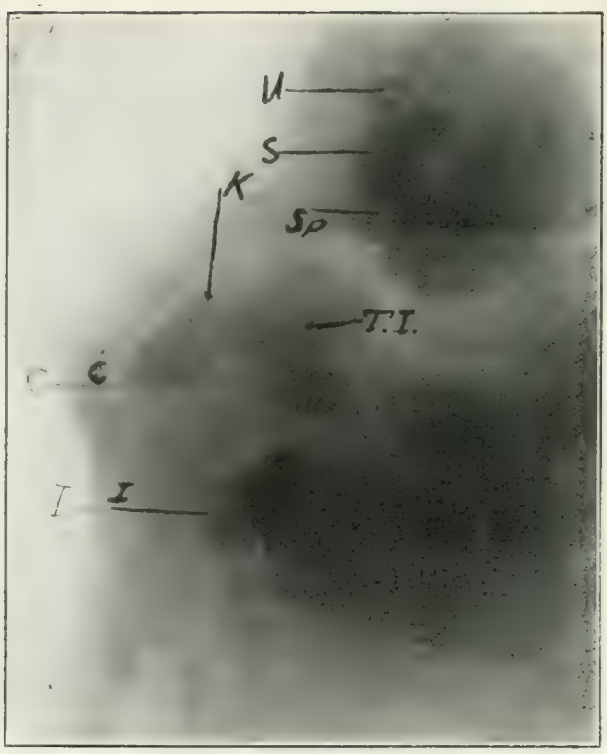


Fig. 9.—Same as Fig. 8. *U*, umbilicus; *S*, stomach; *I*, ileum; *TI*, terminal ileum; *C*, cecum; *K*, constriction of the iliac kink. While two hours have intervened between the taking of this röntgenogram and Fig. 8, but a very small amount of bismuth passed through the iliac kink and entered the cecum.

may be ptosed so that it lies at the brim of the pelvis, and if observed over a suitable period, will be found equal to the task of elevating its contents to a sufficiently high level to pass them through the pylorus and fill the first portion of the duodenum, but if carefully inspected at this moment, it will be seen that but a very small amount, if any material, has passed into the second portion of the duodenum. Place this patient in a horizontal position and the contents of the stomach are rapidly discharged, and within the normal period the stomach will be emptied. This is an important point in the diagnosis of the various causes of the gastric delay, and one that has been overlooked by many. Occasionally there will be observed a stomach in which gastric atony is the sequel of this mechanical obstruction. All these cases appear to respond sufficiently to a favorable position to permit the stomach contents to pass onward. Such organic changes may occur at the first and second portion of the duodenum, so as to produce a stenosis that cannot be overcome by the aid of position drainage.

The next point at which simple mechanical obstruction, or that combined with organic changes, occurs, is at the junction of the third portion of the duodenum with the jejunum. The result is dilatation of the second and third portions of the duodenum. The difficulty of demonstrating this on the radiograph is great because of the position of this flexure of the small bowel. In some of the cases, dilatation appears above the lesser curvature of the stomach and may be seen, but in many it rests behind the stomach and is overshadowed by the stomach contents; to inspect it requires prolonged observations such as can be made only under ideal conditions. As a rule in these cases, the ligament of Treitz is contracted, and adventitious bands are found aiding this ligament in its endeavor to support the intestine; these all tend to retract the duodenum to the left, drawing it up behind the stomach, and may render the inspection of the second portion of the duodenum difficult unless the stomach is pushed to the left, or the patient is rotated. Some of the röntgenograms I exhibit will demonstrate this condition as seen in favorable cases.

As the intestinal contents pass downward through the jejunum, they rarely meet with obstruction unless due to causes originating outside this section of the bowel. The almost unbelievable speed with which the jejunal contents pass in the normal subject, is a phenomenon which is well worth observing. As the duodenum discharges its contents into the jejunum, the peristalsis appears to gather added force to carry the chyle forward on its route through the ileum, and, as it twists and turns back and forth, now to the front and across the abdomen, and posteriorly and again, upward and downward, looping first in one direction, and then in another, one is reminded of the dipping, twisting, and turning of the scenic railway, if we may use such a comparison. The material is gathered together in a bolus, the size of the diameter of the intestine, its length about twice its width, and flocculent in appearance; this bolus is carried through the jejunum until it rests in the upper portion of the ileum, within a period which I estimate to be about five minutes for the minimum, up to twenty minutes for the maximum; after reaching the

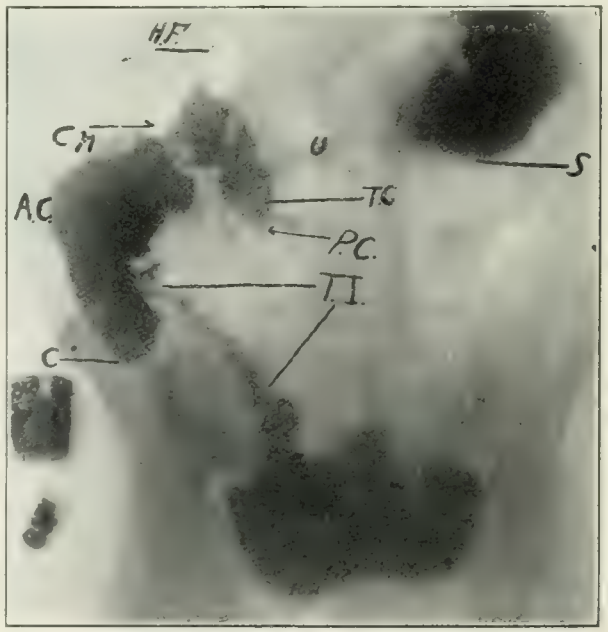


Fig. 10.—Mrs. F. Referred by Dr. J. Wallace Beveridge. *C*, cecum; *AC*, ascending colon; *HF*, hepatic flexure; *TC*, transverse colon; *TI*, terminal ileum; *S*, stomach. This röntgenogram was taken six hours after the administration of a bismuth meal. A constriction occurs on the ascending colon at the point of greatest traction on the mesocolon. Peristalsis is initiated in the right transverse colon, at the point marked *PC*, which is the location of a static angulation. See Fig. 10.

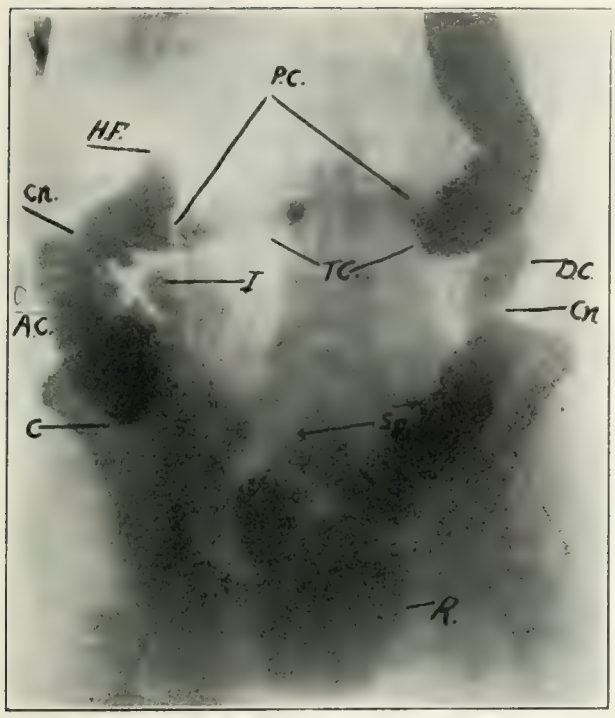


FIG. 11.—Same case as FIG. 10. This follows the administration of an enema. It will be observed that the enema has passed to the cecum distending it, and entered the ileum through a patulous ileocecal valve. The peristaltic wave has been started at the same point that it did following the administration of the meal, and has progressed to the left transverse colon. An analysis of these two plates demonstrates the influence that a simple easily corrected deformity of the colon has on its function. During the examination under the röntgenoscope the peristalsis is also observed to start at the constriction on the ascending colon.

ileum, it masses together in more solid form, lying principally in the left and lower portion of the abdomen. The progress through the ileum varies exceedingly, as the mass apparently is lying at times for hours high up in its coils, or at other times rapidly descending to the lowermost section, going upward to the cecum. If the patient has been taking laxatives, cathartics, or oils, the speed is greatly increased, and the flocculent appearance observed in the jejunum, may continue almost to the terminal ileum.

As the lowermost coils of the ileum in the normal subject lie below the ileocecal valve, there is a tendency for that which passes upward in the terminal ileum to mass together, so that we may have, even where no marked stasis occurs, columnlike masses of bismuth passing from below into the cecum.

Two forces oppose the advances of the contents of the ileum; one is gravity, and the other is backward pressure, the result of obstruction within the ileum itself or the ascending colon; if the patient is in the erect position, we have a column the length of which may be approximately five to fifteen cm. in the ileum, and then the full length of the ascending colon, which varies greatly. The variability in length of the ascending arm of the ileum is determined by the height of the cecum above the pelvic floor, and the position of the lowermost coil of the ileum. Other factors may modify this variation also, such as adhesions, retracted mesentery, etc. The terminal ileum may ascend almost to the hepatic flexure before entering the ileocecal valve; this occurrence is always the result of adhesions. The cecum may lie in the pelvis, and the ileum descends directly into it. In the last type gravity does not play a part, but backward pressure from the distended colon may maintain an iliac stasis. The obstructions that occur here consist of the simple mechanical type, the result of a contracted iliac mesentery; and the simple mechanical type combined with organic changes within the wall of the ileum, frequently complicated by a twisted ileum; and a third type, in which adhesions and other organic changes have occurred, such as a tightly bound appendix which results in connective tissue formation and contraction, constricting the ileum.

When examining the terminal ileum with the fluoroscope in the horizontal position, peristalsis of the terminal ileum can be observed in the patient, and will frequently lead us to believe that there is no iliac kink or other obstruction; gravity has been overcome, and nature appears to have its way. The iliac contents will pour through the ileocecal valve so rapidly in this position that so short a period as one hour may empty an ileum which would not clear itself, when the patient is erect, under five hours.

In the cases examined in the vertical position, the greatest difficulty is experienced in inspecting the terminal ileum, because of the influence of gravity, which may prohibit the ascent of the column of the

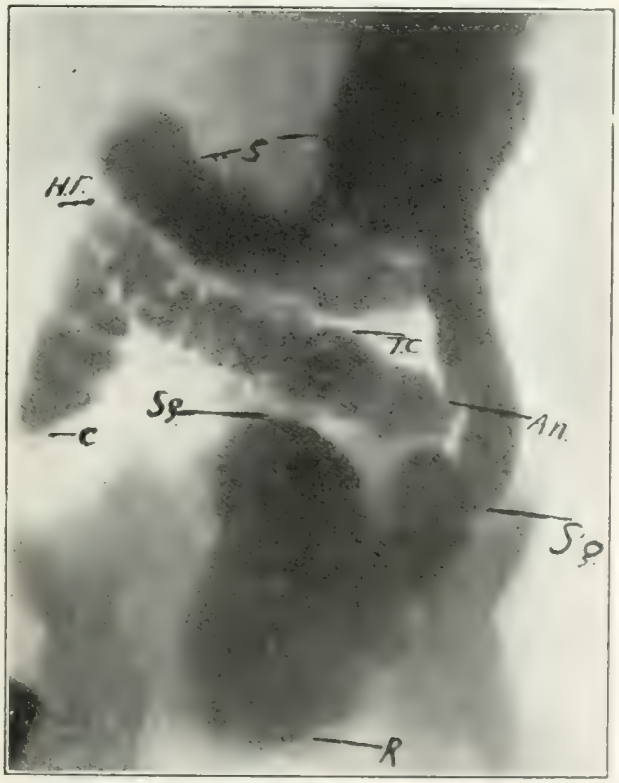


FIG. 12.—Miss H. R. [illegible] H.F., hepatic flexure, [illegible] moid. This röntgenogram follows the administration of a meal and enema. The hepatic angle is [illegible] when the patient is erect. [illegible] horizontal position and the two limbs of the hepatic angle have become separated, but while this has occurred, [illegible] produced in the left transverse colon, so neutralizing the benefit of the horizontal position. The patient suffered from severe constipation. Another angle occurs in the sigmoid at the [illegible] is not visible because of [illegible]

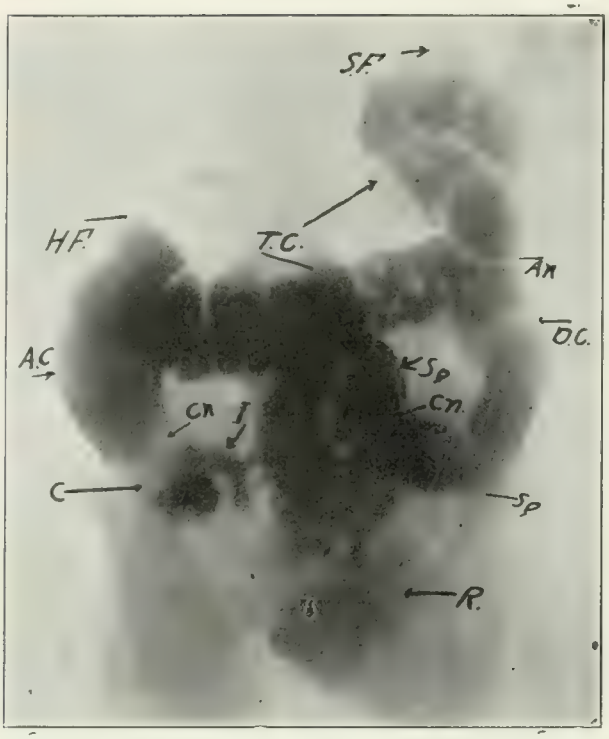


Fig. 13.—Mr. H. Referred by Dr. G. M. Manning. *I*, ileum; *C*, cecum; *AC*, ascending colon; *TC*, transverse colon; *Cn*, constriction; *HF*, hepatic flexure; *DC*, descending colon; *Sg*, sigmoid; *An*, angulation; *SF*, splenic flexure; *R*, rectum. This was taken following the administration of an enema. The enema has passed to the cecum and through the ileocecal valve. Just above the cecum there is a constriction, due to the formation of a band. A static angulation occurs in the left transverse colon. There is a constriction in the sigmoid that is the typical obstruction which results from the formation of a mesenteric band at the junction of the iliac and pelvic sigmoid.

bismuth sufficiently to outline the point we wish to inspect; also the inward rotation and descent of the cecum covers the ileum.

A thorough inspection and palpation of the ileum must therefore be made in a position which most favors a maintenance of the continuity of the bismuth column, permitting relaxation of the abdominal wall and the rolling of the cecum upward. To demonstrate a mechanical kink or organic obstruction, after we have conditions arranged which enable us to see and manipulate the parts, becomes a matter of recognizing that which is before us, and proving its existence to our own satisfaction.

When we realize that even on the operating table with the abdomen open and the ileum before us, the mechanical iliac kink may be unrecognizable, unless special methods are pursued to prove its presence, we can see the difficulties that surround the diagnosis of iliac obstruction of this character without the aid of the x ray.

I recently was present at an operation for gastroenterostomy, and when the cecum and ileum were inspected and were brought up to the incision, while standing at the head of the patient, I recognized an iliac kink from the peculiar arching of the terminal ileum that occurs in this condition within the last few inches of the part. In this case, when the patient and ileum were turned upward, the under side of the iliac mesentery was found to have two bands extending upward beneath the mesentery and contracting it. My prompt recognition of this kink, I am satisfied, was due to my experience gained in inspecting so many cases under the fluoroscope.

Passing to the colon, we shall find a structure that is worthy of all the study that any one interested cares to apply to it. Some time ago I wrote a paper on angulations of the colon. In this I have described five points at which they commonly occur, as the result of contracted mesocolon and mesenteric bands or peritoneal bands. In speaking of the mesenteric bands, commonly called peritoneal bands, I refer to newly formed supports of the colon which are usually found on the outer side of the ascending and descending colon, where they assume the duties of a suspensory ligament. I regard them as having primarily originated from the mesocolon, and therefore designate them as mesenteric bands. In order that I may explain the reason for certain colonic deformities, I wish to present them in picture form.

I desire to digress here enough to give a theory as to a process of evolutionary development that takes place in the formation of these bands. If we observe the development of the nasal sinuses in the growing child, it will be seen that Nature is here building up and modifying the structures to meet the demands that come upon its parts, as the result of the performance of their functions and the maintenance of strength and symmetry. During the development of these cavities, septa are produced which may consist of thin membranes or cartilages, and even bone. These must be regarded as having

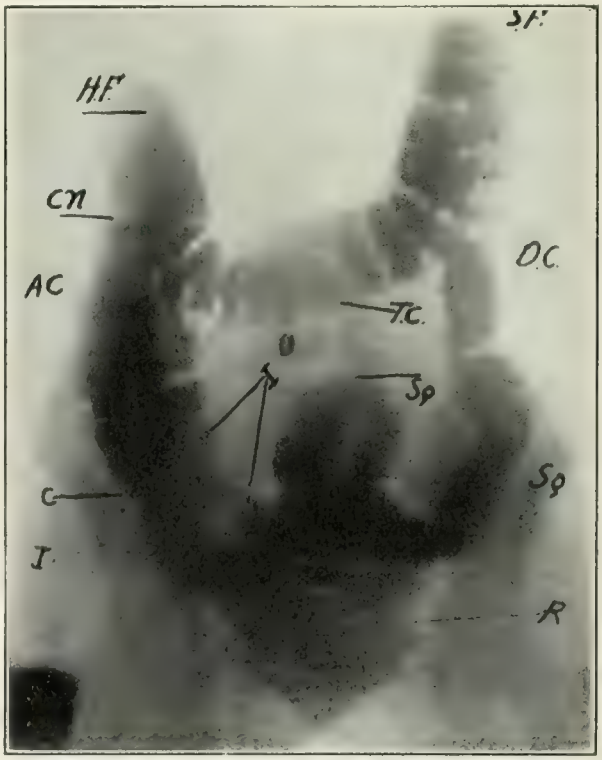


Fig. 14.—Miss W. Referred by Dr. E. L. Kellogg. *I*, ileum; *C*, cecum; *AC*, ascending colon; *Cn*, constriction; *HF*, hepatic flexure; *TC*, transverse colon; *SF*, splenic flexure; *DC*, descending colon; *Sg*, sigmoid; *R*, rectum. The enema has passed through a patulous ileocecal valve. There is a constriction on the ascending colon just below the hepatic flexure. This is a point of greatest traction on the mesocolon when the patient is erect. The splenic angle is very acute. This resulted in a very prolonged stasis in the transverse colon. The rectum is dilated and the sigmoid is redundant.

remained to distribute the forces to which the various parts are subjected. The developmental process that produces them, if compared with that which occurs in the formation of the supports of the suspended colon, may explain to us how they are formed in the abdomen. Originally the downward pull of a loaded bowel is applied to the mesentery on its outer side. This results in round celled infiltration and connective tissue formation, with the resulting contraction. As this process goes on, its tendency to build up on the outer aspect of the supporting part continues, and the strain on the inner section lessens, and it may entirely disappear. As a result, we have the formation of a separate band, entirely clear of its original attachment to the mesocolon.

There is a law in physics that the resistance of a tube, bent at an angle to a liquid or gas passing through it, is proportionate to the degree of this angle; if the fluid is pumped through a tube which is bent at right angles, twice the power is required to carry a given amount in a definite time as through a straight tube; if the angle is rendered more acute, additional power must be provided to maintain an equal flow. Applying this principle to the onward propulsion of the contents of the bowel, we have a demonstration of what can occur to maintain the element of stasis. In addition to this mechanical obstruction, the distortion of the wall of the intestine results in interference of its motor power by inhibiting the muscle fibres; those on the inner side of the curve atrophy from inability to contract, while those on the convex wall are stretched and attenuated.

I have described five points in the colon where the contracted mesentery and mesenteric bands are commonly found; they occasionally occur at other points. That these produce angulations of the colon, can be proved by inspection of a patient having them in either the erect or horizontal position, by aid of the fluoroscope and röntgenograph. I have also described six varieties of angulations occurring in the transverse colon; it is not the object of this paper to go into the details of these classes: therefore they will be omitted.

A contracted mesentery usually results in the colonic support becoming a fixed point, or a point of limited mobility. If ptosis of the colon above or below this fixation point occurs, an angle is formed, the apex of which is at the point of most complete fixation; the section of the bowel below drags downward, the pull depending on the weight of the bowel and contents. The portion of the colon above the fixation point sags downward and overlies the lower arm of the angle; this results in delay of the colonic contents, which usually persists throughout the day, and they may move forward only at night, if the bowel has not undergone dilatation or formed a permanent angle. When the patient lies down at night, the simple angulations are all corrected, because of the upward drift of the colon and the withdrawal of the tension on the supporting ligaments and mesentery. The hepatic flexure and splenic flexure may be points of fixation, and, as the two arms of each angle drag downward, the flexure, which normally should consist of a curve, becomes acute, a condition which is more prone to occur from traction of the pleurocolic fold. The hepatic flexure is frequently displaced downward; when this occurs, the fixation point is usually on the ascending colon, a short distance below the hepatic flexure.

Stasis in the cecum is very frequent and the result of several mechanical factors. The first is angulation of the ascending colon or hepatic flexure; the second is ptosis. The cecum is frequently found in the cul-de-sac, being forced by the ascending colon to the left of the median line. The third is the action of gravity on the colonic contents. With all these factors combining, we have established sufficient traction to result in evolutionary

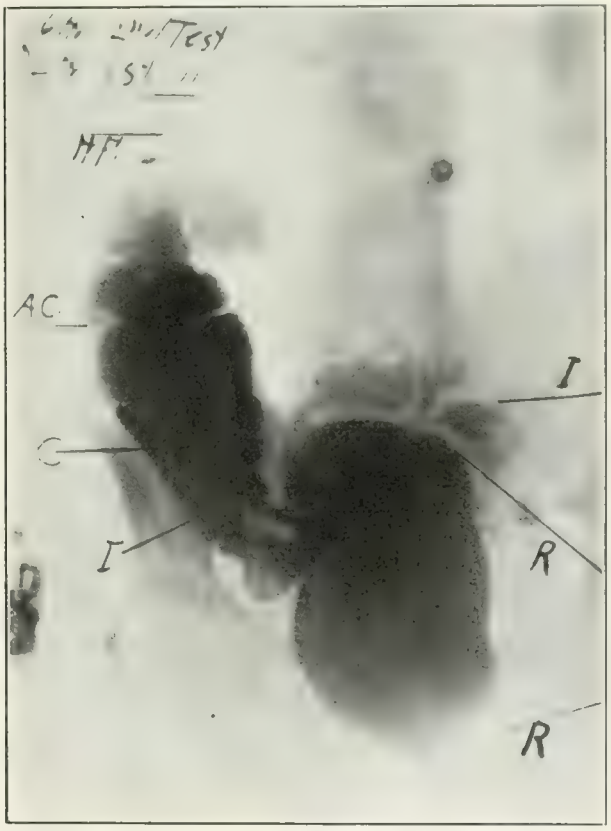


FIG. 15.—Same case as Fig. 5. *I* ileum, *AC* ascending colon, *R*, rectum. This roentgenogram is taken seventy-two hours after the administration of the first test meal, the residue of which is now in the rectum, and six hours after the administration of the second test meal, which is distributed throughout the lower ileum, cecum, and ascending colon. It illustrates rectal stasis, and how a distended rectum may be so large as to protect some distance up into the abdomen, displacing other structures by position pressure. It could be palpated through the anterior abdominal wall.

development of accessory supporting ligaments and contracted mesocolon.

A common location for obstructive conditions is in the sigmoid; these are the result of contracted mesosigmoid, mesenteric bands, and the various pelvic inflammations. Several difficulties surround the x ray inspection of the sigmoid, especially that portion occupying the pelvis, the bony walls of which prevent shifting the sigmoid about sufficiently to determine the adhesions. Stereoscopic plates are of aid in viewing this region, but the most efficient procedure is the manipulation of the lower abdominal contents with the patient in the knee-chest, and Trendelenburg position. A very common location of obstruction of the sigmoid is at the level of the

pelvic brim. Acute angulations occur here because of the short mesentery which binds down the sigmoid, where it passes over the brim of the pelvis. This angulation is very easily demonstrated by the administration of the enema. The amount of stasis it produces can be determined only by repeated examinations during the progress of an opaque meal. This angle can be accentuated by a distended rectum, which forces the pelvic sigmoid upward and presses the apex of the angle to the left, squeezing it against the bony wall. Distention of the rectum by an enema may establish this obstruction primarily, as has been witnessed by myself.

40 East Forty-first Street.

CHRONIC INTESTINAL STASIS.*

Stasis medically considered.

By William Van Valzah Hayes, M. D.,
New York.

To what degree disturbances of the alimentary tract are responsible for the ills that flesh is heir to, is an interesting and important question. There are those who believe that practically all chronic illness has its origin in the intestine, that there exist the factors which slowly and insidiously sap the life of the individual or give rise to other conditions which quickly bring him to a calamitous end. That one whose life has been spent chiefly in doing surgical work should advance such a claim is startling; yet we would be foolish, indeed, did we not carefully weigh every particle of evidence advanced by Sir W. Arbuthnot Lane. His views are misunderstood and disregarded by many; but that the conditions, as described by him, exist is readily confirmed by any well trained physician having the opportunity to study his cases thoroughly by modern methods and to follow those requiring surgical relief to the operating room. It is the belief of the writer that after duly weighing Lane's work in this line, the most open minded profession in the world will agree that his contribution to medicine is of exceeding great value and accord to him all honor and praise for his service

"By chronic intestinal stasis," says Lane, "I mean that the passage of the contents of the intestinal canal is delayed sufficiently long to result in the production, in the small intestine especially, of an excess of toxic material, and in the absorption into the circulation of a greater quantity of poisonous products than the organs which convert and excrete them are able to deal with."[1]

This stagnation of the intestinal current, resulting in toxemia and degenerative conditions, may be brought about in different ways; either with or without the formation of the evolutionary bands and membranes, which are fully described in the literature of the subject. Ordinarily, the bands do exist and result, according to Lane, in the delay of the contents of the small intestine:

The delay of the contents of the small intestine, and also of the duodenum and stomach, results in their infection by organisms and in the development of chemical changes in the stagnating material. These changes, in addition to the mechanical effects already described, bring about an engorgement of the mucous membrane of the first part of the duodenum, which may end in ulceration and perforation; or a similar change in the mucous membrane about the pylorus and along the lesser curvature of the stomach, which may terminate in ulceration, perforation, and later in cancer; or an infection of the ducts of the pancreas, which may produce degenerative inflammatory changes and their consequences.

The chief symptoms and signs of intestinal stasis as given by Lane may be summarized as follows:

TOXIC.

1.—Loss of fat.
2.—Wasting of the voluntary and involuntary muscles.
3.—Degenerative changes in the skin associated with alteration in its texture and color.
4.—Subnormal temperature, especially in extremities.
5.—Mental condition is one of apathy, stupidity, or misery. This may become exaggerated into a state of melancholia, or even apparent imbecility. Headache is a very frequent feature, and may render the patient's life unendurable. Irritability.
6.—"Rheumatic" aches and pains in the muscles and joints, often in the skin.
7.—The thyroid gland wastes.
8.—Blood pressure may be raised or depressed.
9.—Degenerative changes in breasts in the upper and outer zone. Cancer readily develops in this condition of the breast.
10.—The several organs prolapse and alter in shape, partly because of the loss of fat, partly because of the wasting of muscle fibre.
11.—Dyspnea on exertion.
12.—Degenerative changes in heart muscles.
13.—The kidneys are liable to become affected by the abnormal strain thrown on them.
14.—The hair of the head loses its color early in life and tends to fall out.
15.—The pancreas becomes infected directly by extension from the stagnating contents of the duodenum. This results in chronic induration, inflammation, and, finally, cancer of this organ.
16.—In similar manner the ducts of the liver and gallbladder are infected, and gallstones, cholecystitis, and cancer may be produced, besides many acute or chronic diseases of the liver.
17.—Those diseases of the eye which are degenerative in origin are produced by and vary with the degree of autointoxication.

OBVIOUS INDIRECT CHANGES.

a.—Infection of the gums, causing the condition commonly described as pyorrhœa alveolaris.
b.—Tuberculous infection, when not produced by direct inoculation.
c.—Rheumatoid arthritis. This, like tubercle, cannot develop except in the presence of defective drainage of the gastrointestinal tract.
d.—Infection of the genitourinary tract, either directly or indirectly, through the blood stream, by organisms other than tubercle, producing nephritis, cystitis, pyelitis, endometritis, salpingitis, etc.
e.—Development of changes in the thyroid gland, whether as adenomatous tumors, general enlargement of the thyroid, or exophthalmic goitre.
f.—Still's disease.
g.—Infections of the skin of a pustular nature.
h.—Infection of the large intestine by organisms which produce the several varieties of mucous and ulcerative colitis.
i.—Ulcerative endocarditis.

In the writer's cases the marked symptoms have been weakness, loss of weight, headache, nervous irritability and emotional states, lack of concentration, drowsiness, insomnia, poor circulation, palpitation, with cold hands and feet, constipation, soreness of joints; and in those cases with gastric complications—bad taste, belching, regurgitation of food and acid fluid, erosion of the teeth, pain between shoulder blades, nausea

*Read before the Medical Association of the Greater City of New York, December 15, 1913.

[1] An address on Chronic Intestinal Stasis, by Sir W. Arbuthnot Lane, *British Medical Journal*, p. 1035, November 1, 1913.

and vomiting. Ulcer near the pylorus has been a rather frequent complication. The marked physical signs have been pallor with or without anemia, a sallow color or slight pigmentation of the skin, cold moist hands and feet, and the following abdominal signs, which are very constantly present in these cases and taken together, with the toxic symptoms make the diagnosis exceedingly simple:

a. *Dilated duodenum* (D. D.), shown by a marked tympanites in the area behind the right rectus muscle to the right of or posterior to the pylorus and lying between the liver above and the transverse colon below. The dilated duodenum is readily marked out by the employment of *percussion with pressure*. Owing to the kinking of the duodenojejunal junction the duodenum is found to be distended with gas, often two or three fingers in diameter. This duodenal inflation is frequently associated with gastric stagnation or distention.

b. *Pressure paradox* (P. P.). In cases showing a dilated duodenum, pressure is made backward and upward for about thirty seconds by the hand placed just below the umbilicus, the patient being in a semirecumbent or reclining position. It might be thought that this would increase the amount of gas present in the duodenum; on the contrary, in the type of case we are considering it will usually results in the undoing of the duodenojejunal kink, permitting the duodenum to empty itself, as shown by a relatively dull percussion note or marked diminution in the size of the tympanitic area. At the same time it is often possible to hear and feel the gas escape as it rushes into the jejunum. It might be thought that lying down would be sufficient to undo the duodenojejunal kink, but frequently this does not follow.

c. *Inflated ileum* (I. I.), shown by a marked tympanitic note (sometimes a high pitched note—quite characteristic of gas under pressure in a small tube) to the left of and below the cecum.

d. *Corded colon* (C. C.). Frequently the left iliac colon is felt as a ropelike body directly beneath the abdominal wall. This is apparently due to spasm of the portion of bowel just above the sigmoid flexure and is commonly found in the stasis cases. To what degree this condition should be considered abnormal is debatable.

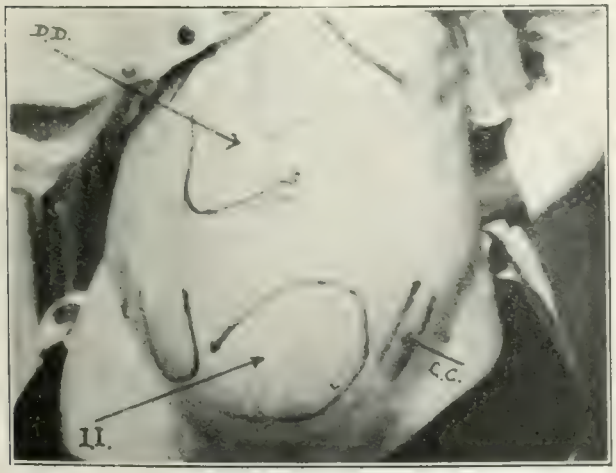


Fig. 2.—D.D., dilated duodenum. I.I. inflated ileum. C.C. corded colon.



Fig. 3.—Method of obtaining "pressure paradox."

Lane calls attention to the long straight sigmoid present in many cases, and Schlesinger[2] states that in the toxic type of stasis cases, the straight sigmoid is readily palpated.

How important the easy determination of the chronically dilated duodenum is, may be inferred from the statement of Alfred C. Jordan, who has done such invaluable x ray work in conjunction with Lane. He says, "So constant is the occurrence of duodenal distention in the subjects of intestinal stasis, that I have come to regard it as a trustworthy indication, equally valuable whether positive or negative. That is to say, the discovery of a static duodenum is a certain indication that other evidence of intestinal stasis will be found during the subsequent examinations of the ileum and the large intestine. Conversely, the discovery of a normal duodenum is a sign that intestinal stasis is not likely to be present, though there may be other intestinal disorders, not due to stasis, which may be revealed at the later examinations."[3]

TREATMENT

Diet. This should be suited to the needs of the individual; being adapted to the state of the gastric and intestinal digestion. A bland diet where there is hyperacidity, etc. In general it should be gently laxative, without being coarse or irritating, and should not contain a protein excess or a large percentage of readily fermenting elements.

Exercise is of great value in these cases; golf, rowing, and such calisthenic or gymnastic movements as will increase the strength of the abdominal wall and quicken the blood flow and peristaltic activity of the gastrointestinal tract.

[illegible] "Some Aspects of Intestinal Stasis," [illegible] at the London Medical Society [illegible]

[illegible] Alfred C. Jordan, [illegible] Medical Society, [illegible] February

Correct poise or carriage must be insisted upon; the patient must learn to stand and sit with the chest thrown forward, chin and shoulders back, and abdomen drawn upward; thus increasing the size of the upper abdomen and diminishing the tendency to ptosis. A suitable belt, corset, or spring support is indispensable in most cases and should be carefully adjusted below the umbilicus to give pressure upward and backward; the aim being to prevent as far as possible duodenal and iliac delay, and to equalize and increase somewhat the intra-abdominal pressure.

Medication. Bland laxatives are the chief medicines to be used, with liquid paraffin or Russian mineral oil of superior quality, occupying first place in usefulness. This has the property of rendering the stools more soft and of hastening the movement of the food through the small and large intestine. It is not always sufficient of itself, however, and must be assisted at times by agaragar, phenolphthaleine, compound licorice powder, a saline cathartic, or cascara. Colocynth, podophyllin, and similar drugs should not be used because of their irritant action. An occasional dose of calomel, one quarter to one grain, followed by a bitter mineral water, may be necessary.

Surgery, the writer believes, should not be thought of in the great majority of instances; but is indicated in the marked cases failing to respond to persistent competent medical treatment, and in those conditions where there is decided mechanical interference with the alimentary current, or where secondary complications demand it, always with the proviso that the patient has sufficient resistance to render success probable.

The following cases, studied conjointly by Doctor Quimby, Doctor Bainbridge, and myself, may prove of interest as illustrating certain types of stasis.

Case I. C. C., male, aged forty-nine years, referred by Dr. Henry Blodget, January 18, 1913.

Previous history. Painful indigestion about 25 years ago, typhoid fever 20 years ago. Had been under heavy nerve strain for about 5 years. Habits, temperate.

Present trouble. Three years ago an attack of nausea and vomiting lasting a week or two. Similar attacks at times since, following nerve strain or indiscreet eating. The present attack began seven weeks ago following error in diet. The attack was characterized by constipation, nausea, and vomiting, the latter coming at intervals, sometimes twice a day and sometimes with two or three days' intermission. Vomit was yellowish brown. Pain apt to come four or five hours after eating. Lost 20 pounds in weight in last two months (present weight 138½ pounds). Diagnosis of pyloric carcinoma made in a neighboring city by an able physician.

Physical examination. Depressed, and losing desire to live. No evidence of any trouble except with digestive system. The tongue heavily coated, stomach and bowels distended with gas; there was slight resistance to the left of the pylorus. Ewald Boas test breakfast gave the following: No mucus, free hydrochloric acid 24, total acidity 52, pepsin normal, starch digestion good, and a doubtful trace of blood. Test for duration of digestion revealed marked stagnation of the gastric contents, which were highly acid. Blood was 62 per cent. with anemic changes. Urine showed an excess of phosphates, no indican. No blood was found in the feces.

Diagnosis. X ray examination by Doctor Quimby confirmed the dianosis of marked obstruction of the pylorus and operation was promptly decided upon; as it was manifest the patient could not live long unless this were done.

The operation was performed by Doctor Bainbridge. There was found to be a small indurated mass in the duodenum just beyond the pylorus. There were present large glands and indurated tissue running up behind the liver, the nature of which could not be told definitely, but was believed to be inflammatory from perforating ulcer. Posterior gastroenterostemy was performed, and Lane kink corrected. The patient made a satisfactory recovery, wore a supporting belt, and took liquid paraffin regularly, also an iron tonic and such other medicines as were indicated.

A test breakfast somewhat less than three months after the operation showed gastric acidity normal, with slight delay in the emptying of the stomach. Five months after the operation the acidity of the stomach had fallen somewhat below normal. Hemoglobin increased to 100 per cent. Six months after operation, the patient expressed himself as feeling better than for years. November 15, 1913, ten months after operation, his weight was 164 pounds. The patient is slightly inclined to constipation, had occasional discomfort in ascending colon; was feeling "bully" and looked the picture of health. December 15, 1913, gas in stomach; the duodenum was dilated and there was pressure paradox; systolic blood pressure, 115; weight in clothing, 166½ pounds; patient looked and felt extremely well.

Case II. R. C., male, aged forty years, January 14, 1913. *Previous history.* Typhoid at nine years of age. Frequent attacks of tonsillitis. Nervous temperament. Formerly took alcohol to excess occasionally, little for the past six years. Very moderate in the use of tobacco and coffee. *Present trouble* began three years ago. Had attacks of intermission of heart action with dyspnea and palpitation at times. Cold feet and hands. Frontal headache, sometimes unilateral. Occasionally would awake at night with headache, nausea, and vomiting. Bowels formerly regular, but of late had taken cascara nearly every night. Difficulty in getting to sleep, then slept well. Had lost 17 pounds in the past year and a half.

Physical examination. No evidence of organic trouble with heart or serious disturbance of the nervous system. There was no gastric tenderness. The lower descending colon was corded and slightly tender. Functional examination of the stomach contents after Ewald Boas test breakfast gave the following: Total contents 105 c. c., mucus none, appearance fine, free hydrochloric acid 34, total acidity 78, starch digestion good, pepsin normal, and a doubtful trace of blood. Duration test showed very slight prolongation of digestion. There was no blood in the stool. Thread test negative. The urine showed excess of indican. Hemoglobin 80 per cent. with slight anemic changes.

X ray. Doctor Quimby made diagnosis of small ulcer near pylorus with constricting band on the ascending colon; dilated terminal ileum and colon.

At operation, February 26, 1913, there was found a well developed Lane kink, which was corrected. Bands were found causing undue angulation at the hepatic flexure; there was also found a Lane band at the duodenojejunal junction; these were severed. The pylorus was found to be moderately narrowed and this was corrected by linear incision sewn transversely.

The patient gradually improved after his operation. He was given careful diet, mineral oil, cascara and alkalies for a time, and a supporting belt. By August of this year, seven months after operation, he was feeling well and taking no medicine. There is still a slight tendency to stagnation in the

ascending colon and patient is accustomed to treat this by massage. There is some duodenal dilatation, and corded colon is palpable. On November 11 the patient writes: "I feel splendidly and can go all day long without tiring as I did; in fact, I am a well man except for my intermittent heart action." He has gained about twenty pounds since the operation.

Case III. W. C., female, aged fifty-three years, married, January 30, 1913. *Previous history.* For much of her life this patient was a great sufferer. She had had 7 or 8 operations, the last two being laparotomies. The first laparotomy was performed 12 years ago when, according to the patient's statement, an operation was performed for gallstones but none were found. At this time, through an incision in the back the right kidney was fastened in place. Five years ago the second laparatomy was performed, the ovaries and appendix being removed. For twelve years there had been marked digestive symptoms with regurgitation of food which gave a burning sensation in the throat. For the past three years had had repeated attacks of intense pain. About once in six weeks these symptoms had been so severe that a hypodermic had been required. For the past six weeks the patient had taken nothing but Benger's food, the symptoms growing steadily worse. There had been marked constipation. Almost constant nausea, but no vomiting except during attacks of pain, when the vomiting was continuous for hours and was at first yellow and then black.

Physical examination. Patient was pale and had an anxious drawn expression. Physical examination negative, but for a markedly distended abdomen with tenderness in the region of the pylorus and gallbladder, across the middle portion of the transverse colon and in both iliac regions. X ray examination was made by Doctor Quimby, who made a diagnosis of pyloric adhesions probably involving first portion of the duodenum, adhesion of the terminal ileum, and redundant sigmoid.

Inasmuch as this patient had given no satisfactory response to painstaking medical care and in consideration of the fact that her life was robbed of all enjoyment through her constant pain and distress, it was thought best that an operation be promptly performed. This was done by Doctor Bainbridge, in March, 1913. The omentum adherent to the gallbladder and to the abdominal wall was freed. Adhesions between pylorus, beginning portion of the duodenum and gallbladder and liver, were separated. The cecum was shortened and fastened in proper position. The uterus was found low and brought into position through approximation of the round ligaments anteriorly. This patient made a slow but satisfactory recovery with no really bad symptoms, except once when her bowels became too constipated.

She has taken Russian mineral oil, sedatives, tonics, and various other remedies to meet special indications. The diet, at first very bland, has been increased until the patient can eat almost anything. The patient still suffers from headache, and physical examination reveals a slight tendency to constipation in cecum. There remains also a slight tendency to dilatation of the duodenum. There can be no question, however, that her general condition is marvelously improved. To quote her own words, "it is the most wonderful cure I have ever heard of."

Case IV. E. S., aged fifty-five years, single, February 15, 1913. *Previous history.* Frequent attacks of grippe. Burning sensation at times in the region of the appendix. Moderate constipation for years. This had been obstinate for the past 14 months. *Present trouble.* Patient was nervous and depressed and at times hysterical; was drowsy at times; appetite good. There was no nausea or vomiting. Sleep had been somewhat broken for several years. For a time would awaken an hour or two after retiring and remain awake several hours. Considerable backache, low down. Occasionally spasms of muscles of face and left hand. Feet dragged a little at times. A year ago began to have swelling of ankles, hands, and head. Spent a week in bed, taking castor oil and oil enemata with prompt subsidence of the swelling. Rested for a time and then on resuming duties the swelling of the limbs returned and persisted. Was unable to concentrate satisfactorily and was very easily fatigued. Headache when overtired.

Physical examination. Fairly well nourished, pale. No evidence of organic nervous disease. Heart of normal size and regular; first sound lacked vigor; lungs clear; moderate tenderness over solar plexus and also at a point slightly below to the right of the navel. Gas present in excessive amount in the stomach, ileum, and colon. The left iliocolon was corded. Examination of the stomach contents gave normal figures. Gastric digestion slightly prolonged. Blood, normal. Urine low specific gravity. Feces normal, but for putrefactive odor and excessive mucus.

The patient was put under treatment and his diet regulated with special pains to avoid excessive proteid intake. Russian mineral oil was given, also ichthyol at bedtime, but without very satisfactory results. March 15, 1913, there was evidence still of the dilated duodenum, iliac delay, and cording of the colon. At this time the x ray pictures were taken and Doctor Quimby reported iliac stasis and healed ulcer of the lesser curvature of the stomach. May 19, 1913, dilated duodenum, inflated ileum, and corded colon were still in evidence. There has been soreness in the hip joints for a few days, and some tendency to emotional stress. The patient decided to have an operation, which was performed June 3d, by Doctor Bainbridge.

The appendix was found to be adherent to the mesentery of the ileum in such a way as to produce a kink when the mobile cecum rotated downward and forward. The gallbladder was found to be attached to the omentum and also adherent posteriorly. Some bands were found also, making a kink in the lower part of the sigmoid. The conditions were corrected, and the patient recovered from his operation and gradually gained in weight and strength. July 3d, weight was 132.75 pounds. Patient feels well but for a little nausea and headache; still looks pale. Blood is ninety-four per cent., the red cells normal. July 28th he reported that in some ways he was better than for a week or two. Slight edema of the limbs still persists; weight 147.25 pounds. The patient has been taking paraffin oil regularly and wearing a supporting belt. Examination of the urine shows urea output of 214 grains. No albumin, sugar nor indican was found, and one hyaline cast was seen. November 3, 1913, patient was resting in the country and doing very well. There is still some frontal and occipital headache and still some edema of the legs. The weight is 160 pounds, the most he ever weighed. On December 8, 1913, his weight was 161 pounds and his condition was about the same as in November.

Case V. E. H., female, aged forty-six years, single, January 27, 1913. Case examined and referred by Dr. J. D. Nisbet. *Previous history.* Double pneumonia 17 years ago. Family tendency to headaches. Ulcer of the stomach with vomiting of black blood twelve years ago. Had had attacks of headache with nausea, vomiting, and constipation lasting from one half hour to 16 hours asso-

coated with photophobia and acidity of the stomach. Felt well in the intervals. Was subject to hay fever.

Physical examination. Arteries felt hard; systolic blood pressure 160. Tender over stomach. There was gastroenteroptosis and movable right kidney. Blood 86 per cent. with very slight anemic changes. Gastric analysis gave a moderate amount of mucus, free hydrochloric acid 25, total acidity 65, starch digestion good, no blood. There was no blood in the stool; urine normal. X ray examination showed iliac narrowing and stagnation in stomach.

February 17th, the patient was placed on sterile diet and February 19th an operation was performed by Doctor Bainbridge, Doctor Gwathmey acting as anesthetist, and Mr. Schlesinger in consultation. The pyloric ring was found to be contracted, and around it were a few adhesions and a slight inflammatory enlargement of the glands. There was a double Lane kink with marked thickening of the mesoileum. The duodenojejunal angle was kinked with some adhesions. These conditions were met by pyloroplasty and correction of the kinks. The patient steadily improved after this operation and was doing well when last seen in March.

Case VI. W. K., male, aged thirty-six years, married, referred by Dr. Norman Barnesby. *Previous history.* Malaria 12 years prior to coming to the office, diphtheria 4 years previously. *Habits.* Accustomed to take a small quantity of alcohol. Smoked 4 or 5 cigars daily. *Present trouble* began 4 years ago in 1907. "Canker sores" in the mouth, especially on the tongue, coming from time to time and causing much annoyance. Some mental depression and lack of ambition. One year ago the stomach was washed daily for a month and sodium bicarbonate given by mouth. This gave some temporary relief. Tongue had been coated, appetite poor. Noticed that canker sores were made worse by drinking water at meals. Bowels moved regularly.

Physical examination showed a moderately coated tongue, large amount of gas in stomach and bowels, slight tenderness in region of appendix, with pain referred to the epigastrium also. Ewald Boas test breakfast gave the following returns: Free hydrochloric 50, total acidity 80, no mucus, pepsin normal, starch digestion poor, blood present. Digestion was slightly prolonged. The patient was kept under treatment for several months without any satisfactory progress. The gastric acidity increased, free acid being 70, total acidity 105, but by this time no blood was found in the stomach contents nor in the stool.

In September, 1911, appendectomy was performed by a leading New York surgeon. A conical appendix with fecal contents and with one inch of fibrous tip was found. There was a rosette of varicose veins around the base. The patient seemed slightly better for some months after operation but in May, 1912, the acidity was still in marked excess. There was slight tenderness in the region of the pylorus and also over the site of the operation. While no blood was found at this time in the stomach contents the thread test gave a slight stain corresponding to the pyloric region. The x ray pictures (Doctor Cole) showed slight irregularity of the lesser curvature to the left of the pylorus. The patient was put to bed and fed by means of the duodenal tube for a period of nearly 4 weeks. A negative thread test was not obtained until the end of eight weeks when patient was allowed to sit up. There was slight improvement for a time, but no marked change in the gastric secretion. In November, 1912, the patient again complained of "canker sores" and sour stomach, with attacks of dizziness and depression. In December, 1912, one hour after Ewald Boas test breakfast the free acid was 90, total acidity 108. There was no blood in the stomach contents and the thread test was negative. There was marked prolongation of digestion with very high acidity in its late stages.

In January, 1913, x ray pictures (taken by Doctor Quimby) indicated adhesions at the pylorus and iliac stasis. January 7, 1913, an operation was performed by Doctor Bainbridge. A few cobweb adhesions were found at the pylorus, but no evidence of indurated ulcer. There was a Lane kink one and one half inch from the cecum and also some postoperative adhesions, in the neighborhood of the ileocecal valve. After this operation there was gradual improvement in the condition of the patient. The free acidity gradually fell from 92 to 66, and by May was approximately normal. The patient's general condition improved so that he felt well when free from constipation. He wore a supporting belt and took liquid paraffin regularly. The patient's weight increased so as to exceed his preoperative weight by ten pounds.

34 West Fiftieth Street.

ACUTE PANCREATITIS.*

By John F. Erdmann, M. D.,
New York.

From the Department of Surgery, New York Post-Graduate Hospital and Medical School.

The most interesting yet confusing feature of pancreatitis is that of the intense toxemia seen in many of the patients. This very condition is to me of most weighty importance and aid in making a diagnosis, a conclusion which I feel can be reached in the majority of the patients when seen early, provided a careful history has been taken. The literature on the subject of acute pancreatitis is fairly studded with cases, while that of the causation and the origin of the toxemia is still in a largely hypothetical state of confusion.

The types of pancreatitis may be classified tentatively as hemorrhagic, sloughing or gangrenous, and suppurative, yet the two latter varieties are really but stages of advancement of the hemorrhagic. Several authors have named an additional type, the apoplexy of the pancreas or pancreatic apoplexy.

It is conceded by practically all observers that the anatomical arrangement of the ducts of the pancreas and those of the gallbladder, with their combined entry into the duodenum, is responsible for the majority of the cases of this disease. One has but to recall the relation of the ducts of Santorini and Wirsung to the common duct, and then recall the ampulla of Vater to orient himself as to what damage a stone lodged in the ampulla of Vater or in the papillus can create by damming back the flow of bile, thereby having it (the bile) seek passages of least resistance, the pancreatic ducts, either singly or combined, thus producing the injection of bile into the pancreatic gland.

This injection of bile into the ducts was demonstrated as a distinct cause by Flexner and others years ago. Again, the arrangement of the papillas and ducts does allow of retrograde injection of duodenal contents into the pancreatic system, thereby producing the necessary irritation or trauma to cause at least experimental pancreatitis. It is also a fact that this disease is not infective in its onset, and that when the suppurative stage arrives, the infection is a secondary process. The anatomical arrangement of the ducts, and the fact that

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biliary tension by back tracking is a cause at least of experimental pancreatitis, indicates one of the surgical means of combating or curing this process, namely, cholecystostomy, thereby relieving the tension and draining away noxious agencies and infection that may be associated factors in the production of this disease.

Guleke, of Berlin (Experimental Pancreas Affections, *Archiv für klinische Chirurgie*), has been studying on a large number of dogs the affections of the pancreas induced by injections of bile, blood, and oil in the outlet of the pancreas, also by ligation of its bloodvessels. He states that the disturbances resemble very closely those of acute pancreatitis in man.

The causes of death in acute cases have been summarized by Doberauer. (*Beiträge zur klinische Chirurgie*, xlviii, 2), in an analysis of six acute cases and thirty-five experiments on dogs, as due to a toxin; and Guleke demonstrates, in his experiments cited above, that in his acute necrosis cases death is due to an intoxication with trypsin. These arguments of Guleke and Doberauer are taken from my thesis entitled, Acute Pancreatitis, with a Report of Five Cases, published in the *American Journal of Obstetrics*, liv, 6, 1906. It is interesting to note that in the seven years elapsing since publishing this thesis, nothing of much more definite significance in the cause of sudden death has been projected. Speese, Sailer and Torry (*Transactions of the Association of American Physicians*, xxvi, p. 446, 1911), in an article entitled Further Experiments in the Toxemia of Experimental Acute Pancreatitis, acknowledge the arguments of toxemia as advanced by Guleke, Von Bergman, and Doberauer, but consider the work of these investigators not conclusive.

On the basis of their findings, the authors feel justified in saying that at the present time, there is no reason to believe that the toxemia of acute pancreatitis is caused by any absorption of the external secretion of the pancreas. Although the experiments are still incomplete, it appears justifiable to conclude that in the course of acute pancreatitis, the blood content in globulin is greatly increased and that either the globulin itself, or substances adherent to it, constitute the toxic element causing death.

Schittenhelm (Biologische Studien, etc., *Zeitschrift für Immunitätsforschung*, xiv, p. 609, 1912), concludes that the toxic properties of histon and of the protamins may possibly play a part in the pancreatic necrosis, etc. Lattes, in an elaborate communication (Ueber Pankreas Vergiftung, *Virchow's Archiv*, ccxi, p. 1, 1913), makes the following statements:

> The escape of pancreatic juice into the abdominal cavity after a lesion of the duct of Wirsung, or by injection of pure pancreatic juice, the proteolytic effect of which upon the albuminous substances of the body is very slowly manifested, does not give rise to a general intoxication, the local effect being limited to fat tissue necrosis, which in no way interferes with the health of the animal.
>
> The escape of pancreatic juice, the proteolytic effect of which is increased and accelerated by the presence of enterokinase, although not a fat splitting kinase, leads promptly to death, with characteristic symptoms and pathological anatomical findings.
>
> Enterokinase, when injected alone, is entirely devoid of effect; accordingly the fatal action is dependent upon the increase of the proteolytic power through enterokinase, and is therefore related to the increased rapidity of the proteolysis.

Maragliano (Le cause della morte per necrose pancreatica, *Policlinico*, February, 1912), believes as a result of his experiments that the cause of death is poisoning, the poisons, however, not being derived from saponifications, from ferments, or from autolytic products of the pancreas, but taking their origin from a combination of the products of the autolysis of the organ with the fats of the body.

Polya (Ueber die Pathogenese der akuten Pankreaserkrankung, *Mitteilungen aus den Grensgebieten der Medizin und Chirurgie*, xxiv, 1, 1912), carried on experiments with the following conclusions: "The injection of intestinal contents, more particularly duodenal contents, led to acute pancreatic necrosis and hemorrhage with fat tissue necrosis or, in other cases, to chronic interstitial changes of the pancreas. Infected bile is much more apt to produce pancreatic or fat tissue necrosis than noninfected bile. Bacteria by themselves possess a relatively slight power of activation. Bacterial cultures and infiltrates, when injected into the pancreas without bile, were found to be much less harmful than when injected with bile. The destruction of this organ in the acute affection of the pancreas is caused by autodigestion of the gland, usually started by active bacteria."

It is needless to recall to your attention the arguments offered in regard to cholecystectomy in gallbladder disease. As near as I can recall, it was Opie who maintained that the retention of the gallbladder when possible is a means, through its individual mucous secretions, of rendering the bile less noxious as a pancreatic irritant. That there is an association in the etiology of this disease with preexisting gallbladder infection or cholelithiasis cannot be doubted. Alcohol and syphilis have each been given their due importance as factors of origin, but in my own series of cases I am unable to associate either as factors of weight. It is true that males, usually fat, heavily set subjects, are more frequently reported to be suffering from this disease.

As a result of the above quoted experimental causes we must include the injection of duodenal contents into the pancreatic ducts and their tributaries, as well as the extension of bile by obstruction, tension, and damming back, due to whatever cause, biliary or pancreatic, stone, gastroduodenitis, etc.

As previously stated, we classify the disease as hemorrhagic, sloughing or gangrenous, and suppurative, and a fourth or distinct class is recognized by some, the apoplectic. This last, the apoplectic, presents the appearance of a large hemorrhage in and about the pancreas, in contrast according to most authors to the hemorrhagic.

The hemorrhagic form, exhibits marked edema or infiltration in the retrotransverse colic area. The gland is swollen and tense under the reflection of the peritoneum, and stands up as a blue black firm body, readily seen through the gastrohepatic [illegible]

tum or the gastrocolic; it is accompanied by a variable quantity of bloody serum, and if the disease has advanced sufficiently, is also accompanied by fat necrosis. Opie says fat necrosis is a consequence of pancreatic disease and bears much the same relation to pancreatic lesions as does jaundice to hepatic disease.

Fat necrosis is evidenced by the characteristic yellow white plaques of variable size, scattered through the omentum and mesentery. In this latter situation the areas of necrosis are apt to be much larger than in the former. The fat necrosis was shown by Langerhans (*Virchow's Archiv*, cxxii, 252, 1890) to be due to the splitting of the fat into fatty acids and glycerin. The fatty acids are deposited and the glycerin is absorbed. Then follows a calcium salts combination with the fatty acids.

As stated before, the sloughing and suppurative pancreatitis are but successive stages of the hemorrhagic. In the sloughing stage the absorption of the fluids seen in the hemorrhagic has largely taken place, or may never have been present. Protective adhesions have formed. The pancreas has a grayish-yellow appearance, feels boggy and semifluctuating, and can be extracted in pieces like any ordinary slough. The suppurative change is merely a liquefaction of the former gangrenous or sloughing stage, plus bacterial infection, usually with well walled off protection by means of the omentum to the transverse colon and jejunum, etc.

I quote my earlier symptomatology as given in my thesis. The onset of this condition is usually a sharp pain accompanied with varying degrees of shock, rapidly followed in some cases by a profound toxemia, denoted or characterized by a peculiar cyanosis or lividity, with shallow breathing and rapid pulse. Halsted has called attention to this lividity, which is most marked on the abdomen and in the flanks.

The pain is usually of a far more intense degree than that of an appendicitis or gastric perforation, in fact, my suspicions were aroused in several of my cases by the report of the large quantities of morphine necessary to control pain. Hiccough is a symptom of relative frequency and persistence. Vomiting accompanies and follows the pain. Pain in the back, of an intense splitting character, has been evident in several of my patients.

Korte calls attention very forcibly to midepigastric pain and resistance as a strong diagnostic factor, but one must bear in mind that perforated gastric ulcer, gallbladder disease, and duodenal ulcer produce the same condition. He also, with others, calls attention to the swelling seen occasionally in the lumbar (left) region in patients with sloughing and suppuration. These symptoms and signs, when considered with a history of previous digestive disturbance and gallbladder or duct invasion, should cause the observer to give the diagnosis of pancreatitis great weight. The subsequent manifestations are those of a toxemia, with tumor in the epigastrium in a certain proportion of patients.

While agreeing with Fitz, to whom we owe the greater part of our knowledge of this disease, I cannot say that the epigastric tumor has been a manifestation in the first or second twenty-four hours, but usually after the third day. Later, abdominal tympany, aggravated hiccoughing, obstruction, either dynamic or toxic, etc., supervene.

DIAGNOSIS.

Diagnosis is rather difficult in the main, but correlating the marked pain at onset, sharp intoxication, dyspnea, lividity, and intense backache seen in some patients, one can arrive at a tentative diagnosis of pancreatitis in distinction to perforating ulcer, intestinal obstruction high up, biliary colic, etc.

Fitz's rule (see *Robson and Cammidge*, p. 399) is worth bearing in mind: "Acute pancreatitis is to be suspected when a previously healthy person, a sufferer from occasional attacks of indigestion, is suddenly seized with violent pain in the epigastrium, followed by vomiting and collapse, and in the course of twenty-four hours by a circumscribed epigastric swelling, tympanitic or resistant, with slight rise of temperature."

At this point in diagnosis, mention must be made of the diastase tests of Wohlgemuth and Noguchi (see editorial article in the *Journal A. M. A.*, 1912, on a communication by these authors originally published in the *Berliner klinische Wochenschrift*, xlix, 1912). These experimenters found an increase in diastase in the blood in cases of pancreatic trauma. The search for diastase was based upon the findings of Wohlgemuth, who, after resecting a portion of the pancreas, found diastase in increased quantities in the blood and urine. This also occurred in blocking the pancreatic ducts. The suggestion is made that, by testing for and finding excess diastase in acute abdominal conditions, chiefly traumatic in origin, the reaction produced would eliminate the explorations for suspected pancreatic lesions, and might be of the same importance in diagnosticating acute pancreatitis. The further naive suggestion is made by the authors that to prove the foregoing contentions will require observation on many patients. The authors hold that the results in this test can be obtained in a short time. Should this be true, then in nonacute cases one might add this test to his scientific qualifications as a diagnostician.

Bearing upon the mortality, diagnosis, etc., it is interesting here to quote a few statements from Korte, of Berlin (Surgical Treatment of Acute Pancreatitis, *Annals of Surgery*, 1912), who remarks the difficulty in arriving at a mortality rate and states: "When I cut from this list the cases which have been mentioned twice, I found that I had one hundred and three cases with forty-one recovering and sixty-two deaths, or sixty per cent. mortality." He states further that it seems better to consider his own experience, and reports forty-four cases of acute pancreatitis and their sequels. Thirty-eight of them were operated in, and in thirty-four of the latter the diseased pancreas was directly attacked, in the remaining four merely the concomitant gallbladder disease, and all ended fatally. He therefore concludes that the pancreas also should be attacked. Of the thirty-four patients operated on in whom the diseased organ, the pancreas, was immediately attacked, eighteen recovered and sixteen died. His sex record reads "males 30 and females 14, the youngest 16, while

the greatest number had reached the fourth or fifth decade, and the oldest seventy years."

Briefly summarizing my personal work in this disease, I find I have operated upon thirteen patients, of whom ten presented hemorrhagic and fat necrotic cases, one female sloughing, one male and one female each suppurative. I have also seen in consultation three males in whom the diagnosis was made of, in all probability, acute pancreatitis; the conditions being so grave as to preclude operation, were followed by confirmatory autopsies.

The operative deaths were, suppurative, female, one, hemorrhagic three, two males and one female; the suppurative death occurred some weeks after the operation. Several subsequent incisions were made to evacuate pus for secondary abscesses. The hemorrhagic cases that ended fatally were one female with over 2,350 stones in the gallbladder, the patient being all but moribund at the time of operation. The second patient, male, died from successive hemorrhages due to necrosis of vessels in a completely destroyed pancreas, the autopsy showing almost no pancreas left, and two gallstones in the duct of Santorini; these evidently being the cause. This patient had been ill thirteen days when I saw him.

The second male to die was one with a typical recurring gallbladder history, and a history of eating two pints of cherries and two bags —about two pints—of peanuts for a race track luncheon. He had been ill about ten days and was despaired of when I saw him. Numerous gallstones were found, with profound necrotic areas, much fluid in the peritoneal cavity, and a large hemorrhagic pancreas. He died in thirty-six hours in spite of all efforts. In neither of these hemorrhagic deaths was any infection noticeable; each patient had suffered ten days or more when seen by me. The peritoneum and viscera upon operation were not in a state of inflammation, but presented rather the picture of a venous stasis, a lividity not unlike, but more intense than, that seen upon the abdominal wall. These three hemorrhagic deaths were evidently toxic, while the patient with suppuration died from sepsis. Thus the mortality in my series of thirteen operative patients with four deaths equals 32.5 per cent. Of these thirteen operative patients there were eight females and five males, while in all patients suffering with this disease, proved on operation or autopsy, seen by me, the sexes were equally represented. My youngest patient was a female twenty-two years old; the oldest operated on was sixty-three years old; the oldest nonoperative of the three autopsies a male of sixty-five years. In but two of these sixteen patients could a history of moderate alcoholism be obtained. In all but two, in whom the gallbladder was not searched for, choleliathisis was present. Syphilis was suspected in but two. There is no question that many mild attacks of pancreatitis escape without operation, just as mild gallbladder and appendix attacks escape operative procedure. This view is expressed by all operators of any experience in this disease.

TREATMENT.

Owing to the rapidly fatal tendency of this disease in many patients, early operative procedure is indicated. Personally I am inclined to the earliest attack possible, feeling that free drainage with enteroclysis and subcutaneous infusion is the solution for a favorable result. I have never drained posteriorly, although I can see the advantages in a marked sloughing case in the costovertebral incision, but would advise with it profound drainage through the front. I have made a median or lateral incision in all the operative patients of mine, draining through the gastrohepatic, gastrocolic, and transverse mesocolic structures.

The peritoneum over the pancreas is freely punctured with a blunt instrument, or torn, and in the majority of instances free blunt punctures have been made in the body of the pancreas. Recently, in a sloughing pancreas, I made liberal drainage through all these routes, having one drain emerge under the transverse colon, one above or between the transverse colon and the stomach, and another above the stomach through the gastrohepatic omentum, with a recovery. It is in such a case as this that the posterior incision might or would be beneficial.

Deaver feels that, with the accumulation of fluid in the lesser peritoneal bursæ, the posterior drain is demanded. This does not appeal to me any more than the necessity for draining posteriorly in a badly mussed gallbladder infection would, and I think I can say that none of us see the necessity of opening into Morton's space through the rear in these patients, as they recover without such procedure.

Objection has been raised to the posterior incision alone as an insufficient means of drainage, based on the inability to reach the head of the pancreas which overlies the spinal column, and therefore can be more easily and safely reached by the anterior route. It is policy to bear in mind the influence of gallbladder disease upon affections of the pancreas; therefore evacuation of the contents of the gallbladder and drainage of this viscus is strongly advised.

Bearing upon this additional drainage, I reported in my thesis five cases of pancreatitis in which cholecystostomy was done in two of them. Both of these patients died, while in the third, that recovered, the gallbladder was not drained. These, I think, were merely coincidences. Since then I have drained the gallbladder in each patient operated upon for acute pancreatitis.

CASES PREVIOUSLY REPORTED.

No.	Female	Male	Age, years	Gall-stones	Suppuration	Result	Name, etc.
1	1		53			D.	Dr. Dan.
2	1		36			R.	Duffy.
3		1	44			D.	[illegible] ducts g. s., Catt.
4		1	49			R.	Spaner.
5	1		68			D.	[illegible]
6	1		22			R.	Piermont.
7	1		38			R.	Freeman.
8		1	47			R.	Cowan.
9		1	55			D.	[illegible]
10	1		27			R.	[illegible]
11	1		36			R.	[illegible]
12		1	35			R.	Auerbach.
13	1		38				[illegible]
Autopsies		1	58			D.	Dr. Hutchinson.
		1	65			D.	Dr. Getty.
			64			D.	Dr. Scales.

INSANITY OCCURRING IN LATENT BRIGHT'S DISEASE.

With Report of Three Cases.

By G. W. McCaskey, A. M., M. D.,
Fort Wayne, Ind.
Professor of Medicine, Indiana University School of Medicine

The etiological relationship of Bright's disease to insanity is undoubtedly merely incidental, and not in any sense specific. Nevertheless, the occasional incidence of insanity in the course of latent Bright's disease acting probably as an immediate cause, is a clinical fact demanding careful recognition. As will readily be seen, the failure to recognize a serious, perhaps rapidly fatal type of Bright's disease, underlying an acute psychosis, might easily be a most embarrassing and humiliating error. It is true that no careful clinician, whether psychiatrist, internist, or general practitioner, would very often fail to detect so important a somatic disease as this. It may happen, however, as in two of the three cases here reported, that the evolution of the insanity is explosive, developing on a background of relatively good health, so completely filling the clinical horizon that everything else appears to be inconsequential. Then there is the further fact that the ordinary routine examination of the urine may entirely fail to reveal even a grave form of Bright's disease. There can be no doubt about this on the part of any one who has followed the work along this line.

The way in which kidney disease, and the commonly associated vascular lesions operate in production of insanity, is reasonably clear. Making a proper clinical distinction between acute delirium and insanity, between which the line of demarcation, it must be admitted, is not sharply defined, it is probably true that the insanity is dependent, in the final analysis, upon the existence of what might be called a psychopathic background. When this exists, many causes such as Bright's disease, brain tumor, etc., which may terminate life without more than transient and purely incidental psychical perversion, may produce a mental disorder which by common consent would be called insanity.

Hagen[1] recites from his own and others' experience numerous cases of insanity (not merely coma and delirium) in the course of chronic nephritis. He regards the pathogenic relation of kidney disease and insanity as expressed by "acute or chronic uremia," and says that in certain cases the insanity disappears with the removal of the cause, by improved elimination, etc. It is quite probable that the factor assigned by Hagen, viz., the retention of waste products, is fundamentally the most important cause of the insanity, yet we must not forget the vascular disturbances so constantly associated, which act in a variety of ways, e. g., by impaired cerebral nutrition, mild grades of cerebral edema, or failure of inelastic vessels to respond to physiological demands, all of which impair elimination of waste products from brain cells, producing a local autointoxication with the attendant results. Following is the report of the cases:

Case I. Mrs. L., aged thirty-two years, seen in consultation with Dr. F. C. Hamilton, of Hudson, Ind., November 10, 1912. *Family history.* Father living and well, mother died at forty-five years of grippe; brothers and sisters all living and well. *Personal history:* Health always good. Had usual diseases of childhood. Never sick since. Always strong and vigorous.

Two years ago her husband died, after which she had an uncontrollable paroxysm of grief lasting several hours. Following this she was in ordinary health. No change in her emotional state, habits, attitude toward friends, etc., was noticed.

Six days before my examination, while living at her brother's home where she had gone to reside, several miles from her father's house, she heard the wreck whistle blow and immediately became excited and wanted to go home. This was at three o'clock in the morning. She seemed as well as usual the day before except that she would eat no supper. After the wreck whistle blew, she would not go to bed again. At nine o'clock on the following morning, while waiting at the depot to take a train, she suddenly left the depot and ran down the railroad track for a distance of about two miles before she was caught. From that moment on she was in a state of acute mania which gradually grew worse, and for two or three days talked continuously. Her talk was entirely incoherent. Physical examination was extremely difficult, owing to the violent condition of the patient. The urine contained albumin, hyaline, and granular casts. The case was undoubtedly one of latent Bright's disease, in the course of which, and very probably because of which, acute insanity had developed. The patient grew rapidly worse and died a few days later.

Case II. Mr. F., aged thirty-three years, railway engineer, seen in consultation with Dr. J. F. Thompson, of Garret, Ind., February 13, 1911. *Family history:* Father living and well; mother dead of consumption; brothers and sisters all living and well. Health always good until present trouble began, excepting that he was in the hospital fourteen years ago with rheumatic pain in shoulders, for a couple of months. Since that time had had several slighter attacks of the same character. About ten years ago had right sided otitis media with purulent discharge, lasting for some months.

Two weeks prior to my examination went to a neighboring city, where he served for several days on some labor union board. Six days prior to my examination was suddenly noticed to talk flightily and forget easily. His mental condition grew rapidly worse and he was taken to the hospital where he remained four days, when he was brought home, arriving the day before I saw him. When he arrived home, he was found by the attending physician in a state of acute mania with incoherent and unorganized delusions and hallucinations. About an hour before I saw him, they had succeeded in inducing sleep for the first time in a week, and it was thought best that I should return home without disturbing him in order to make a complete examination.

Subsequent examination showed the case to be one of advanced, although apparently latent Bright's disease, from which he died in a few days.

Case III. Mrs. G., aged forty-five years, seen in consultation with Doctor McKeeman, September 23, 1912. This patient had been complaining for about two weeks of headache and mental hebetude. Three days before I saw her, she began to have convulsions. She had several of these convulsions, some of which were localized in different ways, one, for instance, involved the left side, another the left hand, another the right hand, and still another the right side of the face. Altogether, she had seven.

Her mental symptoms were those of a rather severe agitated melancholia. She would get out on the floor and look under the bed for imaginary objects and persons, and for several days was kept in bed with difficulty. Her manner was not that of an acute delirium, but of a definite insanity with well formed delusions which had some stability and kept recurring in much the same form. There was at this time great impairment of kidney function, the urine being very scanty and containing both albumin and casts.

Under treatment with packs, small doses of pilocarpine, etc., this patient gradually improved and was able to leave the hospital in two or three weeks, during which time she had been suffering continuously from an unmistakable form of insanity. Renal function had greatly improved and the psychosis was apparently cured. The patient's con-

[1] Quoted by Krafft-Ebing, *Textbook of Insanity*, p. 284, 1904.

dition remained good until a few weeks later, when she died suddenly of cerebral hemorrhage.

It will be noted that these cases differ from those related by Hagen in respect of the type of insanity presented. In his cases a form of melancholia was the usual, if not the only, type. Two of these three cases were definite forms of acute violent mania. These variations in type are perhaps entirely accidental and dependent more upon the character of the psychopathic background than upon any particular influence exerted by the retention products of metabolism. This is obviously purely conjectural and it is well perhaps to bear in mind the fact that toxins corresponding, e. g., to strychnine, morphine, and other pharmacological groups have been described by trustworthy observers; and the possibility of the predominance of particular groups of toxins which might have either an excitor or depressor action upon the psychomotor centres must be recognized. It should be further noted, as a point bearing upon prognosis, that only one of the cases collected by Hagen ended in recovery, which is also true of my cases so far as the psychosis was concerned. Both cases of mania promptly terminated fatally, while the patient with melancholia made a good recovery, although she later died of cerebral hemorrhage.

My purpose in reporting these cases is to emphasize the importance of a most thorough investigation of renal conditions in all cases of insanity, especially in those fulminant types in which the cyclonic character of the psychosis is liable to make examination very difficult and to distract attention from a proper study of somatic conditions. It will be readily seen that the deleterious influence of the retention of waste products associated with Bright's disease would make the clinical recognition of these conditions of the utmost importance from every point of view in practically every type of insanity.

ABDOMEN STRENGTHENING.

A Valuable Treatment.

By Stewart Lewis, M. D.,
Lakehurst, N. J.

Man was made to be a vigorous animal. It has often been pointed out that much of his structure is better adapted to a quadruped than to a biped. He perversely insists on living by his wits rather than by his muscles and on walking on his hind legs only. While most of us would not care to retrograde in these matters, we recognize that many, probably half at least, of our illnesses are due to sedentary habits and erect posture. Because of the latter, weak structures are overworked, strong ones weaken from disuse, organs sag, intestinal and other tubes kink, dependent veins overdistend, toxins are generated. The work of Sir Arbuthnot Lane is most illuminating in this regard.

It is obvious that while we cannot return to the quadrupedal posture, we can employ methods of toning and strengthening the abdomen to compensate, and that the measures which will do this ought to be among the most valuable in medicine. These may be divided into the *active* or gymnastic and the *passive* or manual, Zander and cannon ball massage, sinusoidal and wave currents, other electric currents, etc. The method here advocated seems to me to combine the advantages of both classes.

The apparatus used is exceedingly simple; it consists of bags varying in weight from one to five pounds. For office use four bags of one, and four of five pounds each are most generally useful. They may be *prescribed* as high as twenty pounds. The most convenient filling is oats; sand, however, is much better, although it possesses the disadvantage of sifting through cloth and must be held in oilcloth, the edges being bound with adhesive plaster and stitched. A washable cover is provided. A great advantage of this method is that the patient's strength may be measured and his progress noted from day to day.

THE TEST.

The patient lies on his back. One or more bags of suitable weight are placed on the abdomen. These are to be now raised and lowered by the action of the abdominal muscles, continuing to moderate fatigue. The number of motions accomplished will form a crude test of strength. The thickness of the abdomen and range of motion may also be measured by a rule with sliding rod. It is always necessary to explain to the patient that this is *not* a breathing exercise; he should not hold his breath.

TREATMENT.

A prescription is now given covering the weight of bag to be used, the number of repetitions, and especially the posture. A definite daily progress must be insisted on. The patient will often be interested in working this out for himself. A rather heavy bag and fewer repetitions is better. The patient must not shirk, but must each time raise and lower the weight as far as possible. He must carefully count the repetitions to measure his gain and keep his interest. Often improvement in health goes hand in hand with gain in strength.

The wide applicability of this measure to abdominal disorders will be evident, especially when we add the very important adjunct of posture. Enteroptosis requires elevation of the hips on pillows. Some backache cases need a pad or pillow under the sacrum or lumbar curve; round shoulders are corrected by pad under the curve, no head pillow being allowed. By interposing firm pads under the sand bags the action may be localized, as in replacing prolapsed stomach or kidneys, making intermittent pressure for dilated cecum or atonic stomach, etc.

The advantages over familiar methods seem to me to be:

1. The benefits of active and passive methods are combined.

2. No nerve force is wasted in exercising the body and limbs. The abdomen alone is strengthened and with a minimum of effort, an important point in nervously debilitated cases. If other exercises are needed they are best given separately.

3. The results can be observed and accurately measured. Because of this and the previous reason, patients do not lose interest. The exercise is

a valuable heart tonic. Its effects are so marked that overfatigue must be looked out for.

I cannot give satisfactory case reports as I always employ other measures in addition. Good results may be expected in properly selected cases of constipation, enteroptosis, atonic stomach, loss of abdominal tone, possibly in some cases of adhesions, flabby heart, especially if due to intestinal toxins. It is not a cureall and should not be used to the exclusion of other measures, nor in cases of suspected inflammatory or ulcerative conditions. Especially it should not be used in cases which should be operated in.

Pine Tree Inn.

STUDIES IN THE TREATMENT OF FRACTURES NEAR THE ELBOW.

By A. O. Wilensky, M. D.,
New York,
Attending Surgeon, Mt. Sinai Hospital Dispensary, and the Bronx Hospital and Dispensary.

There is still great diversity of opinion among the best men as to the correct methods for the treatment of fractures near the elbow joint. In an attempt to throw some light on the subject, the following studies were undertaken, it having been our hope, that a definite rule or set of rules could be established for the treatment of these conditions. The material upon which these studies are based is the routine material seen at the Mount Sinai Hospital Dispensary, and for purposes of demonstration only the material of a single year, the last, were taken.

During that time there have been twenty-two patients with fractures in the neighborhood of the elbow; these including supracondyloid and T shaped fractures, and fractures of either condyle or epicondyle; also fractures of the head of the radius, of the olecranon and of the coronoid process. And roughly, and at the same time very accurately for clinical purposes, all of these can be divided into fractures with, and those without, displacement. The degree of derangement varied from a minimum to the maximum. Thus, in the series under discussion, there were twelve cases with no displacement, four cases with little, and six cases with much. Then, taking those with marked separation, we find that in only one of them was a proper reduction obtained, and this could not be maintained. In the others, adequate reduction could not be secured, even with the aid of an anesthetic.

It has seemed to us that the presence or absence of displacement depended altogether upon the character of the fracturing force. In those cases with more or less marked separation of the fragments, the force of the trauma acted across the axis of the bone; in those with no displacement, the force was directed in the axis of the limb. In the latter, the periosteum was very frequently untorn, and the muscular and tendinous attachments were not disturbed, at least not to any appreciable extent. The reason these structures are left intact is that at the moment the blow is received, the natural elasticity of the bone is sufficient to reflect almost all the fracturing force, the residuum being transmitted along the shaft, and being merely sufficient to fissure it. The soft parts, the periosteum, and the muscles, being much more elastic than bony tissue, reflect the total fracturing force. The net result is that the bone is broken within an intact envelope of periosteum and muscles. I think that explains the absence of displacement. It goes without saying that when the force acts across the axis of the bone, the soft parts are lacerated equally as well, and the fragments are then easily pulled out of their true anatomical positions.

A little reflection immediately discloses the crux of the whole matter. It is obvious that given a fracture with no separation of the fragments it would not make a particle of difference how the limb was put up, so far as concerns the final result. A simple sling would be as efficacious as the most complicated dressing or apparatus. And the reason for this is that the fracture occurs in such fashion that the fragments remain in their proper anatomical relations, without regard to the particular method of treatment, or the position, in which the limb is put up. To this division belong those cases which we can treat with massage and passive and active motion from the very beginning. As a matter of fact, perfect results would be obtained even if these fractures received no treatment at all.



Fig. 1.—Fracture of internal condyle of radius before operation (Case 1189).

Fig. 2.—Case 1189, showing conditions after operation.

Case No. 1360, series of 1912. A boy with a separation of the internal condylar epihysis of the humerus gave the history, that one year previously, an injury to the same elbow had restricted the motion of that joint for a few days, after which motion again was perfect. The x ray taken by us showed in addition to the present lesion, a faint line running through the opposite condyle, the scar of the healed fracture of one year before.

The important point is, that he had received no treatment for his first fracture, and still a most excellent result had occurred.

On the other hand, given a fracture, the proper reduction of which could not be maintained, it is equally obvious that any kind of apparatus or dressing would be equally inefficacious for the production of an adequate result. As a matter of everyday experience, we very frequently do not

get as far as a proper maintenance of a proper reduction; it is simply impossible for us to bring the parts into anything like their true anatomical relations, even with the aid of an anesthetic. To illustrate: How difficult it is to maintain the fragments of a supracondyloid fracture in their true anatomical position. The very multiplicity of varieties of dressing and apparatus goes to prove their futility. Or, to go further, how impossible to reduce a fracture of the radius below its bicipital tuberosity, when the strong biceps muscle pulls the fragment upward, inward, and forward in front of the elbow joint. How equally absurd, and premature, to discuss the rôle of massage and passive motion in the treatment of these lesions, until some method is available for maintaining the fragments in their proper anatomical relations, or of remedying the mechanical disability.

It seems obvious, then, that the many methods of treatment, devised by many equally competent and experienced men, will all prove equally effective for the treatment of those fractures which have little or no displacement, and, at the same time, that not a single one of them will be of the slightest use in the case of a fracture with more or less marked separation.

There remains, then, the open operation as the method of election for the latter class of cases. One quickly acquires the knack of telling from a glance at the x ray plate whether operation is indicated. I have found it best to operate as soon as the diagnosis is confirmed by the x ray. The method of procedure for each individual case depends always upon the character of the smaller fragment. A displaced radial head should be removed, and that procedure holds good also for either humeral epicondyle or for the external condyle. If the fractured internal condyle is large it should be nailed in place. A fracture above the condyles should be retained in position with a Y shaped steel plate. A fracture of the olecranon with displacement should be wired. Whenever the fragment is relatively small, a much better final result is obtained by treating it as a foreign body and removing it, than by attempting to replace and secure it in its proper position.

We always begin massage and passive and active motion within forty-eight hours after operation. We have obtained perfect results within from ten to fourteen days' time.

The x ray plates of case 1189, series of 1913, which accompany this article, are particularly instructive. Fig. 1 was taken before the operation. The picture shows a fracture of the external condyle with marked displacement, and in addition a fissure longitudinally directed in the olecranon, and another fissure in the internal condyle. The boy fell on the external and posterior aspect of his elbow, and the force divided itself, expending itself in three different directions. It acted across the axis of the humerus, and crushed away the external condyle; it acted obliquely across the shaft of the humerus and fissured and bent the internal condyle; and it acted directly in the line of the axis of the forearm, and was only able to fissure the olecranon. I operated on this boy, and treating the external condyle as a foreign body, removed it. I disregarded the two fissures. On the third day, the boy could pronate and supinate his forearm almost perfectly, and could flex and extend the elbow very well. On the tenth day, I had a perfect result. At the end of two weeks, power was equal in both limbs. The final result was ideal. Fig. 2 shows the condition after operation.

1200 MADISON AVENUE

GAS-OXYGEN ANESTHESIA.

Indications for Its Use.

By ALBERT H. MILLER, M. D.,
Providence.

There are a number of surgeons who hold that nitrous oxide-oxygen is the ideal anesthetic and that it should be used for all surgical work. There is a larger group who maintain that this anesthetic has no place in the surgical field. In favor of the latter view are the facts that a number of deaths have resulted from the use of nitrous oxide-oxygen and that this anesthetic does not produce sufficient relaxation in the average case for the work of many surgeons. On the other hand, it may be said that many lives have been saved through its use, which would have been forfeited under any other anesthetic. No observer who has had an extensive experience with nitrous oxide-oxygen can have failed to observe such cases.

The deaths under gas-oxygen anesthesia which have been reported are set down in the following table:

	OBSERVER.	DEATH ASCRIBED TO	
1.	Teter,	Shock and primary cardiac failure...	1
2.	Crile,	Myocarditis, six hours after operation	2
3.	Lydston,	Anesthetic	3
4.	Allen,	Uremia	4
5.	Allen,	No details	25
6.	Allen,	No details	25
7.	Gatch,	Hyperthyroidism	5
8.	Gatch,	Pericardial effusion	5
9.	Gatch,	Lymphatic diathesis	5
10.	Olow,	Diseased heart and arteries	6
11.	Boys,	Anesthetic	7
12.	Miller,	Suffocation from inspired vomitus...	8
13.	Flagg,	Anesthetic	9
14.	Teter,	Impure gas	10
15.	Teter,	Impure gas	10
16.	Salzer,	Anesthetic	11
17.	Collins,	Impure gas	12
18.	Buchanan,	Anesthetic	13

The case reported by Olow in *Beiträge zur klinische Chirurgie*, for December, 1911 (6), seems to have been reported as a separate case in *Surgery, Gynecology and Obstetrics* for April, 1912 (14). Among the other cases to which Olow refers in the latter article as fatalities from nitrous oxide-oxygen anesthesia, that of Adams (15) is included in Hewitt's list of seventeen deaths under nitrous oxide, not under gas-oxygen (16), and that of Owen (17) was a death under nitrous oxide administered for a dental operation and not under gas-oxygen anesthesia.

In a number of the foregoing cases, death occurred as a result of lack of care in the selection of the anesthetic. The gas-oxygen was employed in spite of manifest contraindications to its use. It is worth while to consider carefully the indications for and contraindications against the use of nitrous oxide-oxygen anesthesia.

INDICATIONS FOR THE USE OF GAS-OXYGEN ANESTHESIA

Depending on the condition of the patient:
Anemia (10).
Diabetes (18), (19), (23).
Acute infections (18), (23).
Impaired kidneys (10), (20), (21), (27).
Nephritis (18), (23).
Pyelitis (19).
Respiratory affections, especially in the aged (22), (23), (24), (27).

Tuberculosis (19).
Pneumonia (19).
Bronchitis (19).
Laryngitis (19).

Bad surgical risks, as in typhoid perforation, grave general peritonitis, intestinal obstruction: (20), (27).

Shock (26).
Collapse.
Debility (10), (21).
The very ill (10).
Old age (18).
Lowered vitality from any cause (10).

2. *Depending on the nature of the operation:*
Many minor operations, manipulations, examinations, and dressings (20), (23), (24), (26).
Operations on extremities (26).
Obstetric operations (22).
Breast operations.
Operations for empyema (26).
When the effect of surgical shock is feared (2), (26).
3. *To avoid postanesthetic nausea and vomiting:* (2), (18), (19), (23).

CONTRAINDICATIONS TO THE USE OF GAS-OXYGEN ANESTHESIA.

1. *Absence of expert anesthetist and perfected apparatus:* (10), (25).
2. *Depending on the condition of the patient;* bad heart lesions with broken compensation: (20), (24), (26).
Myocarditis (19), (21), (26).
Fatty heart.
Dilated heart (19), (21).
Aneurysm.
Respiratory obstruction (23), (26).
Enlarged tonsils and other marked narrowing of upper air passages (24), (26).
Tumors of neck, including thyroid growths (24), (26).
Cellulitis of submaxillary and cervical region (24).
Emphysema (23).
Arteriosclerosis (10), (19), (21), (22), (23), (24), (26).
Increased intracranial pressure from tumor or abscess (21).
Intestinal obstruction with distended abdomen (24).
Children under five years of age (10).
Strong, vigorous, rough men (10).
Extreme nervous temperament (10).
Addiction to drug habits or use of tobacco or alcohol (10), (21), (23).
3. *Depending on the nature of the operation:*
When perfect relaxation is desired for operations on healthy subjects.
Operations on larynx and trachea (24).

It is evident that nitrous oxide-oxygen is not the ideal anesthetic for use in all cases. It is also certain that it is an agent of the greatest value in certain selected cases. To determine the proper indications for its use, it is necessary to consider the condition of the patient and the nature of the operation. In no case should it be used in the absence of a skilled administrator.

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279 Benefit Street.

TREATMENT OF DISEASE IN THE AGED.

By Abraham Orenstein, M. D.,
New York.

Most important in treating ailments of old people are strict hygienic régime and correction of habits. Of paramount importance are the regulation and the restriction of diet. The senile can subsist on a modified fluid diet, consisting chiefly of milk, soups, eggs, toast, butter, and stewed fruits. Attempts to replace teeth in the aged are futile frustrations of Nature's law of compensation. For, if he is thereby enabled to masticate solid food, such as meat, we are apt to forget that the atrophied stomach and intestinal linings have not been rejuvenated and thus enabled to proceed with the digestion of the food of his younger days. Moreover, the aged require less food of all kinds, because they utilize less. Overfeeding, or rather a normal adult's ration, overtaxes their digestive powers and floods the blood with effete products which the kidneys and other emunctories cannot handle. The reduction should be in proportion to their inactivity.

Where the individual is accustomed to alcohol, do not withdraw it entirely, but reduce the allowance. Drinking water should be encouraged. Sour milk or clotted milk, prepared with tablets containing a pure culture of the lactic acid bacillus, is a good food and antifermentative. Cheese is also good food for the aged, but should constitute a meal and not simply the dessert.

Baths should be taken regularly, should be neither hot nor cold, of short duration, and preferably in the evening when they conduce to a good night's sleep. Hot air or Turkish baths may be permitted to the more robust; they promote metabolism and the elimination of waste products. Rest should be ordered after these. Massage stimulates the circulation; sittings should be short.

Fresh air and exercise are essential. Moderate exercise, chiefly walking, should be taken every morning. Indolent habits should be discouraged.

Clothing should be light, warm, loose, and of woolen material. The feet should be well protected. Where the corset has been the habit, continue its use. Night clothing should be of the same material. Night caps and woolen socks are desirable.

Cathartics are the only class of drugs which are administered to the aged in larger doses than to middle aged adults, but not with proportionate safety. Occasionally a case of intestinal obstruction results from repeated and heroic cathartic measures. If the first dose of compound jalap powder of one dram, or one fourth grain of elaterium, or ounce and a half of magnesium sulphate fails in its efficacy, do not repeat. It is then prudent to resort to enemata. This procedure often yields gratifying results and averts a so called case of intestinal obstruction. It is especially urged in people afflicted with hernia.

Headache is a frequent symptom, more so in the plethoric, and is due to the sclerotic condition of the bloodvessels and poorly oxygenated blood. Potassium iodide in five grain doses three times a day is of considerable help. Application of leeches behind the ears is useful, and when cyanosis is marked venesection with the withdrawal of eight ounces of blood may be performed. Fresh air and rest in bed must be enjoined during such periods

Dizziness results from the same causes and may be similarly treated. A hydrogogue cathartic should be given to cause revulsion of the blood to the splanchnic area, thereby relieving the congestion in the brain.

Insomnia is a troublesome and frequent symptom. Look for a cause in the habits of the patient. Reduce his or her allowance of tea, coffee, or tobacco. Try the use of hot food or drink before retiring. A cup of hot milk and bread is a mild soporific. A tablespoonful of whiskey in hot water may be taken at bedtime. Another simple expedient is twenty grains of sodium bicarbonate in an ounce of peppermint water. Trional, if it acts in five grain doses, may be used, given either by mouth in warm milk or in the form of a suppository.

General weakness is the complaint common to all. Since we have no specific against physiological old age, we must adapt our treatment to each individual case. Codliver oil in dram doses after meals is beneficial to some. Iron and quinine are of little or no avail. Strychnine does good by stimulating digestive processes as well as the circulation. Alcohol in the form of whiskey may be given in small doses to stimulate the appetite. Ovarian extract in the female has proved valuable. Other forms of opotherapy have failed. The administration of alkalies at intervals is advisable.

Presbyopia should be corrected with proper glasses and the patient must refrain from straining the eyes.

To conclude, the treatment of disease in senility should be conservative and without drastic changes in the modus vivendi.

HAR MORIAH HOSPITAL.

Therapeutic Notes.

Tattooing the Cornea with India Ink.—Grandclément, in *Lyon médical* for June 1, 1913, asserts that he has frequently resorted to this simple procedure in cases of central or paracentral corneal leucoma, with gratifying results. Not only is the white area effectually disguised and a normal pupil simulated, but often, after a time, the hazy zone generally surrounding a leucoma clears up, with a resulting slight gain in vision. The procedure cannot be employed, however, where the iris is adherent to or included in the diseased cornea.

In addition to its use in leucoma, first recommended by De Wecker and Abadie, Grandclément has found India ink tatooing serviceable in several other conditions. Thus, in the presence of nonvascularized corneal infiltrations which had given trouble for years because of constantly recurring irritation or even inflammation, permanent cessation of these attacks of keratitis was procured by incrusting the infiltrated areas with a few particles of India ink.

Again, in partial staphyloma of the cornea, excellent results were obtained by the same measure, the weakened tissue being, as it were, tanned by the particles of ink introduced and its normal resisting power thereby restored. The procedure was also employed in progressing cases of conical cornea, especially where the summit of the cone was opalescent or opaque. In a case where the cornea had become markedly conical in six months, and vision practically lost, tattooing of the apex of the cone, at one sitting only, resulted in diminution of the height of the cone by one half within six months and some improvement in vision.

The technic followed by Grandclément is as follows: The stick of India ink is placed for a few minutes in a concentrated, boiling solution of mercury cyanide, then rubbed on a slightly rough glass surface, in order to obtain a semifluid, rather thick paste. The eye is thoroughly cocainized. In the case of a plainly marked central leucoma, a bundle of needles, held closely together, is employed to prick the paste into the leucoma. A uniform black area is thus obtained. In the treatment of nonvascular infiltrates or peripheral corneal projections, on the other hand, a thinner, almost liquid, paste, and a bundle of needles slightly separated from one another, should be employed. There is thus obtained, not a black patch, which would be unsightly under these conditions, but a mere inconspicuous dotted area, sufficient nevertheless to bring about absorption of the infiltration or retraction of the protruding part.

Quinine in the Treatment of Scarlet Fever.—A. Trambusti, in *Semaine médicale* for June 18, 1913, is stated to have observed that during an epidemic of scarlatina in Italy, in the fall of 1912, individuals in a certain region of the country to whom quinine had been systematically given for purposes of malarial prophylaxis were spared by the exanthematous disease. This, and the fact that the pathogenic agent in scarlatina is looked upon by some as of protozoan nature, led to a trial of large doses of quinine in the treatment of this affection. In all of the cases in which hypodermic injections of quinine bihydrochloride were given the infection was cut short. The fever yielded after the second or third injection, desquamation rapidly supervened, and prompt recovery followed.

Treatment of Genital Herpes.—Queyrat, in *Paris médical* for May 24, 1913, is credited with the following ointment to be employed in this affection:

R Mentholis, }
Guaiacolis, } āā gr. iii (0.2 gram);
Zinci oxidi, 3ss (2 grams);
Unguenti aquæ rosæ (recentis), 3v (20 grams).
M. Fiat unguentum.

A Laxative Powder.—Hélouin, in *Journal de médecine de Paris* for April 5, 1913, is credited with the following formula for a laxative powder:

R Acidi citrici (pulverisati et desiccati), } āā 3iiss (10 grams);
Potassii et sodii tartratis, }
Sodii bicarbonatis, 3v (20 grams);
Olei limonis, gtt. v.
M. Fiat pulvis.

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CHARLES E. DE M. SAJOUS, M.D., LL.D.
CLAUDE L. WHEELER, A.B., M.D.

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THE NEW COMMISSIONER OF HEALTH.

We extend our congratulations to the city and to Dr. S. S. Goldwater on the latter's appointment to the position of Commissioner of Health. Doctor Goldwater has already won signal recognition of his extraordinary abilities as an administrator, and in his new field he will doubtless achieve fresh laurels, finding in the vast and complex duties of the commissioner problems worthy of his talents. As superintendent of Mount Sinai Hospital for over a decade, Doctor Goldwater exhibited unusual qualities, and the trustees have paid him the handsome compliment of release on leave without pay, thereby tacitly inviting his return at his discretion. Doctor Goldwater is a medical graduate of New York University, of 1901, since which time he has been municipal expert in hospital construction and advisory expert to the Presbyterian Hospital, the New York Hospital, the Montefiore Home, and many other institutions throughout the country; he is vice-president of the Academy of Medicine, was once president of the American Hospital Association, and is the author of *The Modern Hospital.* The good wishes of the medical profession in city and State attend the new commissioner.

VIVIDIFFUSION.

Elimination of toxic materials can unquestionably, in many nonsurgical disorders, be considered the most essential and efficient measure of treatment next to removal of the cause itself. Conditions of systemic intoxication are constantly being met with in which the kidneys and other eliminatory organs fail to excrete with sufficient promptness the poisonous substances present, whether of metabolic or exogenous origin. Not only as the possible forerunner of a clinically valuable method of auxiliary elimination, but also as an efficient aid to the study of elusive, subtle constituents, normal or abnormal, of the blood, are the experiments of significance recently published by Abel, Rowntree, and Turner (*Journal of Pharmacology and Experimental Therapeutics,* January, 1914) concerning the removal by dialysis of diffusible substances from the blood. The essential feature of the original and interesting process they have devised is the continuous passage of blood from an artery through a system of tubes made of celloidin or other dialyzing membrane and immersed in a saline solution or blood serum, and its return into a vein a minute or two later, after yielding certain of its constituents to the fluid surrounding the tubes. As it travels through a perfectly closed tubular system, kept sterile when not in use by immersion in a fluid containing thymol, the blood is not exposed to microbic infection. When the blood is run into the tubes, the latter are already filled with saline solution or serum, which then passes into the animal's circulation and mixes with the blood, thus maintaining, at least at first, approximately normal hydrostatic conditions in the body circulation. Serious loss of blood is avoided by driving the greater part back into the body at the close of the procedure. Clotting is prevented by means of hirudin, which seems to be an entirely harmless substance.

The experiments have so far been carried out only in rabbits and dogs—including some of forty to fifty pounds weight—but a large diffusion apparatus, provided with 192 celloidin tubes, is now being constructed which will permit of working with a calf, large goat, or other heavy animal, presumably in preparation for adaptation of the procedure to man.

Experience with the apparatus has shown that an animal's blood may be allowed to course through it for several hours without untoward effects or any sort of injury. In two experiments in which the cannula introductions were performed under surgical asepsis, one continued for two and the other for three hours, the animals made a quick recovery, and nothing abnormal was subsequently noted. Reports as to the substances to be obtained from the

blood by means of the apparatus are so far limited to salicylic acid, previously administered intravenously. Experiments performed to ascertain the relative eliminatory power of the apparatus compared to that of the kidneys, showed that even in its present imperfect form the apparatus can compete with these organs on favorable terms. In one experiment 24.35 per cent. of the sodium salicylate injected was recovered through the apparatus. The significance of being able to remove so large a proportion of a lethal dose of poison will easily be realized.

The results of application of the procedure to the elimination of toxics such as mercury and arsenic will be awaited with interest. Among substances other than sodium eliminated through the apparatus were sugar, urea, phosphates, and diastase. The apparatus also affords a means of obtaining the nonproteid nitrogenous constituents of the blood, other than urea, in any desired amount. The authors are now engaged in the separation of individual aminoacids from the entire mass of these nonproteids. A broad field of investigation is also opened in the study of the changes in the composition of the blood which take place in its passage through individual organs, including the addition to it of special active principles that may exist in their internal secretions. In prolonged experiments the loss through the apparatus of the substances needful to the economy, such as sugar, aminocompounds, ferments, etc., can be prevented by simply placing in the fluid surrounding the celloidin tubes, amounts of these substances equal to those present in the blood, thus preventing their passage through the membrane. By adjustments of this kind any desired substance in the blood, provided it is one capable of diffusion through the membrane used, can be removed and studied.

SERUM IN PREGNANCY AND ECLAMPSIA.

The practical application of Abderhalden's serum diagnosis of pregnancy is the strong feature of an article by Gaifami in the *Bulletino della reale accademia medica di Roma, fascicolo III,* 1913. The appropriate boundaries of the reaction are shown, and its primary success in normal pregnancy is clearly defined. Failure, on the other hand, could be traced to technical errors. The main thesis is quite sound; the technic is encumbered with too many details with which we are not yet familiar, and around which the fog of collateral reactions is steadily increasing. For instance, the reaction takes place in the serum of cancer, of poisoning by trypsin, cholesterin, and cobra venom. The simple rule is that the serum in pregnancy undergoes many modifications which may disturb the result. Apply this rule to the reaction of Abderhalden, and the measure of the possible error is at once apparent. However slightly we may rate the importance of the reaction as a factor in diagnosis, it has made the field of research wider; but the notion that the reaction is specific is not the line taken up by Gaifami.

Bengoa, *Crónica Médica* for November 25, 1913, has arranged his work on altogether different lines, though it has this much in common with the article just reviewed, that the poisonous byproducts set up in the blood by the syncitium lead to a state of things in eclampsia corresponding to "currents of antigens and antibodies." The treatment suggested is incidental to this theory. As other remedies failed utterly in eclampsia, the author employed the fresh serum of healthy pregnant women by injecting twenty c.c. in three cases of puerperal intoxication. The result was sufficiently good to justify the attempt. Arguing from the antitoxic effect of healthy serum, he deduces the consequence that it is mainly of value in puerperal intoxication, and he avoids linking up his doctrine with the facts of eclampsia due to something other than intoxication, renal disease, for example; he declares that in albuminuria there are no beneficial results from the serum. Previous writers, Mayer, Linser, Freund, Le Lorier, have treated this subject generally, and appear to think that the subcutaneous injection of the serum of a healthy pregnant woman is serviceable in the organic forms of eclampsia. Thus they differ from Bengoa in their conclusions. Mayer, in fact, takes the view, in itself theoretically untenable, that the intraspinal injection of serum is preferable. Our main criticism of these different views is that they are novel and interesting, but somehow fail to convince us.

THE PSYCHOLOGY OF JURIES.

It is now history that Mendel Beiliss was acquitted after a two years' utterly indefensible incarceration, of the "ritual murder" at Kiev. The verdict, not guilty, was rendered by a jury of six peasants, three minor government officials, two tradesmen, and one professional man—ordinary men, below the average, as a whole, as to education and intellectuality. They all, in fact, by that common sense which is, with one other, the most precious pair of gifts vouchsafed to mankind, saw clearly enough through the several weeks of obfuscation by theologians and experts, and through the baneful influences which the Russian government sought to wreak upon them, insisted courageously on thinking for themselves, and judged the issue sanely, fairly, and humanely. The other divine gift this jury had was explained in the re-

ported observation of a member of the Duma: "A Russian peasant's conscience will not allow him to find a man guilty where he sees no proof." Common sense and conscience are indeed a team that, if given a clear way, would easily convey old mother Earth and her often pitifully distraught children safely and happily along the cosmic ways.

A writer in *Harper's Weekly* observes that an ingenuous scribe who surely has forgotten that he ever read Le Bon's book, *The Crowd, a Study of the Popular Mind,* considered the acquittal of Beiliss to be "a cheerful sign. It demonstrates that the fair temper shown during the trial by the more educated classes has permeated the lower. It is lamentable and disgraceful that there should have been found men in high office and members of the official press to serve the base ends of those immediately in power." But here is a contradiction, unless it is to be assumed that high officials and the press, official or otherwise, are not of the educated classes. We learn also from the New York *Evening Post* that "the outcome of the Kiev trial throws light once more on the real source of race hatreds and international animosities; the signal for riot and murder by the mob comes nearly always from above. So that rather than having been helped by the educated classes this jury had, in order to reach a just verdict, to fight against the evil and the inhumanity that emanated from those higher classes."

The fact is that in the faculty of judgment and of reaching righteous conclusions relating to the ordinary affairs of life, high intelligence and superior education play no essential part. Knowledge and wisdom are far from synonymous terms; and many there are that have got themselves a vast amount of knowledge who have yet, with all their getting, never been able to understand their fellows, or humankind's ways, needs, and sympathies. Any experienced lawyer knows that a jury taken from the streets and from shops is as likely to render a just verdict as is a jury of intellectuals—if not more so. *Vox populi, vox Dei* is an extremely well thought out proposition.

MARTIAL AND MEDICINE.

Under the heading of Martial and Medicine, Dr Raymond H. P. Crawfurd contributes a paper of high literary merit and of considerable medical interest to the *Lancet* for December 6, 1913. Dr. Crawfurd has translated those verses of the Roman poet bearing on medical matters into excellent English and has thus produced material both readable and instructive to the physician. The epigrammatic verses of Martial depicted the everyday life of Imperial Rome exactly as it was in the latter part of the first century of the Christian era, and although the allusions to medicine are not numerous, they are amply sufficient to show that the status of medicine was low at that time.

Martial was a scathing satirist and aimed his envenomed shafts of ridicule at a profession which by the ignorance and pretentiousness of its members provided an excellent target. Specialists seemed to have flourished in Rome but, as Crawfurd points out, specialism in Martial's time was assured by the degradation of the healing art. Oculists were fairly numerous, although treatment of eye affections was of a decidedly primitive nature. Dentistry and dentists figure prominently in Martial's epigrams and indeed all the writers of the day make mention of teeth and their treatment. False teeth appear to have been worn more as ornaments than for use; they were made of ivory, bone, or boxwood and were kept in position by wiring to adjacent firm teeth.

Massage had a great vogue in Rome, and, as at the present time, was much abused. Of drugs, Martial makes little mention, but refers to mallows, lettuces, and prunes as valuable laxatives.

If we may judge from the frequency with which reference is made to gout by Martial, it must have been the most common disease in the Rome of his time. That this was so is corroborated by Pliny, who was a contemporary of Martial, but older.

Alcoholism also must have been a frequent condition, for Martial's gibes at those who indulged too freely occur throughout his satires. From a perusal of Martial, it will be gathered that in the era in which he wrote, knowledge of medical matters and of treatment in Rome was very small.

CHOLERA IN THE PHILIPPINES.

According to *Public Health Reports,* XXIX, 3, for January 16, 1914, cholera was notified in Manila as follows: Week ending November 29, 1913, two cases with two deaths; week ending December 5, 1913, two cases with two deaths. During the first named period a case of cholera was notified at Las Pinas, Rizal Province. The patient had visited in the house of a person who had had cholera in Manila. There has been no spread of the disease. A few scattered cases occurred during the same period in Dagupan, Lindgayen, Urdaneta, and San Carlos, all in the Province of Pangasinan. From the beginning of the outbreak, August 23, 1913, to December 5, 1913, there were notified in Manila 144 cases of cholera with 100 deaths and in the provinces ninety-five cases with forty-five deaths. There have been no further cases of cholera in Cebu. An additional case has been notified at Opon on the island of Mactan, which is situated about ten miles from the locality in Cebu at which the

cases of cholera occurred. No connection has been shown to exist between the cases in Cebu and those in Opon. The first case in Cebu occurred in a Filipino woman who lived at some distance from the water front, and who had not been out of Cebu for some weeks previous to the attack and had not associated with persons who had been outside of the city. The second case occurred in the son of this woman, who was taken ill about thirty-six hours after the woman was seized. The experience at Cebu is in close accord with that in a number of other instances in the Philippines, viz., that it is impossible to obtain evidence which would determine the origin of the infection.

Special Article.

THE PHYSICIAN AND THE INCOME TAX.

By Arthur N. Taylor, LL. B.,
New York,
Attorney and Counsellor at Law.

As we approach the end of the present month we realize, perhaps for the first time, that we are confronted by a new law, far reaching and drastic in its provisions and replete with penalties, with which one must either promptly attempt to comply, or, by omitting so to do, assume the liability of the penalty which will doubtless soon be meted out to those within its terms who have not complied. It is believed that nearly all desire to comply with the law, but with this desire come two questions, first, is one within the terms of the law and is any affirmative act on one's part necessary? and, second, if within its terms, how is this compliance to be met with?

All persons residing within the United States, and all citizens thereof residing abroad, having a net income of over $3,000 (or if married and living with their wives, a net income of over $4,000) are subject to the "normal" tax of one per cent. on the excess of such exempt amount. The exemption of $4,000 is however not allowable to each husband and wife, but only to the two together; thus if the husband has a net income of $3,000 and the wife a net income of $2,000, they must pay a normal tax on $1,000. Nonresident aliens are also taxable upon the income from property in the United States or from any business, trade, or profession carried on in the United States. In addition to the normal tax, "additional" tax is payable at graduated rates on the portion of one's income exceeding $20,000 per annum.

Partnerships are not required to account for their income unless requested by the Commissioner of Internal Revenue or a collector of internal revenue; the returns of the individuals composing the partnerships being considered sufficient to account for the income of the partnership.

In making up a schedule of one's income there must be included all income from salaries (except salaries of officers and employees of a State or political division thereof and of certain Federal officers), wages or compensation for personal services in whatever form, income and profits from trade, commerce, and from sales or dealing in property. It is not necessary to include, however, dividends from the stock of corporations subject to tax unless one's income with such dividends exceeds $20,000 a year, but it does appear to be necessary to include unpaid accounts accruing within the year. Upon this question, we find it stated in the helpful little book of Mr. Arthur F. Speer, head of Corporation Tax Division, Internal Revenue Department, United States Treasury, as follows:

> Persons receiving fees or emoluments for professional or other services, as in the case of physicians or lawyers, should include all actual receipts for services rendered in the year for which return is made, together with all unpaid accounts, charges for services, or contingent income due for that year, if the same are considered good and collectible. Should any such accounts prove to be bad or uncollectible, the amount of same are deductible from income for the year in which they are ascertained to be losses and are so treated and acknowledged by the taxable person. . . . Debts may be considered to be found worthless only after legal proceedings to recover the same have proved fruitless, or it is clearly evident that the debtor is insolvent and that proceedings to collect the debt would avail nothing.

When an account returned and taxed in one year is found in a subsequent year to be uncollectible, it appears that the amount of that account may be deducted from the income of such subsequent year. Against these items, one is entitled to deduct all interest paid within the year on indebtedness accruing within that year; the necessary expense of carrying on one's business, but not living or family expenses, that being included in the $3,000 or $4,000, as the case may be; all taxes paid within the year (assessments for local benefits not being included); losses during the year incurred in trade or arising from fires, storms, or shipwreck, and not compensated for by insurance or otherdise; debts due which are actually ascertained to be worthless and charged off within the year. There is also an allowance permitted for wear and tear of property from its use, exhaustion of mines, five per cent. of the gross value of the output of the mine being deducted; and the amount of income upon which the tax has been withheld for payment at the source of the income.

If, after computing the items of one's income and subtracting all proper deductions, there remains a balance of over $3,000 or $4,000, as the case may be, one must then prepare, verify, and file one's return with the collector of internal revenues in the district in which one resides or has one's principal place of business, on or before the first day of March.

Blanks have been prepared showing so clearly and plainly the character of information required, and with such full instructions that apparently no difficulty should be experienced in filling them out. These blanks may be had from the collector in one's district. In making out the report for the year ending December 31, 1913, it must be borne in mind that the period covered commences on March 1st, and is therefore calculated as five sixths of a year only. If the income for this period exceeds $2,500, the person being unmarried or not living with his wife, then the excess of that amount is taxable, while the $4,000 annual exemption, for the ten month period becomes $3,333.33.

The penalties for failure to comply with the law are severe, and, if the rigorous enforcement of the

penalties under the former corporation tax law may be regarded as a criterion from which to judge of the future attitude of the Federal authorities under the present law, it would seem exceedingly unsafe to permit oneself to become liable to those penalties. The failure to have the return in the hands of the collector on or before March 1 renders one subject to a fine of from $20 to $1,000. For failure to make a return or to verify it, the commissioner is authorized and directed to add fifty per cent. to the taxes found due. For making false or fraudulent return, the penalties prescribed are, a fine not exceeding $2,000, or imprisonment for not over one year or both. The collector may also add 100 per cent. to the tax. At any time within three years after the return became due, the commissioner may, upon discovery of its absence or errors, assess the tax which shall then immediately become due.

The commissioner makes the assessment of the tax payable and notifies the person on or before June 1st, and the tax becomes payable to the collector on or before June 30th. To any sums unpaid after June 30th, and for ten days after notice and demand thereof by the collector, there shall be added a penalty of five per cent., together with interest at the rate of one per cent. a month upon the tax from the time it became due.

In case a physician feels that he has been erroneously assessed or unjustly taxed, he may either file a claim for abatement before the tax is paid or for a refund after the payment, asking for either the return of all or a portion of the tax paid as the circumstances require. Blanks have been prepared and will be furnished by the collector, together with full information both as to their preparation and the nature of evidence required to support the claim. These claims are also filed with the collector.

The conditions under which it is most likely to become necessary to file a claim either for abatement or refund, grow out of the provision of the law requiring the collections of taxes at its source. Under this head, the law provides that all firms, copartnerships, companies, corporations, joint stock companies, associations and insurance companies, in whatever capacity acting, including lessees or mortgagors of real or personal property, trustees acting in any trust capacity, executors, administrators, agents, receivers, conservators, employers, and all officers and employees of the United States Government having the control of receipt or payment of interest, rent, salaries, wages, premiums, annuities, compensation, remunerations, emoluments, or other fixed or determinable annual gains, profits, and incomes exceeding $3,000 for the taxable year other than dividends of capital stock, are required to deduct the normal tax therefrom and pay it to the collector. In case the party from whose money this tax is deducted desires to avail himself of the additional exemptions, he should, within thirty days prior to the first day of March, file a notice with the person who is required to withhold and pay the tax, claiming the benefit of the exemption. If the exemption claimed is the additional $1,000 to which one married and living with his wife is entitled, then this fact should be properly set forth. If on the other hand, exemptions are of the character of business expenses or losses as heretofore mentioned in this article, then the notice should be accompanied with a correct return of all of the annual gains, profits, and income from all other sources as well as the deductions asked for. This statement must also become a part of the return to be made by the person required to withhold and pay the tax.

The law also requires the withholding of the normal tax of one per cent. from fixed and determinable annual or periodical gains or profits derived from interest on bonds and mortgages or deeds of trust or other similar obligations of corporations, joint stock companies and associations, and insurance companies regardless of the amount of such interest payment. This provision also includes the payment of coupons, checks, or bills of exchange, in payment of interest on bonds of foreign countries and foreign mortgages and like obligations, not payable in the United States. It is readily apparent that one entitled to such payment might be otherwise entirely exempt from the tax law, one's entire net income being less than $3,000. To gain the benefit of this exemption and secure the repayment to one of the tax deducted, it becomes necessary to prepare and file a claim for abatement of the character indicated above.

In addition to the normal tax, an "additional tax" is imposed according to the following schedule. For the portion of all incomes exceeding $20,000 a year and not exceeding $50,000 a year an additional tax of one per cent., for the portion of incomes exceeding $50,000 a year and up to $75,000 a year an additional tax of two per cent., for the portion of incomes exceeding $75,000 per year and up to $100,000 a year, an additional tax of three per cent.; for all incomes exceeding $100,000 a year and up to $250,000, an additional tax of four per cent.; for all incomes exceeding $250,000 a year and up to $500,000 a year, an additional tax of five per cent.; and for all incomes exceeding $500,000 an additional tax of six per cent.

Manifestly we do not attempt to do more than give a brief outline of that phase of the law affecting the individual. The law has other features and imposes burdens upon individuals in other relations.

News Items.

Changes of Address.—Dr. Howard Steele Holloway, to 434 St. James Building, Jacksonville, Fla.

Oswego, N. Y., Academy of Medicine.—Dr. Joseph B. Ringland has been elected president of this organization, Dr. Clifford R. Hervey vice-president, Dr. Arthur W. Irwin treasurer, and Dr. Harvey S. Albertson secretary.

Funds for the Preventorium's Open Air School Building.—At the annual meeting of the Tuberculosis Preventorium for Children Society, held in the New York Academy of Medicine on January 20th, announcement was made that $10,617.25 had been subscribed for the new open air school building. Dr. Hermann M. Biggs, president of the society, said that nearly $2,000 more would be necessary. The institution has 158 beds, thus being able to care for about six hundred children, the average length of residence being three months.

Professor Hedin to Lecture in America.—Professor Sven G. Hedin, of the University of Upsala, will deliver the seventh Harvey Society lecture at the New York Academy of Medicine, on Saturday evening, January 24th, his subject being Colloidal Reactions and Their Relations to Biology. He will give the same lecture before the Rush Medical College, of Philadelphia, on the following Tuesday evening.

New Pavilion of Flower Hospital Opened.—The new private patients' pavilion of Flower Hospital, erected at a cost of $250,000, was dedicated on Saturday, January 17th. The building is 140 feet long, forty feet wide, six stories in height, and is connected with the other Flower Hospital buildings by passages from the basement and first floor. It has been made as nearly fireproof as it is possible to construct any building, being finished throughout with tile bases, cork, floors and varnished walls. The appliances in every department are very complete.

Additions to the Staff of Grace Hospital, Detroit.—Several physicians have been added to the staff of Grace Hospital by the board of trustees. They are: Dr. Guy L. Kiefer, attending physician, department of medicine; Dr. William H. Price, health officer, consulting physician, department of contagious diseases and sanitation; Dr. F. C. Kidner, attending physician, department of orthopedics; Dr. Victor C. Vaughan, Jr., attending physician, department of medicine; Dr. Carl C. McClelland, attending physician, department of eye, ear, nose, and throat, and Dr. A. S. DeWitt, associate attending physician, department of medicine.

Personal.—Dr. Hermann M. Biggs, who resigned recently as chief medical officer of the Department of Health of the City of New York, has been appointed State Commissioner of Health, to succeed Dr. E. H. Porter.

Colonel William C. Gorgas, chief sanitary officer of the Panama Canal Commission, has been appointed Surgeon General of the Army, to succeed the late Dr. George H. Torney.

Dr. Charles E. Marshall, professor of biology in Amherst College, was elected president of the Society of American Bacteriologists at the annual meeting of the society held recently in Montreal.

Dr. George W. Webster, of Chicago, for nearly fourteen years a member of the Illinois State Board of Health, ended his services in that department on January 7th, and Dr. T. O. Freeman, of Mattoon, has been appointed his successor.

Campaign Against Medical Quackery.—In connection with the resolution introduced in the New York board of aldermen on Tuesday, January 20th, making it a misdemeanor to insert in newspapers, circulars, or handbills any advertisement which contains a misstatement of fact or is misleading or deceptive in any way, attention is called to the work the Department of Health of the City of New York is doing in order to combat the methods of the advertising medical quack. In many newspapers published in New York city appear the advertisements of various "doctors" and "institutes" calling themselves "specialists in diseases of men." The Department of Health has on file statements from men who have been to these quacks, and after reading these authentic histories it is easily seen how these "doctors" live up to the promises made in their advertisements. In fact, these histories show that it is impossible for them to do so. Arrangements have been made by the Department of Health whereby persons having either gonorrhea or syphilis, or who believe they have a disease of the sexual organs, and have no private physician, can secure free and confidential advice by calling at the Department of Health, 149 Centre Street, Room 801, any Monday, Wednesday, or Friday, between 2 and 4 p. m., or any Tuesday, Thursday, or Saturday between 9 and 11 a. m. Residents of the boroughs of Brooklyn and Queens are referred to the Department of Health Clinic, 29 Third Avenue, Brooklyn.

In connection with this matter, it is interesting to learn that in Chicago, following the recent exposure of quack doctors, the city council passed an ordinance forbidding the publication of any "advertising which contains assertion, representation, or statement which is untrue, deceptive, or misleading."

New Orleans Medical Society.—At the annual meeting of this society, held on the evening of January 12th, the following officers were elected: Dr. C. N. Chavigny, president; Dr. L. R. DeBuys, first vice-president; Dr. Thomas Lanaux, second vice-president; Dr. W. H. Block, third vice-president; Dr. E. L. King, secretary; Dr. George H. Upton, treasurer; Dr. Howard D. King, librarian; members of board, Dr. Homer Dupuy, Dr. E. L. Leckert, and Dr W. D. Phillips. In recognition of his work in connection with malaria Dr. C. C. Bass was presented with a gold medal by the society, the presentation being made by Dr. Homer Dupuy, the retiring president of the society. Dr. Rudolph Matas, presented a bust of Æsculapius to the society.

New Officers of the Medical Club of Philadelphia.—The following officers were elected at the annual meeting of this society, held on the evening of January 16th: President, Dr. Samuel D. Risley; first vice-president, Dr. McCluney Radcliffe; second vice-president, Dr. John W. West; secretary, Dr. William S. Wray; treasurer, Dr. Lewis H. Adler, Jr.; directors, Dr. William E. Huges, Dr. Ellwood R. Kirby, Dr. Swithin Chandler, Dr. F. Hurst Maier, and Dr. Rae S. Dorsett. Dr. L. Webster Fox was elected governor for three years. Resolutions were adopted deploring the great loss the club had sustained in the death of Dr. S. Weir Mitchell. The meeting was the largest in the history of the club, there being 586 members present.

Philadelphia Decision on Chiropractic.—Justice Potter handed down an opinion in Philadelphia on January 6th in the Supreme Court affirming the order of the common pleas court of Pittsburgh, which denied a charter to the "chiropractors," an organization of doctors giving treatment by adjustments of the spine. The Chiropractors' Association of Pennsylvania in applying for the charter explained the practice to be " a philosophy, a science, and an art dealing with the brain and nervous system of the body." It was contended that the association had no legal status under the law and it was to acquire this that the charter was sought. Justice Potter in his opinion held that the charter application should be withheld until the petitioners attained a legal status under the law governing all medical practitioners. No interest of the practitioners, it was pointed out, could suffer by the delay.

Wisconsin Eugenics Law Declared Invalid.—The Wisconsin eugenics law, which provides for the issuance of marriage licenses only upon a certificate of a clean bill of health, including the Wassermann test from a physician, has been declared unconstitutional by Judge F. C. Eschweiler of the Circuit Court. The Judge held that the law was of unreasonable limitation so far as the physician's fee was concerned, and that it was an unreasonable and material impairment of the right of persons to enter into matrimony. The case will go to the Supreme Court. The law is praised because of its aim toward the suppression of sex diseases, but is condemned because its enforcement is practically an impossibility. The court held that if the State wished to exercise its right to prevent undesirable marriages, it should assume the burden of weeding out the unfit, and thereby not cast upon the fit an unfair demand and thus materially impair an inalienable right.

The New York Physicians' Mutual Aid Association.—This association held its forty-fifth annual meeting on January 20 at the Academy of Medicine. There was a large attendance of members who evinced unusual interest in the management of the association. The amount insured continues at $1,000, and the number of members is nearly 2,400 men and women, chiefly from New York and Brooklyn. The principal fund is almost $90,000. The reports of the president and the treaturer were the chief features of the meeting. The former showed the average age of new members to be thirty-three years, while the age limit continued at forty-five years. The officers and trustees serve without salary. The following officers and trustees were reelected: President, Dr. W .F. Wittendorf, of New York (eighteenth time); vice-presidents, Dr. Wendell C. Phillips, of New York, and Dr. Joseph W. Ingali, of Brooklyn; recording secretaries, Dr. A. E. Davis and Dr. Edward F. Peck; corresponding secretary, Dr. W. B. Jennings; treasurer, Dr. Daniel Lewis; trustees for three years, Dr. Samuel Lloyd, Dr. Edward H. Squibbe, of Brooklyn, and Dr. Robert L. Morris.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, January 26th, Section in General Medicine of the College of Physicians, and the North Branch of the County Society; Tuesday, January 27th, Medicolegal Society, the West Philadelphia Medical Association, and St. Mary's Hospital Clinical Society; Wednesday, January 28th, County Medical Society; Friday, January 30th, Medical Club, directors.

A Low Death Rate in New York State Last Year.—Last year had the lowest death rate ever recorded for New York State, except in 1912, according to statistics compiled by the State Health Department. The respective rates were 14.9 to the thousand in 1913, against 14.8 the preceding year. The rate was lower in the cities than in rural districts. There were 145,056 deaths in all, and 228,460 births. Deaths from cancer showed the most notable increase, numbering 8,525, compared with 8,234 in 1911, and 7,500 in 1910. Such deaths in the past five years have been 5.3 per cent. of the mortality, against only 2.6 per cent. in 1892. There was only one death from smallpox. Three cases of pellagra were reported, none fatal. Only 89 deaths resulted from tetanus, the lowest figure for many years.

Civil Service Examinations.—Among the positions for which the Philadelphia Civil Service Commission will hold examinations are the following in the Medical Service of the Department of Public Health and Charities: On January 28th at 9:30 a. m.: Assistant resident physician, $720 a year; assistant physician, $600 a year; clinical assistant physician, $600 to $740 a year; assistant resident physician, $600 to $900 a year with room and board; assistant resident physician, $900 to $1,200 a year with room and board; assistant physician (insane department), $800 to $1,000 a year; first assistant resident physician, $1,200 a year with room and board; attendant male physician, $1,200 a year; outdoor physician, $540 a year. On January 29th at 9:30 a. m.: Chief resident physician, $3,000 a year. On March 2d, at 7 p. m.: Interne, with no remuneration. On January 30th at 9:30 a. m.: operator, röntgen ray laboratory, $1,000 a year.

Welfare Work in the Department of Health.—The need of organizing welfare work has been for some time considered among the employees of the Department of Health; what work has been done has not been coordinated. It is believed that the time has come when the department should take definite steps for increasing the efficiency of its employees and for promoting a better understanding between officials and subordinates. The increased efficiency of employees in the large corporations where systematic welfare work for their benefit has been instituted has amply compensated for the time and effort devoted to it. Both employer and employees gain by the feeling of mutual trust and sympathy established by welfare work. Miss Caroline Whitcher, who will have charge of the work, has formulated a plan for welfare among the employees of the Department of Health, providing for the following activities:

1. Investigating all absences over forty-eight hours. 2. Keeping accurate records of the physical condition of the individual employees, both at the time of entering employment and throughout their term of service; medical and surgical treatment for minor ailments. 3. Provision and supervision of a suitable retiring room for women. 4. Provision and supervision of a suitable lunch room. 5. Equipping and maintaining an open air roof garden for the use of employees during the lunch hour. 6. Organizing a vacation camp for women. 7. The delivery of lectures on subjects of personal hygiene, also lectures on the activities of the Department of Health and other city departments pending the establishment of a school of sanitary science in connection with the proposed Bureau of Public Health Education. a. Assisting employees in preparing for promotion examinations. Giving quizzes from time to time on the activities of the department as shown by the exhibit. b. Encouraging employees to present to their immediate superior suggestions for increasing the efficiency of the department's employees and activities. 8. A reading room to be provided in connection with the library, containing: a. All the publications of the Department of Health. b. A carefully selected collection of books of practical value to the employees in the performance of their official duties. A committee has been appointed to carry out the recommendations.

Pith of Progressive Literature.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT.

November 4, 1913.

Relations of the Nervous System to the Motor Function of the Stomach.—Bergmann, answering Eisler's and Lenk's article in Nos. 19 and 37 of this journal, avers that the relation of the nervous system to the motor and secretory functions of the stomach cannot be denied. Both authors will be obliged to modify their general assertions in that it is not possible, under ordinary circumstances, to demonstrate stomach spasms of an animal on the Röntgen picture by the aid of pilocarpine and physostigmine injections.

Radiological Studies on the Relation of the Nervous System to the Motor Function of the Stomach.—R. Massini answers the article of Eisler and Lenk; the author thinks it is wrong to apply the results obtained on the cat to the human being, particularly the sick human being. Atropine, as well as pilocarpine, has a distinct influence on the motility of the stomach.

Cause of Typhus Fever.—M. Rabinowitsch says that Diplococcus exanthematicus, discovered by him in 1908, always appears as a diplococcus and is decidedly Gram positive in fresh cultures. It does not change the colored media (Drigalski, Barsikow, litmus milk). Sugar is not fermented; milk remains unchanged. Cultures from the blood are always positive when the blood is withdrawn shortly before the crisis. Ascites bouillon (aa) with four per cent. glycerin is the best fluid medium for growth. Three to five c. c. of blood must be used to 100 c. c. ascites bouillon. The virulence of the coccus can be tested on the guinea-pig. In passage through animals the coccus undergoes many biological changes. Guineapigs which have been vaccinated once are refractory to the second vaccination with infected blood or pure cultures. Cultures heated to 60°C. in a water bath lose their power of producing the disease in the guineapig.

Movements of the Chest during Respiration.—A. Keil, in contradistinction to the findings of G. Richter (same journal, No. 41, 1912), has found that both sides of the chest under normal conditions move synchronously, and that in disease of the lung or of the pleura, the movements of the chest on the affected side (particularly over the affected area) either cease altogether or the diseased side lags behind.

Subcutaneous and Intramuscular Melubrin Therapy.—K. Riedel avers that melubrin solutions are fitted for subcutaneous or intramuscular use because they do not irritate the tissues and are absorbed in a short time. On account of the ease of application these injections are preferable to intravenous injections. In cases of acute articular rheumatism the injection of a few grams daily may be made two and three times a day without the use of the stomach

Physiological Action of Great Altitudes on the Blood.—K. Bürker says the total result of the experiments carried on over a month on three per-

sons was that great altitudes have a decided influence on the composition of the blood. The erythrocytes increase from four to twelve per cent. The hemoglobin content increases eight to eleven per cent. This increase can be demonstrated even after a longer sojourn on the plains, and is no doubt due to a compensatory process of the diminished oxygen in the rarefied atmosphere.

Significance of the Abderhalden Reaction for Diagnosis in Psychiatry.—R. Beyre's fourteen cases here reported show brilliantly the correctness of Fauser's findings. All six cases of dementia præcox reduced testicle, or ovary and brain cortex. The manic depressives reacted negatively, likewise a case of simple syphilitic degenerative insanity. In a case of progressive paralysis, brain cortex was reduced. Two legal cases are reported in this series, which illustrate the future important role of the dialysis procedure in doubtful cases.

November 11, 1913.

Psoas Palpation and Psoas Pain.—Th. Hausmann states that the psoas muscle forms an excellent foundation for deep palpation of the abdominal contents, the course of which must be studied carefully before proceeding to palpation. The following intestinal parts may be palpated: 1. The pars cœcalis ilei, which is a wormlike structure and is frequently mistaken for the appendix; 2, in rare cases the appendix itself, but only when it is sufficiently fixed by the mesentery, or when it is pathologically thickened; 3, the sigmoid flexure and the lateral parts of the transverse colon and in deep position of the colon, the whole transverse portion. The coils of small intestine cannot be palpated. The pain phenomena produced by pressure are important and are called forth by chronic appendicitis, genital affections, and frequently by disease of the upper urinary passages. The triad, psoas pain, lumbar succussion pain, and presence of red blood cells in the urine, are sure signs of disease of the urinary tract.

Digipan.—K. Weiss says digipan contains digitoxin and digitalin in about the same proportions as the plant itself, while the irritating and hemolytic (even in one to 80,000 dilution) digitonin is practically wholly removed in the manufacture. The preparation has proved a good digitalis remedy clinically. With relatively small doses and in a short time there was rise in blood pressure, diminution in the frequency of the pulse, and increased diuresis. The preparation is administered by mouth by drops or in tablet form; also intravenously and intramuscularly. Unpleasant side action or cumulative action has not been observed.

Abderhalden's Dialysis Procedure in Scarlet Fever.—W. Schultz and L. R. Grote demonstrated by means of Abderhalden's technic the presence of protecting ferments against lymph glands in the fifth and thirty-second day of disease in scarlet fever. These ferments are, as such, specific for lymph glands and not only for those changed by the scarlet fever virus.

November 18, 1913.

Avoidance of Anaphylaxis by a New Method of Serum Administration.—W. Eichholz reports that the dry serum ready for injection is obtained by carefully boiling at a low temperature under aseptic precautions genuine immunizing serum; the dry serum is then finely ground and the resulting dustlike powder is placed in sterile olive oil. On account of the absolute absence of water, the preparation may be kept indefinitely. The dry serum has this very valuable advantage over the fluid immunizing serum that it is absorbed much more slowly. A sudden inundation of the organism with proteid splitting ferments is therefore impossible, and for the same reason occurrence of severe anaphylactic poisoning. The specific therapeutic action is not compromised as many experiments have shown.

Arteritis obliterans.—Eb. Veiel reports two cases of claudicatio intermittens in younger individuals, due in all probability to arteritis obliterans. In neither of the two individuals were there signs of arteriosclerosis. On the other hand, an additional factor was a functional alteration of the nervous system; in the first cases also, misuse of tobacco.

Lymphoblastic and Myeloblastic Leucemia.—G. Herxheimer reports a case of lymphoblastic leucemia in a child five and one half years old, noteworthy because the lymph glands of the neck and elbow were converted into a common heterotopic growing tumor which produced macroscopically the picture of Sternberg's leucosarcomatosis. He reports also three cases of myeloblastic leucemia, one of them showing a peculiar swelling and necrosis in the region of Peyer's patches which simulated typhoid changes. The careful investigation of this case showed it to be a coli infection.

Successful Adrenalin Treatment in Recurring Osteomalacia.—Salis reports a case of recurring osteomalacia interesting because of, 1, the continuation of the disease in spite of castration eleven years ago; 2, the energetic and prompt healing action of the adrenalin. After two injection series of nine injections each, of 0.5 c. c. the symptoms disappeared and the patient was able to resume his duties. The improvement continued several months after the treatment ceased.

Ortizon.—F. Trümmer states that ortizon, a stable preparation, has proved its worth in rhinological and stomatological practice. The ortizon sticks are of value in the treatment of cases of epistaxis and in aphthous ulcers of the mouth.

Diogenal.—R. Heinz asserts that diogenal, derived from veronal, dibrompropyldiethylbarbituric acid, proved on animals to be much less toxic than veronal and correspondingly much less effective. The action on the whole is milder; it is therefore possible to use diogenal not only as a soporific, but also as a general sedative.

Protection against Narcotic Poisoning.—W. Cimbal suggests that all important narcotics should contain ipecac and in such doses that the smallest dose sufficient for suicidal purposes would have the desired emetic effect; for example, to two or three grams of veronal, one gram of ipecac

Diet and Dietetic Treatment from the Standpoint of Vitamine Teachings.—C. Funk says that the discovery of hitherto unknown important sub-

stances in our diet, the vitamines, and the diseases due to the absences of these substances, among which the author says are beriberi, scurvy, pellagra, tetany, and others, compels us to modify our conceptions of the diet and the dietetic treatment of disease. He has shown that losses of vitamines in diet are caused by, 1, mechanical removal of the peripheral layers of the cereal seeds; 2, excessive heating; 3, lixiviation during cooking; 4, drying out. Very rich in vitamines and therefore to be recommended for consumption, are breast milk, raw cow's milk, yolk of egg, meat juice, fresh fruit, and fresh vegetables. Remedies rich in vitamines are fresh malt extract, malt, and codliver oil.

Localization of Gastric Ulcers.—Openchowski asserts that gastric ulcers are almost always accompanied by painful sensations in the region of the spinal column and, according to the position of the ulcer, in different segments of the cord. If the fourth to the seventh thoracic vertebræ and their spinous processes are most tender, the ulcer is usually to be found between cardia and pylorus on the lesser curvature. If the tenderness extends to the tenth dorsal vertebra, the ulcer is in the region of the fundus. Tenderness further down to the twelfth vertebra indicates position of the ulcer on the greater curvature, very near the pylorus. The article concludes with two illustrations, the first representing a graphic scheme in which are incorporated the vertebral pains arising in the course of ulcer of the stomach, their localization, and varying intensity; the second, a scheme of innervation of the stomach.

Prophylaxis and Therapy of Peritoneal Adhesions.—E. Payr's idea is to fill the gastrointestinal tract with finely divided particles of iron or some harmless iron combination, and to move the organs thus sensitized by a magnet placed over the abdominal parietes. Numerous animal experiments have shown that an extraordinarily strong action of the electromagnet is possible on the ferromagnetic intestinal coils and that no damage or danger is possible through this procedure. When sufficiently strong electromagnets have been made, the method will bear important results in the recognition and removal of adhesions in the region of the gastrointestinal tract, for producing changes in position, for stimulating peristalsis, for reducing invaginations, etc.

LYON MÉDICAL.

December 14, 1913.

Latent Sugar in the Blood.—R. Lépine and Boulud found in dogs that blood from the carotid contains more free sugar and less combined sugar than blood from the right ventricle. This liberation of sugar is due to a ferment derived from the vascular endothelium, and the sugar thus set free they term latent sugar (*sucre virtuel*). The ferment in question is liberated in much greater amount than normally under the influence of phlorizin, certain vasoconstrictor agents, and stimulation of nerves with the faradic current.

C. Biot's Method of Staining the Tubercle Bacillus.—F. Arloing and R. Biot find Biot's method equally as useful for staining granular forms of the tubercle bacillus as the more complicated methods of Much, Spengler, and Fontès. Biot's procedure is as follows: 1. Make a very thin film; 2, stain with the ordinary hot Ziehl solution, allowing it to act two or three minutes; 3, without washing in water, decolorize thoroughly with nitric acid diluted one in four, followed by absolute alcohol; 4, wash with water, then treat with commercial formaldehyde solution for at least three minutes; 5, wash, allow to dry, and examine. The bacilli, stained violet black, stand out clearly from the colorless preparation. To facilitate obtaining the proper focus in preparations with few bacilli, a droplet of methylene blue stain may be placed at the edge of the smear. Granular bodies stain darker than the remainder of the bacillus. At times monopolar or bipolar sporelike formations are seen. In some preparations isolated granules identical in appearance with those inside the organisms are seen scattered in the vicinity of the latter.

Diagnostic Value of Weinberg's Reaction in Hydatid Cyst.—Lesieur, Kocher, and Aigrot report a case of cancer of the stomach and liver in which Weinberg's serum reaction was strongly positive. The autopsy showed complete absence of hydatid disease. The reaction cannot, therefore, be considered absolutely pathognomonic of the latter affection, though it is unquestionably of great value.

PARIS MÉDICAL.

December 20, 1913.

Polycholic Icterogenous Hepatitis of Alcoholic Origin.—N. Fiessinger and L. Roudowska report a case showing that a deepened coloration of the stools can occur by reason of true hepatic overactivity as well as through the hemolytic process recently emphasized by Chauffard, Widal, and their followers. The patient was a waiter, twenty-nine years old, who had contracted syphilis at eighteen, but presented no active lesions at the time. Much alcohol was being used daily. After an unusually copious libation, there appeared vomiting, anorexia, and cramps, followed next day by deep jaundice, with dark colored urine, moderate bradycardia, itching, enlargement and tenderness of the liver, and a bottle green to dark brown or black color of the stools. The condition remained unchanged, except for a return of appetite, for five weeks, during which frequent periods of polyuria, as much as seven litres of urine being passed in a day, were noted. Blood cultures and the Wassermann were negative. The spleen was at no time palpable, this affording evidence against infection as a cause of the jaundice. The resistance of the red blood cells was normal, and no autohemolysins could be found, though isohemolysins were present to an insignificant extent. The condition must therefore have been one of hyperhepatism, brought on, in the absence of any other apparent cause, by the alcoholic intoxication. Probably not all functions of the liver were augmented, however, as urea production seemed to be lowered. A temporary lessening of renal permeability, which the authors ascribe to the hepatic intoxication and cholemia, also took place, as shown by a distinctly impaired elimination of methylene blue, in spite of the polyuria.

PRESSE MÉDICALE.

December 17, 1913.

Transmission of Cerebrospinal Meningitis.—C. Dopter reviews the various arguments pro and con advanced in regard to the transmission of cerebrospinal meningitis by contagion, and declares that the theory of the autogenesis of this affection, e. g., in sporadic cases, is unfounded, because the meningococcus is unquestionably not a ubiquitous organism. Where, in the examination of military garrisons for meningococcic infection, clinical and laboratory studies enabled the author to exclude it and demonstrate the tuberculous nature of the existing meningeal disorder, no healthy meningococcus carriers were ever found near the cases. The meningococcus carriers, i. e., subjects that have had or have at the time a meningococcic rhinopharyngitis must be considered the links in an unbroken chain which unites, even at a great distance, cases of sporadic cerebrospinal meningitis apparently entirely unrelated.

Suture of the Heart.—Aulong and Boudol report a case of suture of a one cm. stab wound in the right auricle, with functional recovery so complete that the patient resumed military service one year after the traumatism. Two years later no cardiac abnormality could be detected, save slight hypertrophy and cardiovascular erethism. No drainage was used at the time of operation. Pleural effusion to a dangerous degree followed the operation, but as the apex was not displaced and there were no signs of infection, thoracentesis was not performed—a course which the patient's prompt recovery showed to have been justifiable.

REVUE MÉDICALE DE LA SUISSE ROMANDE.

November, 1913.

Clinical Examination of the Labyrinth.—H. Joliat presents a comprehensive review of this subject, and points out that the tests now available permit of securing considerable information as to the condition of the internal ear. Acoumetry, in the first place, demonstrates almost with certainty the functional state of the labyrinth, and in the presence of deafness affords presumptive evidence of the seat of the lesion. Examination in disorders of the perceptive apparatus may further reveal a lowering of the upper threshold of hearing, loss of hearing in certain isolated portions of the auditory range, a high degree of deafness, an impairment of hearing of the sounds of high pitch only slightly less, or even greater, than that of low pitched sounds, reference of the sound of a tuning fork placed at the vertex to the side of the ear with less impaired function, subnormal duration of bone conduction, and a similar but less pronounced change in aerial conduction. Tinnitus, if present, is typically musical and continuous. At times there is complete deafness on one side. Nystagmic tests reveal the condition of the vestibular apparatus and aid in the distinction of pyolabyrinthitis from cerebellar abscess. In a given case the response to acoumetric tests may be normal and that to nystagmus tests abnormal, or vice versa. In such instances there is doubtless a circumscribed labyrinthitis, affecting either the auditory or the vestibular mechanism.

ARCHIVES INTERNATIONALES DE NEUROLOGIE.

November, 1913.

Weight of Suprarenal Capsules in the Insane.—Parhon and Zugravu tabulate and discuss the results of a series of 224 cases in which the weight of the adrenals was estimated. Assuming the normal weight of these bodies to be fifteen gms., it was found that in general paralysis, epilepsy, and dementia præcox the average weight was increased, while in senile dementia, alcoholism, pellagra, mental confusion, and imbecility, the weight of the adrenal bodies was diminished, in the order stated. Attention is called to the fact that the conditions in which the weight of the glands is greatest, are those in which convulsions are common or, in the case of dementia præcox, muscular contractions excessive (catatonia). It is suggested that the increased weight in these cases may represent a reaction of defense of the adrenals, these organs being charged, according to certain authors, with the destruction of toxins resulting from muscular activity.

Delirium tremens Due to Poisoning by Datura stramonium.—Boghassian reports the clinical observation of the case of a woman of forty-three years who, following the symptoms of acute intoxication resulting from a single large dose of an infusion of datura stramonium, manifested a state almost identical with that of delirium tremens which persisted for a period of seventeen days.

BRITISH MEDICAL JOURNAL.

January 3, 1914.

Radium and Cancer.—Alfred Pearce Gould prefaces his remarks by saying, " . . . when we have to consider the action of unknown and variable radium upon unknown and very variable cancer, it is incumbent upon us to speak with great reserve, and to be constantly checking our observations with what is known of the natural history of the disease; . . . exact therapeutic knowledge can be obtained only when we have exact knowledge of the nature of a disease, and of the physiological action of the medicament." Radium has a selective action in the destruction of the cells of malignant new growths without seriously affecting the normal cells, and it is this selective action which alone is the basis for its use in cancer. It is possible to secure the gradual destruction and removal of cancerous tissue by radium without sloughing or injury to the healthy tissues. The effects obtained are much more satisfactory when the radium is placed within a cancer than when it is applied from without in the form of a plate. It is true, also, that the radiations of radium are as effective as the substance itself. Certain dangers attend the employment of radium, among which may be mentioned, sloughing, thrombosis, hemorrhage, serious constitutional reaction, and danger to the operator, who may be seriously injured by too frequent exposure. Treatment of cancer by radium meets with very decided limitations. The new growth may not be accessible to the direct action of the emanations. The nature of the part affected may prevent the use of radium, for example, the intestine. The drug is not applicable, with any hope of success, in the presence of metastases. The extent of the

influence of radium on cancer is very variable, often quite limited, and is not readily subject to control. The variability of action may even extend to marked differences in the reactions from two applications of the same dose. Certain cases of malignant disease seem to have been made materially worse as a result of the exposure to radium. Following the use of the drug, there may be a persistent and painful local reaction. With the sole exception of sarcoma of the hip joint, Gould thinks that radium ought never to be considered as an alternative to operation. It has been suggested to apply radium as a prophylactic against recurrence after operation, but there seems to be no logical reason for this. The use of radium water internally to influence cancer is charlatanism.

LANCET.

January 3, 1914

Prophylactic Inoculation against Pneumococcus Infections.—Almroth E. Wright and his associates have conducted a most extensive investigation into this question, and report some factors of immunity encountered when the pneumococcus is the infecting organism. The agglutination reaction has been tested in a number of instances, and is obtained only very irregularly with the pneumococcus. The majority of cultures and subcultures gave no agglutination with the blood of any patient, and those few cultures which did show agglutination responded thus to the sera from many patients, and also to several normal sera. Normal serum does not exert any appreciable bactericidal action upon the pneumococcus, even under the most ideal conditions of testing. Inoculation and natural infection do not seem to give rise to any such power, at least in the South African natives. Although there are many difficulties associated with the determination of the opsonic power of serum toward the pneumo coccus, and of measuring changes in this power, a technic has been devised by which trustworthy comparative results can be obtained. This method fails to yield information by which the dose of a pneumococcus vaccine, the time for its repetition, or the best mode of its administration, can be determined. A new and combined method of attack of the problem has been devised, consisting in the measurement of the "phagocytobactericidal power" of the blood against the pneumococcus. Such determinations show that the South African natives have a very much lower resistance toward the pneumococcus than has the European white man.

Some Late Manifestations of Inherited Syphilis.—J. H. Sequeira describes five cases in which there were many common characteristics—so many, in fact, as to bring them all into a single class. The ages of the patients ranged from eight to fifteen years. A history of injury was common. The lesions were all about the nose and mouth, and strongly resembled lupus vulgaris, but the destruction was produced in the course of a few weeks, and was extensive, at times leading to the total disappearance of the nose and a large part of the hard palate. Unlike lupus, there is marked destruction of bone, and the fact that a patient has noticed the presence of fragments of bone in the discharge is strong evidence of the nature of the condition. The most striking feature is, perhaps, the rapidity with which these lesions respond to antisyphilitic treatment.

Diabetes insipidus.—W. P. Herringham's patient was a young man twenty years old, in whom no organic lesions could be found. He was passing an average of about eight litres of urine daily, and was drinking an enormous amount of fluid. Elimination of all available sodium chloride from the diet (which was otherwise unchanged) caused no diminution in the diuresis. The diet remaining as usual, with the normal amount of salt, the reduction of the fluid intake was tried. This caused a great reduction in the amount of water excreted, but he lost much weight, his thirst increased greatly, appetite left him, and he began to be decidedly ill. That the diuresis was not dependent upon the necessity for the dilution of the phosphates and sulphates was shown by restricting the intake of such substances as contain these derivatives without materially altering the output of water. To confirm the previous observation on the absence of the influence of sodium chloride on the polyuria, he was given large doses of salt for several days and was able to excrete it perfectly without any alteration in the fluid output, although the concentration of salt rose to a quarter of one per cent. On the strength of its effects in true diabetes, codeine was tried and caused a marked reduction in the polyuria, to an average of about four litres a day. Other causes being fairly well eliminated so far as this case is concerned, the polyuria may have been due to a paralysis of the renal vasoconstrictor nerves, or a stimulation of the vasodilators, probably of central origin.

Operation for the Fixation of a Movable Kidney.—Peter Paterson contends that the site of the usual operation is such that the organ becomes fixed between the last rib and the crest of the ilium, a position abnormally low, and one which tends to produce kinking of the ureter and obstruction to the flow of urine. The kidney is here exposed to the pressure of the clothing, as well as to the possibility of being pinched between the ribs and the ilium. Paterson suggests the following operation: An oblique incision is made parallel to the last rib, care being taken not to injure the twelfth dorsal nerve when dividing the muscles. The perirenal fat is removed so that the organ lies in contact with the muscles when it is put into position. The capsule is then split along the convex border of the kidney and is stripped from the organ on either side for about half its extent. The upper three fourths of these flaps are folded back over the remaining adherent portion of the capsule and are retained there by a few stitches which are passed from the free edge of the flap to the capsule near the hilus. Three fixation sutures of strong gut are passed through the lower free ends of the flaps in such a way as to cause the flap on each side to roll upon itself so that there is less danger of the suture cutting through. The kidney is then replaced in its normal position and an end of each of the three fixation sutures is passed through the muscle and fascia which form the upper margin of the incision near its posterior angle. These are tied as they are placed, and the cavity is packed with gauze. This

operation replaces the kidney above the last rib and suspends it in a fibrous hammock formed of its own capsule.

Tuberculous Rheumatism.—Nathan Raw reports a case of this rare condition, seen in a girl of nineteen years who had been chronically affected with tuberculous cervical adenitis. The rheumatic manifestations consisted in pain, effusion, and swelling of the wrists and joints of both hands. There was some elevation of temperature at the height of the condition. Fluid removed from the wrist contained no tubercle bacilli which could be demonstrated microscopically. Injection into a guinea-pig and a rabbit, however, produced typical bovine tuberculosis, and the organisms isolated from the lesions in these animals were morphologically and culturally of the bovine type. The acute joint symptoms had subsided after about six weeks and the patient has been started on a course of tuberculin. Raw has seen only two other cases of this condition, and in each there were also tuberculous glands of the neck, a condition which he regards as almost certain evidence of tuberculosis of bovine origin. He also says that he is unable to find the record of any case of tuberculous rheumatism in association with tuberculosis of the lungs, which is almost always of human origin.

Nasopharyngeal and Cervical Tuberculosis in Children.—A. D. Fordyce and E. W. S. Carmichael state that, while tuberculosis is relatively rare in children under one year of age, mastoid and middle ear tuberculosis is not uncommon below six months of age. It is indicated by one or more of three signs: Watery discharge from the ear; soft, boggy, painless swelling over the mastoid process; and facial paralysis. The infection is probably due to aspiration of infected milk during the process of sucking. The authors have never seen this infection in children solely at the breast, and believe it is always of bovine origin. With regard to cervical adenitis, the authors hold that this, too, is always, or nearly always, of bovine origin, and that it is secondary to tonsillar infection. There is a gland which lies immediately below the posterior belly of the digastric and between the internal jugular and facial veins, and which is more constantly involved than any other gland in the neck, and also earlier. Enlargement of this gland is almost presumptive evidence of tuberculous tonsillar infection, which itself is often present without showing any visible signs.

BRITISH JOURNAL OF CHILDREN'S DISEASES.

November, 1913.

The Diphtheria Bacillus and Scarlatinal Infection.—T. Shadick Higgins has carried out a very careful series of observations upon the presence of diphtheria bacilli in the upper respiratory tracts of patients who have recovered from scarlet fever, and who have subsequently infected others after longer or shorter intervals. In a very large number of observations it was found that typical diphtheria bacilli could be isolated from twenty-five per cent. of all recovered scarlet fever patients who subsequently became the source of scarlatinal infection of others. On the other hand, this bacillus was present in only seven per cent. of those recovered scarlet fever patients from whom no secondary scarlet infection took place. This latter is also the percentage of positive findings of diphtheria bacilli in normal healthy school children. From these observations it seems that the presence of the diphtheria bacilli in the upper respiratory passages of a recovered case of scarlet fever is associated with a prolongation of the period of scarlatinal infectiousness, and the probability of infectiousness is increased by the presence of the diphtheria organism. The occurrence of rhinitis, and sometimes of otorrhea, is common among these infectious, recovered patients, and it seems probable—though it is not certain—that the rhinitis is due to the infection by the diphtheria organism. Whether the diphtheria bacillus merely keeps up a pathological condition in the nose, in which the unknown scarlatinal germ can continue to retain its virulence, or whether the bacillus has a property, peculiar to itself, of enabling the scarlatinal virus to flourish even in the absence of rhinitis (a symbiosis) has not been determined. From the frequency with which the diphtheria bacillus is to be found in the healthy noses of those in intimate contact with scarlet fever patients, and from the fact that these persons are peculiarly liable to spread scarlet fever, it seems that there is some evidence for the belief that the diphtheria organism may bring with it the scarlet fever virus. It is also a common experience in fever hospitals, to find that the scarlet fever patients are peculiarly susceptible to diphtheria infection. It is also well known that the epidemics of these two diseases are often strikingly parallel both in location and in intensity.

The Intestine as a Pathway of Tuberculous Infection.—Leonard Findlay, by feeding rabbits with tubercle bacilli enclosed in capsules, has obtained results which, he feels, warrant the following conclusions: 1. Healthy rabbits can be infected by the ingestion of large amounts of bovine tubercle bacilli. 2. The bacilli can pass through the apparently intact intestinal mucous membrane and reach the mesenteric glands within a period of six days; this, however, does not frequently happen. 3. When infection occurs the intestine is invariably the seat of lesions, and thus tuberculosis of any organ, other than the intestine, is always a secondary infection when the bacilli have entered by the intestinal route. 4. Catarrh of the intestine does not favor the passage of the tubercle bacillus through the wall, but allows of a more constant, and also of an earlier and more widespread infection of the bowel, and in this way facilitates dissemination. 5. Healthy rabbits apparently cannot be infected by the ingestion of large amounts of the human tubercle bacillus. 6. Rabbits just recovered from intestinal catarrh manifest tuberculosis after the ingestion of human tubercle bacilli. 7. With the human type of organism a local lesion, though always present, may be slight in comparison with the disease foci in the mesenteric glands. 8. It would seem that the best means of combating the spread of bovine infection in childhood—until tuberculosis of cattle is eradicated—is in the avoidance of everything likely to cause intestinal catarrh.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

November 1, 1913.

Bronchial Spirochetosis.—A. J. Chalmers and W. R. O'Farrell believe that bronchial inflammation associated with the presence of spirochetes will be found very common in the Anglo-Egyptian Sudan. In the ten cases they have seen, large numbers of Spiroschaudinnia bronchialis were found in the sputum, but relatively few bacteria, and no other organisms such as fungi. The spirochetes are always present in abundance during an attack, diminish during convalescence, and are subsequently either absent or found with difficulty. Intratracheal inoculation of a healthy monkey with sputum from a case gave positive results. Tubercle bacilli were never found in the cases under observation, and the authors are convinced that the spirochete referred to is the cause of the affection. Chilling, however, may act as a secondary cause. The symptomatology is that of mild attacks of acute bronchitis, separated by intervals of good health or of a more chronic illness closely resembling the early stages of phthisis, and sometimes associated with slight hemoptysis. Complication with the pneumococcus was met with in one case. The diagnosis can be made only by examination of fresh sputum, preferably with dark ground illumination. The organisms, though numerous, tend to collect in special areas of the film, and may therefore require a little search. The disease seems readily amenable to treatment in its acute phases. Rest in bed, good food and ventilation, and arsenic in some form, preferably with glycerophosphates, are indicated. The drugs may be given by mouth, or intramuscularly as an injection: Sodium cinnamate, 0.05 gm.; sodium cacodylate and sodium glycerophosphate, of each 0.1 gm. The disease is probably transmitted by human carriers. The history of a similar attack should lead to an examination of the sputum, and if this prove positive, arsenic should be given for prophylactic purposes.

November 15, 1913.

Hepatic Abscesses Opening Upward Through the Lung.—James Cantlie points out that the disappearance from clinical practice of abscesses, far back in the liver, bursting upward through the lung cannot be expected with the diagnostic means now available. Such cases may even become more numerous, owing to excessively prolonged attempts to destroy the amebas by medical treatment. Ipecacuanha or emetine should, indeed, be given in hepatitis associated with dysentery in the hope of preventing pus formation, and it is possible that the drug may, by destroying the organisms, actually cause a threatening intrahepatic abscess to abort; but that it can resolve an established abscess is to be regarded as improbable, and that pus beyond the liver—suprahepatic abscess—can be affected by the drug is inconceivable. The point of transition from safety to danger during the ipecacuanha treatment is obscure, as it is impossible to determine.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

[illegible], 1913.

Universal Circumcision as a Sanitary Measure.—A. L. Wolbarst expresses the opinion that there is much to be said in favor of circumcision, and very little, or practically nothing, against it. The most that can be said against it as a routine measure is that it is sometimes done improperly, with the result that infections of a serious nature follow; but to condemn circumcision itself because of this is worse than childish. The operation must be considered one of the most beneficent measures ever devised for sanitary purposes in human beings. The pediatrists who see the evils of faulty circumcision, or infections resulting therefrom, see only exceptional cases, in which the normal and usual result has not been attained. Circumcision reaches its greatest usefulness in adult life, particularly when the individual is brought into contact with venereal infection. The practice is an aid to general cleanliness and a prophylactic against syphilis and chancroid, against venereal warts, herpes, and epithelioma, against masturbation, against local complications in venereal disease, against balanitis, and against phimosis and paraphimosis; and, notwithstanding Maas and his supporters, it is the moral duty of every physician to encourage circumcision in the young, it being immaterial whether it is done as a religious rite or a purely sanitary measure.

Hysterical Blindness of Both Eyes in Elderly Men.—L. Newmark, in presenting two cases, remarks that it is commonly asserted that hysteria is chiefly observed in young persons and in females. As for the element of sex, the impression left by his own experience is that the preponderance of female sufferers is not sufficient to cause him to doubt a much greater susceptibility to the affection in women; and the two cases in question have helped to confirm the doubt. He has had but one case of (unilateral) hysterical blindness in a woman to oppose to these, though this numerical relation is not in accord with the aggregate experience deduced, in 1902, by Kron. One of the patients had reached an age equal to that of the oldest patient with hysterical blindness (unilateral in that case) of whom he has found mention, while the age of the other exceeded his by six years. Their ages, being uncommon in the circumstances, make their cases interesting; and, coinciding, as they do, with that period of life in which the effect of time on the bloodvessels of the nervous organs may be revealed by grave and not altogether dissimilar impairment of functions, they make the cases important.

Extrathoracic and Intrathoracic Esophagoplasty in Connection with Resection of the Thoracic Portion of the Esophagus for Carcinoma, by Willy Meyer.—See this JOURNAL for July 5, 1913, p. 38.

The Iodine Content of the Thyroid Gland, by E. V. Smith.—See this JOURNAL for June 28, 1913, p. 1371.

A Comparative Study of the Effects on Blood Pressure of the Extracts and Serums of Exophthalmic Goitre and of Other Substances.—A. H. Sanford and J. M. Blackford describe this study, made at the Mayo Clinic, and present the following summary: 1. Extracts of exophthalmic goitre cause a very marked fall in the blood pressure of the dog, with splanchnic dilatation and slowing of the pulse. The first injection produces tolerance toward subsequent injections. Atropine does not affect the action. 2. The serum of patients at the

height of intoxication from acute exophthalmic goitre causes a marked fall in blood pressure; tolerance is produced. 3. The only substances the authors have used which produce comparable drops in blood pressure, with tolerance, are Witte's peptone (ten per cent. solution) and extracts of sarcoma and hypertrophied prostates. 4. Brain extracts and extracts of decomposing tissue containing cholin produce very different drops in that there is no tolerance produced, and atropine inhibits their action. 5. The tolerance produced to extracts of sarcoma and prostates or peptone solutions does not protect the animal from the typical action of the extracts of exophthalmic goitre. 6. The tolerance of the serum of exophthalmic goitre apparently protects the animal against the action of the extracts of exophthalmic goitre. The conclusion is that there is a powerful depressor substance in saline extracts of exophthalmic goitre, and apparently the same substance is present in the blood of individuals suffering acutely from the disease.

MEDICAL RECORD

January 10, 1914.

Operative Treatment of Paralytic Talipes calcaneus, and Allied Distortions.—Royal Whitman states that the most important of all the forms of talipes is calcaneus, because paralysis of the calf muscle disables both functions of the foot (to serve as a secure support and to balance and propel the body), and induces a deformity which progresses in spite of mechanical support. The removal of the astragalus is indicated as the essential preliminary to permanent relief. The laxity of tissue thus obtained, enables us to displace the foot backward and to implant the malleoli on its basic structure, near the centre. This equalizes the leverage and checks dorsal flexion by direct impact of the tibia on the scaphoid. Tendon transplantation, usually of the peronei, is a useful supplement to restore in some degree the power of plantar flexion. By this procedure a range of serviceable movement is restored, and deformity is reduced without violence. The operation, although most successful in cases of extreme distortion, is also effective as a preventive of progressive atrophy and deformity, and, if it is properly performed, the results, both as to appearance and function, improve with time. In all these particulars it presents a striking contrast to other methods of treatment. It is of service also in a variety of other forms of paralytic talipes associated with lateral instability, and, furthermore, in quite a different class of cases: in tuberculosis at the ankle, where one aims to remove the disease and yet retain motion, and to restore motion at the ankle in cases of ankylosis or of deformity and limited movement caused by fracture of the astragalus or the malleoli. The author refers to the successful results in a large number of cases, and gives the details of the treatment as applied to a typical case of calcaneovalgus.

Extirpation of Bacillus diphtheriæ by Means of a Thallophytic Fungus, Achlya muscaris.—L. L. Ten Broeck concludes, from a clinical and experimental study of the action of this fungus: 1. Achlya muscaris possesses the power of destroying Bacillus diphtheriæ in culture and in the throat. 2. Throat inoculations of this fungus are usually limited, and may require some adjustment in the way of repeated inoculations or inoculation in special areas or under special conditions to embrace all complications in the nose. 3. It has the power of inhibiting the growth of a number of throat pathogens, and seems to influence favorably membranous anginas of various origin. 4. Its clinical use appears to be attended with no danger, but aftertreatment with mild antiseptics is recommended to remove the fungus. 5. It is applicable in all stages of the disease and seems to give speediest results in the early cases. 6. There are grounds for believing that a throat in which this fungus is growing is soon shorn of its danger of contagion, even if the diphtheria bacilli are still harbored. 7. It is admirably adapted to the clinical requirements for reliable and ready use.

Physical Condition of Retarded School Children.—S. Josephine Baker made this study, and for the purpose twelve schools in four of the boroughs of New York were selected, on the basis of the average school, without a preponderating attendance of children of any one nationality. A number of tables are presented, and the author goes on to say that the relatively small number of retarded children who were physically normal with the exception of defective teeth offers an interesting field for study as to the significance of dental defects in relation to retardation. The comparison of the various types of physical defects found is significant. Malnutrition, found in 2.9 per cent. of all school children, was found in 36.1 per cent. of the retarded children; anemia in twenty-three per cent. of the cases. Although the examination for defective vision was made more thoroughly than has proved practicable in the routine examination of school children, the marked difference—34.7 per cent. in the retarded children, compared with 9.3 per cent. in the children as a whole—would appear to be not wholly due to the greater care taken in this instance, but rather should be considered as a definite cause of the retardation, and, therefore, a predominant symptom in children selected because of inability to progress in their studies. The striking contrast between 20.4 per cent. of instances of defective nasal breathing in the retarded children, and 7.6 per cent. in the regular group, is more marked than that of the respective occurrence of 19.2 per cent. and 10.4 per cent. of hypertrophied tonsils. Defective hearing, in three per cent. of the cases, is an obvious cause of retardation. (This is found in only 0.5 per cent. in the children at large.) Pulmonary disease, with the ratio of three per cent. to 0.1 per cent., and cardiac disease, in the contrasting occurrence of 2.3 per cent. in the retarded and 0.5 per cent. in the children at large, follow the general ratio of the other serious defects. The one exception noted is the relative importance of defective teeth.

ANNALS OF SURGERY.

November, 1913.

Traumatic Erb's Paralysis in the Adult.—A. S. Taylor and L. Casamajor aver that traumatic Erb's paralysis in the adult is by no means rare. The cause is practically always a forcible wide separa-

tion of the head and neck of the humerus from the corresponding shoulder. The resulting lesion consists of torn deep cervical fascia, torn nerve sheaths, torn nerve fibres, torn vessels with resulting clot. All of these elements combined form a cicatrix or cicatrices which interfere with nerve regeneration and function. In nearly all cases the injury involves the roots in order from above downward, and the maximum injury is to the upper roots. The symptoms depend upon the situation of the cicatrices and the number of roots involved. The paralyzed muscles fall into groups which correspond with the plexus roots from which they derive their innervation. The sensory symptoms are neither so definite nor so widespread as the motor, and they are apt to disappear much sooner. The completely paralyzed muscles show reaction of degeneration, while the less completely paralyzed show various degrees of sluggishness to the testing currents. The lesion can always be felt through the skin by the examining finger. The prognosis, where there is a real lesion, is distinctly bad without operative repair. With prompt operative repair the outlook is much improved, but a really perfect result is not to be attained in many cases. The only rational treatment consists in prompt exploration with such repair of nerve structures as may be indicated in the individual case. If no macroscopic injury is found, practically nothing but a skin wound has been made. Operation consists in the resection of the damaged areas of nerve, followed by end to end suture of the roots and trunks. In bad cases where the resection has been so extensive that approximation by suture is impossible, resection of the middle of the clavicle will greatly facilitate the approximation. Aftertreatment consists in the wearing of some fixation apparatus for from six to twelve weeks to keep the neck and shoulder of the damaged side in close approximation to favor firm anatomical and physiological union of the nerves. With the removal of the fixation apparatus the various forms of physical therapeutics should be systematically employed. Results are late in appearing and will seldom be perfect.

Splenic Anemia.—J. S. Rodman and D. P. Willard conclude that splenic anemia is a disease entity characterized by a definite symptomatology and patholgical picture, and the so called Banti's disease is its terminal stage. In all probability the primary cause of splenic anemia is a toxemia, the origin of which is to be sought for outside the spleen itself, possibly in the gastrointestinal tract, but the exact nature of which is as yet unknown. This toxin probably acts primarily or secondarily on splenic cells, causing a hypertrophy and increased activity. This increased splenic activity is responsible for the anemia, probably through a decreased resistance of the red blood corpuscles. Icteric pigmentation is also due to an increased hemolysis. In all probability toxic factors play the important role in the production of liver cirrhosis, although the mechanical factor of congestion of the portal system may be an additional cause. Up to the present time, treatment other than surgical has yielded only temporary benefit. Splenectomy in the first and second stages offers us our only chance of permanent cure. The mortality is 12.5 per cent. Splenectomy in the third stage will arrest the further development of the disease, but will not cause a retrogression of the liver cirrhosis. In a few isolated cases of early cirrhosis, permanent cure has followed removal of the spleen. In the past five years mortality following splenectomy when done in the third stage has been 56.25 per cent. The combination of splenectomy and Talma's operation should be the procedure of choice in this stage.

INTERSTATE MEDICAL JOURNAL.

December, 1913.

X Ray Aid in the Diagnosis of Carcinoma of the Colon.—J. T. Case urges a thorough routine examination in every gastrointestinal case of carcinoma; and states the Röntgen findings of carcinoma of the bowel to be as follows: 1. Delay in the onward progress of the bismuth column following a meal of bismuth mixed food. The nature of this interference varies with the location of the lesion, and the stasis in the colon may vary from forty-eight hours to several days. 2. The introduction of a bismuth clysma into the colon shows a characteristic arrest in the progress of the bismuth column, a hindrance which may be complete or may be overcome in a short time, according to the degree of stenosis. 3. A dilatation of the colon on the proximal side of the lesion. This is not necessarily great and may not be demonstrable during the bismuth examination, but when present, it is evidence of serious obstruction. 4. There may be a palpable tumor coinciding with the filling defect. A palpable tumor may not be present, and it would scarcely be expected as a constant finding if one hopes to make a comparatively early diagnosis. The technic of the examinations is described.

The High, Short Incision for Cæsarean Section.—H. S. Crossen finds that a short, high incision, placed entirely above the umbilicus, when employed in suitable cases, has distinct advantages. First, there is less extensive handling of peritoneal surfaces, and hence less peritoneal shock and less danger of infection from handling. Secondly, the incised uterus drops away from the abdominal incision, thus preventing adhesions and firm fixation of the uterus to the abdominal wall, which has proved a serious matter in some cases operated on by the usual incision. The high incision is obviously suitable for only clean cases where it is permissible to open the uterus within the peritoneal cavity. When the uterus is infected, or possibly infected, the long incision should be used, so that the uterus may be turned out before being opened. Again, when there is a probability that the uterus will have to be removed on account of a tumor or other complication, the low incision should be employed.

Case of Intraabdominal Omental Torsion.—E. K. Armstrong's case was that of a male, aged twenty-two years, who had been ill for a week, with constant pain localized in the right hypochondrium. A diagnosis of probable cholecystitis was made, and an exploratory laparotomy done; when a portion of the right border of the great omentum was found to be twisted three times upon itself, the torsion being just distal to the attachment of the

strand to the main portion of the omentum. A part of the strand was matted together into a ball, and its tip was so firmly adherent to the pylorus that its separation necessitated ligation of the bleeding point left behind. The twisted strand was clamped in normal omental tissue and cut off, and the small stump ligated with absorbable catgut. The abdomen was then closed, and an uneventful recovery followed. Correct preoperative diagnosis of omental twists is rarely possible, the author states, Rudolph being credited with the only one ever made. Fortunately, however, the condition for which it is mistaken, such as appendicitis or intestinal obstruction or strangulation, usually requires early surgical intervention. The death rate in operated cases has been given as thirteen per cent., but patients operated on early invariably recover. In unoperated cases unaided recovery seems possible, but gangrene would probably result in peritonitis and death. Rarely, unwinding of the pedicle has been attempted in the effort to relieve the circulatory obstruction, and thus restore the vitality of the mass; but removal of the strangulated portion is the only safe procedure.

JOURNAL OF INFECTIOUS DISEASES.

November, 1913.

Influence of Strychnine, Caffeine, Chloral, Antipyrin, Cholesterol, and Lactic Acid on Phagocytosis.—Arkin states that there are three essential factors concerned in bacterial phagocytosis on which chemical substances may act so as to increase or depress phagocytic activity, namely, 1, the leucocytes; 2, the opsonins; and, 3, the bacteria. The effects of a variety of substances on phagocytosis have been studied by him and a brief statement of results is made. From his own and other experiments he concludes that alcohol, chloroform, ether, chloral, morphine and potassium cyanide depress phagocytosis *in vitro*. These substances all have an inhibitory effect on oxidation, to which their action on phagocytosis is in all probability due. Strychnine has a marked stimulating action on the phagocytosis of streptococci by human leucocytes in the presence of human serum. This action offers an explanation of the value of this drug in infections, and suggests a more extended use of it. Caffeine, in weak solutions, one tenth per cent., has practically no effect, but stronger solutions inhibit phagocytosis. Antipyrin has no effect, cholesterol has little effect, while lactic acid suspends hemolysis and phagocytosis by acting on the complement and the opsonin.

Fusiform Bacillus Isolated from the Blood Stream.—Larson and Barron report a case of fatal infection by the fusiform bacillus of Vincent's angina with extensive ulceration and necrosis of the upper jaw. Two days before death the basilic vein was aspirated and cultures were made. After anaerobic cultivation, pure growths of the fusiform bacilli were obtained. Incidentally the authors believe that these bacilli and the associated spirilla are akin. On the other hand, Krumwiede and Pratt, in a brief article in the same number of the journal, hold that these two organisms are separate and distinct bodies.

Proceedings of Societies.

WESTERN SURGICAL ASSOCIATION.

Twenty-third Annual Meeting, Held at St. Louis, Missouri, December 19 and 20, 1913.

The President, Dr. JABEZ N. JACKSON, of Kansas City, Mo., in the Chair.

Tuberculous Hipjoint Disease and Its Treatment with Bismuth Paste.—Dr. EMIL G. BEER, of Chicago, reported 102 cases. The bismuth paste had been employed for diagnostic and for therapeutic purposes, as well as for the treatment of cold abscesses. He demonstrated three cases of hipjoint disease. Examples like these explained to a degree why surgical operations for these chronic suppurating sinuses often failed. A glance at the radiograms which represented injected sinuses taught us how irrational it was to attempt a dissection of tortuous sinuses which led into an inaccessible region. In the light of these pictures the probing of a sinus would not appeal to those who wished to be consistent. He had found that hipjoint disease in its incipient stage was too frequently diagnosed as rheumatism. Two thirds of the cases gave the history of having been treated in the beginning for rheumatism or sciatica. He had further noted that when the disease had progressed to the stage of abscess formation, incision and drainage was as a rule the form of treatment, a method which was now generally condemned. He had noted also that sacral tuberculosis or that of the sacroiliac joint was frequently taken for hipjoint disease. He had met with five such cases. The reason for this mistake was explained by the similarity of the swelling and contractures of the limb on the affected side, which he found in hipjoint cases.

He had noted that when a patient who for years could not carry his weight on diseased limbs, on account of acute pain in the joint, and was obliged to use crutches could, after the joint was closed, walk without pain and he had in most instances allowed the patients to discard the crutches. The prevention of bismuth poisoning consisted in not allowing large quantities of the paste to remain in the body for absorption. Should the symptoms appear, the paste must be removed by washing out the cavity with warm olive oil. The sterile oil was injected and retained for from twelve to twenty-four hours, in order to produce an emulsion, which should be withdrawn by means of suction. After its removal all symptoms would promptly disappear. Scraping out the paste with a scoop was a dangerous procedure because it opened fresh channels for absorption.

Dr. J. W. COKENOWER, of Des Moines, said he had tried carbolic acid ,formaldehyde, iodoform, etc., along the line of treatment of injections, and failed. When bismuth paste was brought forward, he tried it and failed. He also got bismuth paste poisoning in some cases. The reason for the poisoning was this: in a case of cold abscess he made too large an incision. There seemed to be considerable necrotic tissue. In curetting he exposed new tissue, injected the paste, and in the place where he left it raw the paste was absorbed.

To obviate his mistake, he injected olive oil, filled the wound, allowed it to remain twenty-four hours, then took a suction pump, pumped out the paste, and saved the patient. One should make a small incision in these cases, the pus being sterile, inject with bismuth paste, and then its presence would stimulate leucocytes, dispense with the phagocytes, and bring about a proliferation of tissue, and if the injection was made properly, one was sufficient.

Parosteal Callus: So Called Myositis ossificans traumatica.—Dr. Oliver J. Fay, of Des Moines, reported six cases of traumatic intramuscular ossification; in four cases the brachialis anticus was involved, in two the vastus medius. In two cases the ossification followed a dislocation of the elbow, in three others a contusion was the determining factor, while in the remaining case, there had probably been a rupture of the muscle. The youngest patient was sixteen, the oldest fifty years old. None of the four theories advanced to explain the pathogenesis of these intramuscular bone formations (the hemic theory, the theory of aberrant sesamoid bones, the theory of periosteal detachment or dissemination, and the theory of ossifying myositis) was entirely satisfactory. The first two had found but few supporters; the third did not explain muscle ossification in muscles not overlying the bone, while the fourth, in so far as it assumed a hematogenous infection, lacked clinical evidence. Histologically the bone mass was found to bear a close resemblance to the callus of fractures; the whole picture was that of a reparative process, the damaged connective tissue cells having temporarily lost their differential function and become osteogenetic. Since the term myositis ossificans traumatica emphasized the inflammatory rather than the reparative nature of the ossification the author preferred the appellation *parosteal callus.*

The early symptoms were those of any contusion, but the functional did not keep pace with the objective improvement and an indurated mass became palpable. While the clinical picture and the history of trauma might suggest the presence of a parosteal callus, the radiograph was essential to differential diagnosis. Operation was indicated where there was functional disability or where the parosteal callus interfered with the blood or nerve supply. The prognosis was good unless there was periarticular ossification. An early operation must be radical, and all damaged tissue removed to guard against a recurrence, but better functional results were obtained if the callus was allowed to "ripen." A conservative operation was then possible and the maximum amount of the muscle tissue was saved.

Subacromial Bursitis.—Dr. L. W. Littig, of Davenport, Iowa, stated that the subacromial bursa, as large as the palm of a small hand, and located between the tuberosity of the humerus and the tendon of the supraspinatus below, the overhanging acromion above, had been described as made up of two separate and distinct bursæ, the subacromial and the subdeltoid. Codman, who brought this subject prominently before the profession in 1906, considered a single bursa the more usual condition. Prentiss, basing an opinion on an enormous dissecting room experience, considered this bursa usually multilocular, which might be regarded as evidence of the frequency of bursitis, as the loculi must indicate preceding inflammation followed by more or less "stretched" adhesions. Shoulder joint disability due to inflammation of this bursa was exceedingly common, and usually diagnosed as rheumatism, neuritis, sprain, myositis, etc. Traumatism of one kind or another, as a blow or fall on the shoulder, or general sepsis, was the usual cause of subacromial bursitis.

In the acute stage of bursitis, the shoulder joint was locked by muscle spasm whenever movement beyond an arc of 10° was attempted. Abduction, and outward and inward rotation, were impossible because of muscle spasm and pain. Or the bursa might be distended with fluid and caught between the tuberosity of the humerus and acromion, thus mechanically limiting abduction. In the second stage, adhesions formed between the opposing floor and roof, and the above named movements were limited partly by pain and muscle spasm, but more efficiently by adhesions. In the third stage movement might be quite free, although abduction and internal and external rotation were more or less limited, depending on the character of the adhesions between the opposing walls of the bursa, or by the bursa distended with fluid.

Dawbarn's painful point was of value in making a diagnosis, and consisted of severe pain on pressure just beyond the acromion, when the arm was hanging at the side. The painful point disappeared when the arm was raised. When a distended bursa limited abduction, a slight rotation outward brought the bursa between the overhanging acromion and the neck of the humerus, in which position the arm could be raised with less difficulty. In the second stage, adhesions might be stretched, which was best accomplished by standing on a block of wood, firmly grasping some object as a cross bar just within reach, and then stepping to the floor. This cross bar might be gradually raised perhaps an inch a week, and the range of motion gradually increased. Excision of the bursa might be considered.

Multiple Exostoses: An Hereditary Affection of the Body Skeleton.—Dr. Roger T. Vaughan, of Chicago, stated that all cartilaginous exostoses were congenital in origin, being demonstrable probably at birth, though usually not recognized by patients or clinicians till years later; that the tendency to their formation was hereditary and transmissible; that they were frequently accompanied by other developmental defects of the skeleton, some of which were characteristic of the affection; and that these tumors might be accompanied by congenital defects of other body structures. The fact that cartilaginous exostoses as well as enchondromata represented congenital anomalies of the skeleton had not been generally recognized and accepted until lately. Since these tumors were usually noticed only late in youth, when they attained a considerable size, and since the patients themselves usually considered them an acquired affection, the medical profession had been late in recognizing their congenital origin. Of late years, however, there had been a number of cases recorded in which these exostoses were noted at, or shortly, after birth.

Multiple cartilaginous exostoses were, as a rule, a harmless affection. The disturbances in the wrist and elbow joints were the most bothersome. A few exostoses might, on account of their location, become very burdensome, but rarely dangerous. Those exostoses which locked the joints might be removed. Neuralgia, paralysis, epilepsy, apoplexy, defective hearing, dystocia in labor and rupture of the uterus, exophthalmos, rupture of the popliteal artery with aneurysm formation, and also malignant degeneration had been described. In view of these severe, even if infrequent complications, and the considerable and not infrequent deformities occurring in this disease, the undesirability of the intermarriage of members of exostosis families in the light of Mendel's law should be recognized by physicians and eugenists.

Dr. A. A. Law, of Minneapolis, stated that they had recently found in the Minnesota clinic that it was an absolute impossibility to differentiate these benign conditions in some cases from the extremely malignant osteosarcomata, with a mortality of practically ninety-nine per cent. from metastases. A case in point prompted him to bring up this question. A boy in a football accident was kicked above the left patella. They saw him a month after the accident, when he had a typical fusiform, non-inflammatory tumor, apparently in connection with, or attached to the femur. A series of x ray pictures were taken of the femur, twenty in all. The case was seen by Doctor Mayo and Doctor Moore, and others, who were of the opinion that they could not make the differentiation for the simple reason that the clinical picture presented by the x ray was that of osteosarcoma with feathery trabeculæ about the femur. Exploration was finally resorted to, and the tumor found to be inflammatory. There was a degenerating blood clot.

Dr. Arthur E. Hertzler, of Kansas City, Mo., said that if Doctor Law would bear in mind that the raylike processes in ossifying myositis ran parallel to the fascia and muscle fibres, while in periosteal sarcoma the rays were fanlike, extending from the base of the bone in all directions, and not parallel to the muscle fibres, it would assist in the differentiation.

Dr. Emil G. Beck, of Chicago, had taken different bones and made stereoscopic pictures of them, and through the stereoscope they got very fine points, the three dimensions, and the changes which on a single x ray picture were very diffuse became concentrated. He thought the whole question of pathological specimens, tumors, etc., could be differentiated. They could differentiate a sarcoma from a cyst or inflammatory condition by stereoscopic pictures.

Dr. M. L. Harris, of Chicago, said that there were two other varieties of the so called ossifying myositis. First, it was found practically that the traumatic variety developed at the point where the muscle had a broad attachment to the bone or other organs; in other words, where the muscle fibres came into connection with the bone, there was no periosteum which in any way could play a part in the process. Second, and this was very important in the diagnosis of osteosarcoma, this condition never had a distinct individual growth like a tumor. Therefore, osteosarcomata were always differentiated from tumors by the fact that they never showed a characteristic, individual growth like a tumor, always limited; and when once the foundation was laid, they never showed a progressive tendency; they always showed the original outline in the early x ray picture, and they appeared to enlarge on successive x ray plates, but the original foundation was always laid early, and they did not show a progressive tendency after that point.

Dr. D. S. Fairchild, of Des Moines, stated that a few days ago a youth, twenty years of age, received an injury to the elbow joint. The nature of the injury was not known. The case had been treated as a fracture; it might have been a dislocation, and the elbow joint was kept in splints for some time. The case was sent to a doctor in the community; an x ray picture was made, and the doctor proposed that something should be done at once to the elbow joint to secure good motion. He operated, but the result was not satisfactory. The patient, discovering the several elements in the case, came to Doctor Fairchild of his own accord, and he made the x ray examination as Doctor Fay had shown, which he gave Doctor Fay. In the past, he had a great deal to do with cases where splinters of bone came off in the accident, and these spiculæ could be felt by the examining finger, if large enough to be felt through the soft parts, but since the advent of the x ray they were able to interpret conditions exactly.

Dr. James F. Percy, of Galesburg, operated on a woman, now forty-five years of age, about ten years ago, for an extensive carcinoma of the right breast. She had no signs of recurrence for eight years, and then she returned with pain above the collar bone and extensive swelling of the right arm. Examination showed that the subclavians were probably being pressed upon by this growth, and the x ray revealed a growth coming from the fourth or fifth dorsal vertebra, going up back of the lung and coming up inside of the collar bone. He assumed that this was a recurrence in the bone of carcinoma. A surgical friend gave a bad prognosis, saying she would probably not live more than two or three months. This was two years ago. She had had about 230 x ray treatments. There was no sign of an x ray burn, and at the present time there was almost nothing to be seen of this growth.

Fee Splitting.—Dr. Jabez N. Jackson, of Kansas City, Missouri, in his president's address after referring to the progress that had been made in surgery, took up the question of fee splitting, a practice which had led to several indictments. It induced family physicians to betray the sacred confidences of their trusting patients and referred them to men who were not the most competent, not those who offered the greatest possibility of the saving of life, the preservation of health, but men who paid for the victim. Life risked for money! Was it much worse to take life for money? It lowered the dignity and value of the services of the family physician, who was presumably rendering valued services for nothing, and gave a magnified value to surgery which was presumably receiving all. How much more exalted would be the standing of the

general practitioner if people were taught to value his services in diagnosis and his responsibility in counseling surgery and recommending a surgeon whom they would expect to pay for that service as they would for any other. It should be the privilege of the surgeon to aid the physician openly to secure this just compensation. As a rule, the trusting patient was robbed, paid two fees instead of one, as he supposed. It was also a stepping stone by which incompetent men secured business. It penalized honesty in the young surgeon who was capable, but must sit idly by and starve while his less competent competitor bought the business. It led to many unnecessary operations, with their attendant risk and expense, performed merely because the patient could be induced and had the price. In all it was a betrayal of trust, encouraged dishonesty, bred incompetency, and should in short, be held a crime. He wished to offer two suggestions for added activity of the society: That an added day of the annual sessions be inaugurated as a permanent feature, devoted to clinics, conducted by Fellows of the society resident at the place of meeting. That was for the purpose of enabling them to become better acquainted with the operative work of their associates. The Clinical Surgical Society, several years ago, began the plan of a party trip to some of the foreign clinics every alternate year. These trips had been reported as exceptionally profitable and pleasant. Few of the Fellows belonged to the clinical society. Would it not be equally valuable to them if they could inaugurate a similar custom? The itinerary being varied with each successive trip would in time bring those who went a familiarity with practically all of the work of the world. Such a party would insure a cordial welcome and an assurance of systematized preparation with a wealth of material, so that more could be seen with less expenditure of time than by any other method. That plan should stimulate the breadth of their knowledge and, correspondingly, the richness of their work.

Pericolic Membranes, Resulting from Experimentally Produced Coprostasis.—Dr. Joseph Rilus Eastman, of Indianapolis, stated that anomalous peritoneal folds, wherever and whenever found, notwithstanding their variations in macroscopic and microscopic appearance, were, with respect to their nature and origin, closely related. The frequency of anomalous pericolic folds in the fetus, and the fact of their very common presence in young children, indicated that whatever the fundamental pathological process which caused them might be, this process frequently became operative in embryonal life. However, the actual manner of the formation of such a membrane was not made clear by such observations. It was probable that, in many instances at least, the same pathology led to pericolic membrane formation in fetus and adult, and that reaction to irritation, with or without consequent fusion or adhesion, underlay anomalous pericolic membrane formation in practically all cases. He had experimentally produced pericolic membranes in rabbits by inducing a low grade plastic peritonitis. The mild adhesive peritonitis occurred as a result of the plugging of the large intestine with its own contents. Extreme coprostasis was induced by intermittent ligation of the anus and administration of morphine over a period varying from two weeks to three months. In this manner pericolic membranes, or membraniform adhesions about the colon were produced in eleven rabbits. Care was taken not to confound the normal long flowing mesenteries of the rabbits with membraniform adhesions. As in other quadrupeds, the mesenteries of the rabbits were luxuriantly developed, a single mesentery in some cases enveloping and supporting several intestines. The membranous adhesions which were attributed to the artificially induced plastic peritonitis occurred in cases in which the intestines over extensive areas were held together by plastic lymph. The membranes were brought to view by separating the intestine at the site of imperfectly organized adhesions.

From these observations it appeared that extensive membraniform adhesions might result from extreme coprostasis, and this was exactly as we should expect, for we knew that incarceration of hernia and other forms of obstruction of the intestinal lumen, without visible lesion of the intestinal wall and without strangulation, led to mild peritonitis, fusions, and membraniform adhesions. Such pericolic membranes were not different in histology and origin from similar membranes about the uterus and uterine annexæ, all representing reactions of the peritoneum to irritation.

(To be continued.)

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Treatment of Tuberculosis. Ordinary Therapeutics of Medical Men. By Albert Robin, Professor of Clinical Therapeutics at the Paris Faculty of Medicine. Translated by Dr. Léon Blanc, Physician at Aix-les-Bains, Physician to the Hospital, etc., with the Assistance of H. de Méric, Surgeon to the French Hospital, London. London: J. & A. Churchill, 1913. (American Agents, P. Blakiston's Son & Co., Philadelphia.) Pp. viii-616. (Price, $7.)

Professor Robin's originality gives this book special value, particularly because he considers many topics which, as a rule, are neglected. He lays stress on the fact that the discovery of the bacillus has not as yet ameliorated the treatment of pulmonary phthisis and that therapeutics should also be called into action to improve the soil. This applies to predisposing states as well as to actual phthisis. In turn he then analyzes the influence of hygiene and alimentation on the disease and the various forms of treatment, emphasizing the vast importance of remineralization and describing the manner in which he carries out the process therapeutically. The tuberculin treatment is reviewed at length; he considers it the most active method at our disposal as regards the effects on the tuberculous foci, but one of use only when other forms of treatment prove inefficient or lose their curative power.

Cancer of the Breast. An Experience of a Series of Operations and Their Results. By Charles Barrett Lockwood, F.R.C.S. (Eng.), Consulting Surgeon to St. Bartholomew's Hospital, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1913. (American Branch, New York.) Pp. ix-234. (Price, $3.)

In writing a monograph on so important and practical a subject as cancer of the breast, an author should scarcely

feel justified in confining the work entirely to his own experience, disregarding the work of others and omitting conclusions as to the actual value of the operative treatment. While not necessary to give in a book of this size a history of modern treatment of breast cancer, some mention at least should be made of the names of those who founded the present technic upon pathological studies, and are responsible for the immense improvement in the operative results. In consulting the chapter on the results obtained by this author in his series of cases, one is disappointed to find merely an enumeration of a few cases which have remained without recurrence while the actual percentage of permanent cures is entirely omitted. Such enumeration adds nothing to the statistics which are so important in determining the actual value of operative treatment. In describing the operative treatment too little attention is given to the details of technic which are necessary to a surgeon first attempting this extensive operation. While the book is readable and interesting in giving a general oversight of this subject combined with personal experiences, its scientific value is limited and it will scarcely find a place, either among textbooks for students or books of reference for the general surgeon.

Innere Sekretion. Ihre physiologischen Grundlagen und ihre Bedeutung für die Pathologie. Von Prof. Dr. ARTUR BIEDL, Wien. Mit einem Vorwort von Hofrat Prof. Dr. R. PALTAUF, Wien. Zweite, neubearbeitete Auflage. Zwei Theil. Mit 56 Textfiguren und 13 mehrfarbigen Abbildungen auf 6 Tafeln. Berlin and Wien: Urban & Schwarzenberg; New York: Rebman Company, 1913.

This is an able and interesting, but somewhat large and difficult book, for the mass of science which it presents has almost no literary character at all. There is this obvious and undeniable difficulty in the attempt to form a theory of internal secretions that experiment leads different minds in such different directions. The chapter on the hypophysis in this work is a case in point. Experiments, which end so diversely, however ably compiled, are of little use unless read with the methodical rules of such expositors as Vincent and Sajous. In other respects we have nothing but praise for the extraordinary completeness and precision of the information packed in these two volumes. We have accounts and studies, not only of the early researches of A. von Haller and Henle, but also of the modern works of Schafer, Vincent, Minkowski, Sajous, MacCallum, Ott, and Lusk, familiar to all students of the subject. The whole proceeds with the control of the author's own experiments, a proof if proof were needed, of the mastery with which each section is treated. The bibliography alone occupies 257 pages, all of which is carefully and minutely made use of in the text.

A Compend of Diseases of the Skin. By JAY F. SCHAMBERG, A.B., M.D., Professor of Diseases of the Skin, Philadelphia Polyclinic and College for Graduates in Medicine, Fellow of the College of Physicians of Philadelphia, etc. Fifth Edition, Revised and Enlarged. With 112 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1913. Pp. xv-302. (Price, $1.25.)

The fifth edition of Schamberg's excellent quiz compend has been enriched by the addition of a summary of the recent knowledge gained in the treatment of syphilis, and brief chapters on the vaccine treatment and on the use of carbon dioxide. The text has also been generally revised.

Pathologisch-anatomisches Praktikum für Studierende und Aerzte. Von Prof. Dr. med. RICHARD OESTREICH, Privatdozent an der Universität und Prosektor des Königin Augusta Hospitals zu Berlin. Berlin und Wien: Urban & Schwarzenberg, 1913. Pp. xi-304. (Through Rebman Company, 1913.)

In this small book Professor Oestreich has fully outlined the methods of procedure in pathological diagnoses of all sorts. In the first section he describes the methods of investigating, the technic of autopsies, and the microscopic examination of both fresh and stained tissues. Then there is taken up in detail the macroscopic appearances of the single organs and the microscopic. The third part deals with the underlying factors of general pathology. Although the definitions and descriptions are necessarily brief, they are good; in connection with the use of the larger textbooks this volume would be distinctly useful.

A Textbook on Gonorrhœa and Its Complications. By Dr GEORGE LUYS, Late Assistant to the Urological Clinique, Hôpital Lariboisière, Paris, etc. Translated and Edited by ARTHUR FOERSTER, M.R.C.S., L.R.C.P. (Lond.), Late Resident Medical Officer, London Lock Hospital. With Two Hundred Illustrations and Three Colored Plates. New York: William Wood & Co., 1913. Pp. xix-384. (Price, $4.50.)

This volume covers the subject of gonorrhea in the male in very satisfactory fashion. The consideration of gonorrhea of the eyes and gonorrhea in women and children is too brief, however, to be of great value. The various topics are considered, not only from the standpoint of the author's own experience, but from that of others. Unfortunately in certain instances this leads to a diffuse handling of the subject, which is likely to confuse the reader. The translation is characterized by the slovenliness which we have learned to expect in such volumes. Thus we know what is meant by a "rectoscope," though we do not care for the word. On the other hand, the phrase, "periostitis, osteopathy, and muscular troubles of gonococcal origin," rather appeals to us.

Les Hystérotomies vaginales en obstétrique. Par le Docteur ANDRÉ WILHELM, de la faculté de médecine de Paris, ancien interne des hôpitaux de Paris. Paris: Amédé Legrand, 1913. Pp. 254.

The author of this monograph on vaginal hysterotomy in obstetrical practice describes in a systematic and clear manner the present status of the operation. As the procedure was first recommended and its technic described by Dührssen, in 1896, sufficient time has elapsed to review the experiences of those making use of this comparatively rare operation. The author makes a special plea to his own countrymen, as it received at first general condemnation by French obstetricians. He takes up in order history, technic, operative difficulties, indications, and conclusions. Among the indications a conservative place is given for the operation in that group of cases where the condition of the woman makes Cæsarean section too hazardous, and the condition of the cervix makes rapid dilatation impossible. The conclusion inevitably reached by the reader is that the field for this operation is very limited, but, in fact, in this field the procedure should be regarded as a logical and useful addition to the obstetrician's art. The book is well arranged and the text clear and concise. One has the feeling that the author has come to his conclusions through personal familiarity and experience with this operation.

Interclinical Notes.

The Physicians' Visiting List, published at one dollar by P. Blakiston's Son & Co., at Philadelphia, is as useful as in former years. It contains notes on incompatibility—pharmaceutical not marital—poisons and their antidotes, asphyxia and apnea, the quarantine periods, and pages for a cash account and memoranda. It is printed on good paper and is neatly bound and finished.

* * *

Anatomy and Dissector in Abstract, published in Pittsburgh, is a clever compilation of the author, Dr. Stewart L. McCurdy, and makes an admirable pocket companion for the medical student, if properly used. Proper use means that the first lessons should be obtained from a more complete work and the manual under discussion used only for review. Read in this way, all these abstracts become valuable.

* * *

If you would like to know all about Eurhythmics or the Dalcroze Method of Rhythmic Gymnastics, you can find out by consulting the *Outlook* for January 17th, where Margaret Naumburg explains. Jacques Dalcroze has seized upon an idea of Plato's and brought about its development into a complete system of physical and psychic training which confers poise, attention, and a new susceptibility to beauty of form and sound. We recommend the system heartily through our colleagues to persons who are susceptible only to ragtime and graceless imitations of the tango.

* * *

"The paucity of our therapeutic resources," observed Dr. Ben Trovato with a sigh, "caused me to be grossly de

ceived by a scare headline in last Sunday's paper. I thought I was about to read of a new and invaluable source of x rays or high tension currents when I saw in large capital letters 'New Giant Battery.' Imagine my disgust when I learned that the item was concerned with the engagement of a new pitcher and catcher for some baseball team!"

* * *

Alfred Noyes, in his poem, *Flos Mercatorum*, says among other things of Whittington:

London sickened from the lack
Of water, and he made fresh fountains flow.
He heard the cry of suffering and disease,
And built the stately hospital that still
Shines like an angel's lanthorn through the night,
The stately halls of St. Bartholomew.

* * *

Old Penn Weekly Review for November 29, 1913, published two abstracts of lectures by Professor Morris Jastrow, Jr., one on The Medicine of the Babylonians and Assyrians, reprinted from the *Lancet* for October 18th, and to be published in full in the *Proceedings of the Royal Society of Medicine*, the other on Hebrew and Babylonian Views of the Creation. The first is a valuable addition to our scanty American contributions to the history of medicine, a subject with which every physician should be proud to be familiar and one of greater value to his mental furniture than is apparent on first consideration.

* * *

In *Women's Stories* for January 1, 1914, among other lively tales is one by Elizabeth Newport Hepburn, The Biologist and the Butterfly, which may interest our friends. It is one of the new style stories in which the characters speak out sentiments usually taken for granted—or that used to be taken for granted—among refined people. That there should be such an ass as Maxwell Ferris, highly educated scientist as he is pictured, is hard to believe, while that so unsophisticated a young woman as Hortense Kennedy ever graduated from a fashionable boarding school is absolutely incredible. Young people should not leave such stories lying about, for they are shocking, perhaps even corrupting to an older generation.

Meetings of Local Medical Societies.

MONDAY, *January 26th.*—Therapeutic Club (annual); Medical Society of the County of New York; Psychiatric Society of Ward's Island; Poughkeepsie Academy of Medicine.

TUESDAY, *January 27th.*—Alumni Association of Seney Hospital, Brooklyn; Rome, N. Y., Medical Society; New York Psychoanalytic Society; Metropolitan Medical Society of New York City; New York Dermatological Society; Buffalo Academy of Medicine (Section in Pathology); New York Medical Union; New York Otological Society; New York City Riverside Practitioners' Society (annual); Valentine Mott Medical Society, New York; Washington Heights Medical Society, New York (annual).

WEDNESDAY, *January 28th.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; The Medical Union, Buffalo (annual); New York Society of Internal Medicine; Schenectady Academy of Medicine.

FRIDAY, *January 30th.*—Academy of Pathological Science, New York; Hospital Graduates' Club, Brooklyn (annual); Audubon Medical Society, New York (annual).

Official News.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending January 17, 1914:

Hillman, C. C., First Lieutenant, Medical Corps. Ordered to board duty in place of Captain M. D. Wood. **Turnbull**, S. J., First Lieutenant, Medical Corps. Now in Washington, D. C., on sick leave of absence, will report in person to the commanding officer, Walter Reed General Hospital, Washington, D. C., for observation.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the two weeks ending January 17, 1914:

Cather, D. C., Passed Assistant Surgeon. Detached from the Philadelphia Hospital and ordered to the Great Lakes Training Station, Illinois. **Clements**, Melborne, Acting Assistant Surgeon. Ordered to the Marine Recruiting Station, Chattanooga, Tenn. **Eytinge**, E. O., Passed Assistant Surgeon. Ordered to Naval Hospital, Mare Island, Cal. **Phillips**, E. W., Passed Assistant Surgeon. Detached from the Marine Recruiting Station, Chattanooga, Tenn., and ordered to the Naval Hospital, Philadelphia, Pa. **Short**, W. H., Passed Assistant Surgeon. Detached from the Key West and ordered to the Naval Station, Guantanamo, Cuba. **Webb**, U. R., Surgeon. Detached from the Naval Hospital, Olongapo, P. I., and ordered to the Pacific Reserve Fleet. **Woodward**, J. C., Passed Assistant Surgeon. Ordered to command the Naval Hospital, Olongapo, P. I.

Births, Marriages, and Deaths.

Married.

Enders—Bell.—In Philadelphia, Pa., on Thursday, December 25th, Dr. George J. Enders and Miss Gertrude Bell. **French—Griffing.**—In Jersey City, N. J., on Saturday, December 27th, Dr. Harold Milne French, of Mount Vernon, and Miss Susie N. Griffing. **Herchenroeder—Moss.**—In St. Louis, Mo., on Thursday, January 8th, Dr. Louis C. Herchenroeder and Mrs. Minnie Moss. **Weiss—Margareten.**—In New York, on Sunday, January 11th, Dr. Samuel Weiss and Miss Ella Margareten.

Died.

Braun.—In Newark, N. J., on Friday, January 9th, Dr. Randolph Braun, aged fifty-two years. **Byrne.**—In Southbridge, Mass., on Sunday, January 11th, Dr. Charles Byrne, aged seventy-seven years. **Chase.**—In Morrisville, N. Y., on Wednesday, January 7th, Dr. Diogenes D. Chase, aged seventy years. **Coyner.**—In San Diego, Cal., on Thursday, January 8th, Dr. J. W. Coyner, of Lajolla, Cal., aged sixty-five years. **Croom.**—In Maxton, N. C., on Monday, January 5th, Dr. J. D. Croom, Sr., aged seventy years. **Dantes.**—In New York, on Thursday, January 8th, Dr. Max Dantes, aged forty-one years. **Ellis.**—In Detroit, Mich., on Wednesday, January 7th, Dr. Erastus R. Ellis, aged eighty-one years. **Fehring.**—In Chicago, Ill., on Saturday, January 10th, Dr. William B. Fehring, aged thirty-nine years. **Harvey.**—In Wilkinsburg, Pa., on Tuesday, January 6th, Dr. William H. Harvey, aged thirty-three years. **Helm.**—In Rockford, Ill., on Tuesday, January 13th, Dr. Clinton D. Helm, aged eighty-five years. **Hodges.**—In Atlanta, Ga., on Wednesday, January 7th, Dr. W. J. Hodges, aged sixty-five years. **Malone.**—In Waukesha, Wis., on Friday, January 9th, Dr. Edward W. Malone, aged fifty-eight years. **McCleery.**—In New York, on Monday, January 12th, Dr. Mary J. McCleery, aged seventy-eight years. **Oosterbeek.**—In Chicago, Ill., on Thursday, January 8th, Dr. Johannes G. Oosterbeek, of Bartonsville, Ill. **Peckham.**—In Milwaukee, Wis., on Sunday, January 11th, Dr. George W. Peckham, aged sixty-eight years. **Powlett.**—In Hammond, La., on Wednesday, January 7th, Dr. Stephen L. Powlett, aged seventy-five years. **Raub.**—In Quarryville, Pa., on Thursday, January 1st, Dr. R. N. L. Raub, aged forty-three years. **Raymond.**—In Vinal Haven, Me., on Friday, January 9th, Dr. Hanson Raymond, aged fifty-four years. **Richardson.**—In Cedar Rapids, Iowa, on Wednesday, January 7th, Dr. Emma Richardson. **Sexton.**—In Harnett, Harnett County, on Wednesday, January 7th, Dr. James A. Sexton, of Raleigh, N. C. **Spitzka.**—In New York, on Tuesday, January 13th,, Dr. Edward Charles Spitzka, aged sixty-one years. **Thomas.**—In New Orleans, La., on Tuesday, January 6th, Dr. J. B. Thomas, of Carthage, Mo., aged fifty-three years. **Walke.**—In Ossining, N. Y., on Tuesday, January 13th, Dr. Cornelius Walke, formerly of New York City, aged ninety-one years. **Whray.**—In Golden, Ill., on Monday, January 5th, Dr. C. R. Whray, aged seventy-five years.

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Original Communications.

NEUROLOGY AT THE RECENT (SEVENTEENTH) INTERNATIONAL CONGRESS OF MEDICINE.*

Impressions with Comments on Some of the More Important Subjects Presented.

BY CHARLES K. MILLS, M. D.,
Philadelphia,
Professor of Neurology, University of Pennsylvania.

PERSONNEL AND GENERAL IMPRESSIONS.

Of the many medical gatherings which I have attended the two most instructive and inspiring were the first meeting of the American Congress of Physicians and Surgeons, held in Washington during September, 1888, and the recent (seventeenth) International Congress of Medicine in London, August 6 to 12, 1913. The first had its origin in the progressiveness which was then beginning to stir the profession in all its departments. The second brought together from all parts of the civilized world the most distinguished representatives of medicine, in whose work the inspirations of twenty-five years earlier had found realization. At the Washington congress cerebral localization received prominent consideration, and in the London gathering cerebellar localization was one of the chief topics.

It was a pleasure to those who had had the opportunity of attending both gatherings to see Sir David Ferrier, who had made important contribution to the congress of 1888, presiding with dignity at the meeting of the section in neuropathology in London. Alert and active, always at his post, it must have been to him a peculiar source of satisfaction to listen to the valuable presentations and discussions of such subjects as the functions of the cerebellum, to the elucidation of which he has so largely contributed.

It was a source of general regret that Sir William Gowers and Professor J. Déjerine were both prevented by illness from being present. Resolutions of sympathy and compliment regarding the former were unanimously adopted.

The name and fame of J. Hughlings Jackson, who was so recently removed by death, were recalled with affection and admiration in many personal conversations and in the speeches at the great dinners of the section and of the National Hospital staff, which were important features in the generous hospitality of the occasion. Dr. Thomas Buzzard, vigorous in mind and body at eighty-five years of age, presided at the National Hospital dinner.

Professor Heinrich Obersteiner, of Vienna, was greeted on all sides with the admiration and affection of his colleagues, many of whom had been former students at his celebrated laboratory in Vienna, greetings which he returned with cordial appreciation and to none more than to his former American pupils. Commanding figures in the section in neuropathology were Babinski, of Paris, von Monakow, of Zurich, and Petrén, the distinguished Swedish neurologist; among the Germans Liepmann, Rothmann, Anton, Saenger, Nonne, and Bruns were important contributors and striking personalities, while Italy was well represented by Bianchi, Duraggio and Bastianelli, and Austria-Hungary by Bárány, Frankl-Hochwart, von Eiselsberg, and Jendrassik. England's well deserved position of prominence in modern neurology was maintained and strengthened by the work of such men as Mott, Head, Batten, Purves, Stewart, Kinnier, Wilson, Collier, Holmes, and others, most of them members of the staff of the famous National Hospital. One of the most instructive meetings was that held in this hospital, where a series of cases of unusual interest and value were shown, and where moving picture demonstrations of nervous disease which held the close attention of an overflowing audience were given by Babinski and by Weisenburg.

At the meetings of the section and at the social board, Byrom Bramwell, courtly and dignified, represented the Edinburgh school, that seat of learning so dear to the hearts of graduates of the University of Pennsylvania, whose department of medicine was started on its long career of usefulness and distinction by graduates of the Scottish school.

France was well represented, not only as has been indicated in the discussions, but also by readers of independent papers which were without exception of a high order. Among these contributors were Claude, Léri, Guillain, Jumentié, and Barré. Claude also took an active part in one or two of the discussions. The papers of Foerster, well known for his early advocacy of rhizotomy for the treatment of spasticity, gave rise to an interesting discussion. Muskens, the Amsterdam neurologist, whose contributions on the sensory functions of the cortex are well known, had a good paper on the posterior longitudinal fasciculus. Auerbach and Grossmann presented a valuable contribution on the operative treatment of epilepsy.

America was well represented in the discussion of the myopathies by a paper of great merit from

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our colleague of this society, Dr. William G. Spiller. This contribution, which was received with much approving comment, presented the subject in a comprehensive and illuminating way. The contribution of Doctor Oppenheim, coreporter in this discussion, while brief, contained some points of particular interest and one or two somewhat novel, as, for instance, the inclusion in the subdivisions of myopathies, of myasthenia gravis and paralysis agitans.

Dr. Fred E. Batten, in discussing the papers of Spiller and Oppenheim, presented, with lantern slide illustrations, valuable data and theoretical considerations. Dana, Sachs, Starr, and Elsberg, of New York, Schwab, of St. Louis, and Williams, of Washington, contributed to the section valuable clinical and clinicopathological papers; while A. R. Allen, of Philadelphia, gave the results of his elaborate investigations of the effects of impact in the production of changes in the spinal cord.

In addition to the symposium on the myopathies, four great discussions aroused and maintained the interest and enthusiasm of the section in neuropathology. These were The Symptoms of Cerebellar Disease and Their Significance, introduced by Dr. J. Babinski, Dr. A. Tournay, and Dr. Max Rothmann; Motor Aphasia, Anarthria, and Apraxia, with Dr. J. Déjerine and Dr. Hugo L. Liepmann as reporters; The Nature of the Condition Termed Parasyphilis, with Dr. F. W. Mott and Dr. Max Nonne as the first speakers; and The Treatment of Tumors of the Brain and Indications for Operation, the discussion being opened by Dr. Ludwig Bruns, Dr. Howard H. Tooth, Dr. Harvey Cushing, and Dr. A. von Eiselsberg.

In all of these discussions the number of those who took part was large and included such men as Thomas, Mendelssohn, and Holmes in the cerebellar symposium; von Monakow, Wilson, Bianchi, Claude, and Gutzman in that on aphasia; and Head, Sicard, and McIntosh in that on parasyphilis. The symposium on brain tumors was a joint affair of the section in neuropathology and the section in surgery, including, in addition to the reporters, Babinski, Burghard, Claude, Horsley, Jumentié, Krause, Macewen, de Martel, Paton, Pousseff, Starr, Sicard, Ternon, and Delagénière.

THE SYMPTOMS OF CEREBELLAR DISEASE AND THEIR SIGNIFICANCE.

While it is difficult justly to apportion the values of the different great discussions in the section in neuropathology, one of the most instructive and stimulating was that on the symptoms of cerebellar disease and their significance. It was in considerable part a presentation and discussion of the present status of cerebellar localization. In listening to the able papers of the reporters, Babinski and Tournay and Rothmann, and the discussion by those who followed them, my memory went back again to the American congress of twenty-five years before, at which the discussion of cerebral localization was a chief feature. It seemed to me that cerebellar localization as presented at the London congress was in about the same relative position of advance as cerebral localization at the congress in Washington in 1888. Prior to 1888, particularly as the result of work done during the twenty previous years, the doctrine of motor localization had been given a permanent standing in the physiology of the brain, and considerable subdivision of the motor zone authenticated by experimental and clinicopathological observation had been reached. The zone of speech had been expanded and subdivided so as to cover in a satisfactory manner the phenomena of aphasia for those who had given their allegiance and have since continued to hold to the so called classical views on aphasia. Much, however, remained to be done, not a little of which has been accomplished in the last twenty-five years. The motor zone now pushed forward to a region entirely or almost entirely in front of the central fissure, was then regarded by many as occupying a considerable area of the parietal lobe. The now well known parietal lobe symptom complex was just beginning to be developed. At present the symptomatology of this part of the brain is almost as clearly resolved as that of the motor region itself, and thanks to the impetus given by Marie and Liepmann, the study of aphasia has taken on new life and is leading neurologists into more critical methods of observing and thinking about the phenomena of speech. While much has been added to our knowledge of cerebellar localization during the last twenty-five years, these additions have been chiefly made in the last lustrum, or at least the last decade of this period.

In a paper like that here planned, which is intended to record for the most part simply impressions of the personnel and thoughts suggested by some of the important discussions, space cannot be taken for a detailed presentation of the data and views brought to the attention of members of the section in neuropathology of the congress. This would mean merely a more or less elaborate summary of contributions which in their entirety will no doubt soon hold the interested attention of neurologists everywhere. Fascinated by the wonderful neurological work of the congress, I find myself constantly tempted to reproduce and discuss it, but I shall try instead to limit myself to a mere glance at that which, it appears to me, would most attract the interest of a body like the Philadelphia Neurological Society, which since its organization has had for one of its objects keeping pace with real advances in neurology.

THE PAPER OF BABINSKI AND TOURNAY.

The subject of cerebellar symptoms was approached by Babinski and Tournay from a different angle from that of Rothmann. The former gave an admirable summary of the history of cerebellar research and observation, both experimental and clinicopathological, from the time of Flourens, in 1822, to the present. The parallel drawn by them between labyrinthine and cerebellar phenomena was a fitting introduction to the rest of their paper, which was taken up largely, first with the older classical cerebellar symptom complex, and secondly with the discussion of phenomena strictly cerebellar and, to some extent, capable of special localization; hypermetry and dysmetry, asynergy, adiadochocinesis, tremor, disturbances of writing, disorders of speech, asthenia, atony, cerebellar ataxia, and cerebellar catalepsy. Each of these subjects was treated in a masterly manner, and well it might

be, as some of the symptoms and symptom complexes, were among the discoveries of Babinski himself.

As shown by Babinski and Tournay, the differentiation of labyrinthine and cerebellar phenomena is by no means easy, a few points, however, requiring particular attention. With regard to vertigo, observers differ as to its being a true cerebellar symptom, and the same difference of opinion is evident when nystagmus, so often tabulated among cerebellar symptoms, is under consideration. It is unquestionably true that both vertigo and nystagmus are often present in cerebellar lesions, but the topographical relations of portions of the cerebellum and the vestibular nerve apparatus, as well as the connections of the vestibular nuclei with the deep nuclei of the cerebellum, must not be forgotten. In a structural sense vertigo and nystagmus may be regarded as cerebellar symptoms, if caused by lesions involving within the cerebellum the tracts which unite the cerebellar nuclei with the nuclei of Deiters, Bechterew, and the triangular nucleus. The question for diagnosis would seem to be: Do lesions of any other portions of the cerebellum, of the cortex of any of its lobes or lobules, give vertigo or nystagmic phenomena?

Munk believes that these are not cerebellar symptoms, but that their occurrence in cerebellar lesions, experimental or otherwise, is due to involvement of neighboring parts, especially the labyrinth and vestibular apparatus. Horsley found that nystagmus and turning of the eyes were due to irritation of the white matter near the dentate nucleus and of the nucleus itself. Cocking of the head on one side, Batten believes, is due to a cerebellar lesion of the same side, while Horsley, from his experiments, is inclined to regard the symptom as vestibular. Babinski and Tournay make this point, that while some differences may be made out by close observation and investigation between classical labyrinthine and cerebellar symptoms, one must depend for exact diagnosis on symptoms which belong strictly to the cerebellum and are in nowise connected with lesion or disease of the labyrinth.

Among the most interesting parts of Babinski and Tournay's paper were those on asynergy and ataxia. The reporters recounted the well known previous observations of Babinski on asynergy, bilateral and unilateral, illustrating these by a discussion of the station and gait of the patients examined and by certain experiments with the limbs, especially the lower extremity of the one side, showing that in cerebellar cases, or some of them, distinct motor dissociation is present, for instance, between trunk and lower extremities in standing and walking, or between different sections of the lower extremities in movements of extension of the limb after the thigh has been flexed on the pelvis and the leg on the thigh. The uncertain or disorderly station and gait were shown to be largely due to the tendency of the trunk to hold back while the limbs advanced, or the reverse.

Babinski and Tournay's statements as regards cerebellar ataxia, or so called cerebellar ataxia, were almost as revolutionary in their way as those of Marie with regard to the classical idea of aphasia. They questioned the existence of a true cerebellar ataxia, as a pure symptom, at least. The uncertainty of station is, according to them, largely if not altogether a question of asynergy; hypermetry, tremor, and adiadochocinesis possibly entering into the phenomenon. Their comparison of the cerebellar station and gait with the station and gait of the tabetic ataxic was somewhat convincing in favor of their point of view. Cerebellar ataxia, if the views of Babinski and Tournay are accepted, is to be regarded simply as a disorder of equilibrium, static and dynamic, but not as representing a pure or segregated cerebellar phenomenon. Babinski in his exhibition of moving pictures showed a striking example of cerebellar catalepsy.

With regard to localization, it is instructive to observe that both sets of reporters in the cerebellar symposium, while speaking conservatively as to detail, were decidedly partial to the view that the cerebellum is not, as Luciani held, a homogeneous organ, but a collection of centres capable of being differentiated. Recognizing the cerebellum as, in a broad sense, entirely a motor organ, they held that the concatenation of facts is in favor of special localizations. The motor localization, however, differs in essential particulars from that of the representation in the motor zone of the cerebral cortex. It has relation essentially to a localization of limb, trunk, and head movements which are concerned with the maintenance of equilibrium. The centres are not representative of this or that distinct voluntary movement, simple or more or less complex, but of movements voluntary or semivoluntary, automatic or semiautomatic, which enable the human being to maintain the erect position and walk or perform the other motor functions in a regular and orderly manner; the centres are concerned in associated movements of the head and trunk, or limbs and trunk, or limbs and head and trunk, or different limbs, or different parts of the same limb. They are the centres in large part of reflex antagonistic movements.

The paper of Babinski and Tournay furnished in its data and in the manner in which principles were enunciated, a brilliant illustration of what can be accomplished by persistent and thoroughly conducted clinical work. More than once I have heard some of my Philadelphia confrères, and others of my countrymen not of Philadelphia, deplore what seemed to them to be the fact that clinical neurology had been so well worked that little of value and stimulating interest was left to be noted or discovered. Some of these deplorers of opportunity have indicated their belief that only in the anatomical, physiological, or pathological laboratory could we hope to get anything worth while investigating or considering. And this in the face of the fact that many of the greatest discoveries in neurology, as in other departments of medicine, have been the result of close clinical observation by men who had the keenness of intellect to discover new facts and new methods of interpreting old data.

A GENERAL GLANCE AT ROTHMANN'S PAPER.

Rothmann's report was largely concerned with the presentation of the results of experimentation on the cerebella of lower animals, especially dogs and monkeys or apes; although he did not neglect the important work in human pathology, and, among other things, especially directed attention to the re-

markable investigations of Bárány. As a part of the cerebellar symposium Bárány gave a most instructive demonstration of caloric and rotatory tests for producing nystagmus and other phenomena, as those of dysmetry.

American neurologists reading the paper of Rothmann would be at first somewhat at a loss, unless they were not only acquainted with the embryology and comparative anatomy of the mammalian cerebellum but also had some knowledge of the new nomenclature introduced by Bolk. The anatomy of the human cerebellum, and most textbooks of comparative anatomy used by Americans, do not conform to the terminology adopted by Rothmann in his exposition. This paper, as I have already said, being intended merely to incorporate impressions and suggestions, it is desirable that the reader who wishes to be fully informed on the subject should not only study Rothmann's contribution to the Congress, but should consult directly the work of such investigators as Bolk, Van Rynberk, Elliot Smith, O. Charnock Bradley, and others.

A study of the embryology and comparative anatomy of the mammalian cerebellum will indeed contribute ideas of fundamental importance to the student of cerebellar functions, symptomatology, and localization. I find myself, after considering the contribution of Rothmann and the work of Bolk and others to which he refers, forced to believe that nearly all the published work on cerebellar disease by American and most foreign writers, especially by clinicians and clinicopathologists, is valueless in assisting one in arriving at conclusions as to cerebellar localization. This criticism is quite as applicable to my own work as to that of others.

In the first place, the attention of the neurologist in considering the localization of lesions in his cases of cerebellar disease, has usually been directed in the old fashioned way to a determination of whether or not the lesion present involves the lateral lobes or the vermis, and at the most, the anterior or posterior portions of these subdivisions of the cerebellum; the cerebellopontile angle, however, claiming often particular attention. The study of the mammalian cerebellum in animals below man, shows that the primary subdivision of this organ is not into a vermis and lateral lobes, but into an anterior and posterior lobe divided by a fissure called by most comparative anatomists the sulcus primarius or primary fissure, although known by other names. The posterior lobe in this subdivision becomes in the process of evolution, as man is approached, more and more complex, the anterior lobe retaining much of its original form and simplicity. As Bolk points out, the great distinction between the fully developed human brain and the brains of animals below man, even though close to him in evolutionary series, is in the extraordinary development of certain portions of this complicated posterior lobe, a development which even Bolk speaks of as relatively monstrous. In this fact, it seems to me, is to be found a clue to the physiology of a large part of the human cerebellum. This extraordinary development in the parts referred to must have relation to the work which the human cerebellum is called upon to do in maintaining the erect position of man and in enabling him to carry out the adjustments and adaptations of his head, trunk, and limbs, which give him a dominant position in skillful coordinations of every sort.

ROTHMANN'S RÉSUMÉ OF CEREBELLAR PHYSIOLOGICAL INVESTIGATIONS.

While highly important investigations in the domain of embryology and comparative anatomy were reported by Rothmann, he referred in addition to the results obtained by experimentation on the brains of lower mammals—dogs, monkeys, and apes—especially to extirpation experiments, like cortical encapsulation of a hemisphere, lobe, or lobule, although some determinations of value were reached by electrical irritation of such regions. Rothmann does not believe, as was held by Horsley and Clarke, that the cerebellar cortex is nonexcitable to the electrical current. It is more resistant to excitation, but does respond.

Rothmann called attention to the electrical investigations of Prus, also to the researches of Adamkiewicz and Pagano, all of which were in the direction of determining cerebellar centres for movements of the fore and hind limbs in dogs and centres for equilibrium.

Rothmann summarized the important investigations of Bolk and Van Rynberk, which were in the form of both comparative anatomical observations and physiological experimentation, especially extirpation experiments. Bolk found in the crus primum of the ansiform lobe an unpaired (*unpaariges*) centre for the anterior extremities. By the "unpaired" centre, I take it is meant a centre which controls bilateral movements, that is, a centre on one side or in any position controlling the simultaneous movements of both extremities. In the crus secundum, Bolk found a similar or bilateral centre for both hind limbs or lower extremities. In the anterior lobe—that is, in the parts anterior to the sulcus primarius which corresponds to the preclival fissure in man—Bolk found coordinating centres for the movements of the eyes, tongue, muscles of mastication and expression. To the remaining portions of the mammalian brains studied and experimented upon, he assigned centres for the trunk musculature. Such remainder would seem to include the various portions of the inferior vermis and the so called paramedian lobe, that is, the lobes or lobules situated between the crus primum and the crus secundum and the vermis.

Van Rynberk confirmed in large part the investigations of Bolk, locating also a centre for the negation movement of the head in the anterior lobe. He also determined by extirpation of a portion of the crus primum of the ansiform lobe, a high raising of the front paw on the same side, or "goose step." Dysmetry of the hind paw in running was brought about by extirpation of the crus secundum or a portion of it. Extirpation of the paramedian lobe produced disturbance of the trunk muscles and rolling movements, while extirpation of the lobus simplex in connection with lesions of the crura prima caused very pronounced dysmetry of the forelegs. Other experimenters were summarized by Rothmann in a considerable list.

SOME PERSONAL OBSERVATIONS AND EXPERIMENTS BY ROTHMANN.

Turning now to the personal observations and experiments of Rothmann, these were of much interest and value, partly confirming the results obtained by Bolk, Van Rynberk, Luna, and others and indicating to some extent the number of more or less exact and restricted localizations in the cerebellar cortex. Rothmann found, for instance, that extirpation of the lobus quadrangularis in a region corresponding to a part of the crus primum produced isolated disturbances of the foreleg of the same side, which exhibited themselves especially by lateral displacement of the limb and a dawdling or hesitating walk. Stripping the cortex of the part corresponding to the superior semilunar lobe, similar disturbance in movements of the hind leg resulted, while decapsulation of the inferior semilunar lobe, or its correspondent, and the paramedian lobe caused weakness of the lower regions of the trunk on the opposite side. Extirpation of the whole formatio vermicularis determined a bending and twisting or turning movement of the head toward the same side with disturbance of innervation of the ear of the same side, and a considerable weakness of the trunk muscles with intact position and movement of the extremities.

Bolk demonstrated that in lesions of those sections of the cortex that are turned under the fourth ventricle, especially of the lobus centralis, disorders of the jaw and larynx ensue. In destructions of this sort Katzenstein and Rothmann confirmed the abolition of barking, ataxic movements of the vocal cords limited in their excursion, and a pronounced weakness of the lower jaw which sometimes hangs directly down. Destruction of the cortex of the lobus medianus posterior was shown to lead likewise to an ataxia of the extremities, and to a disorder of the innervation of the trunk musculature which preponderatingly involves the lower section of the body.

According to Rothmann, injuries of the cortex of the vermis always cause combined disorders of the trunk and extremities; and statotonus, noted by Edinger, enters especially clearly into the phenomena.

From before backward in the cerebellar cortex, Rothmann held that there seemed to be represented definite sections of the body—eyes, head, face, jaws, tongue, neck, upper extremities, and lower extremities, and in the posterior median and paramedian regions,—the trunk.

More than this, Rothmann has apparently succeeded in isolating centres within the limb centres of the hemispheres (crus primum and crus secundum) so that in the foreleg region decortication of the lateral section allows displacement of the foreleg outward, decortication of the upper part causes bending and raising of the foreleg, and of the lower part, especially marked dropping of the foreleg. In the same way, in the hind leg region, decortication of the outer part causes displacement of the hind leg outward, of the inner part, displacement inward. These partial deficits, says Rothmann, are to be explained by an abolition of certain antagonistic reflexes of the muscles which normally serve to regulate the statotonus of the extremities concerned, called by Sherrington the proprioceptive reflexes.

I have given only a glance at some of the important data and conclusions in the wonderful résumé of Rothmann. His paper was a masterly one in its comprehensive plan, in its elaboration of details, and in his reasoning on the results of comparative anatomical research, physiological experimentation, and facts obtained through human pathology. To the highly important observations of Bárány, Rothmann, like Babinski and Tournay, gave particular attention, finding them corroborative of his own observations and those of Bolk, Van Rynberk, and the others, to whose experimental work he calls attention.

DISCUSSION OF MOTOR APHASIA, ANARTHRIA, AND APRAXIA.

Among the strong personalities of the congress was Dr. Hugo Liepmann, of Berlin, who presented a paper on motor aphasia and apraxia of much interest and originality. Liepmann, with thrust and parry of assertion and subtle logic, unfolded his theory of apraxia as applied to the study of aphasia. The burden of his thesis was the similarity, if not identity, of apraxia and aphasia—apraxia in its different forms, sensorial, ideational, and motor, with the different so called varieties of aphasia. He held that asphasia could broadly be included in the definition of apraxia, apraxia being not simply the inability to do, but incapacity to understand the method of doing; in other words, the incapacity to apply knowledge purposively.

Illustrating apraxia in its simplest and most easily understood expression by limb movements, he showed, what is well known, that the apraxic becomes more or less incapacitated for using these movements intentionally or purposively. He attempts to light his candle with the match box; he is unable to brush and comb his hair because of his cerebral deficiency, or cannot use his hand for writing, although he knows what he wishes to write and in a certain sense how to write.

Since my return from the congress, I have examined a number of patients at the Philadelphia General Hospital—apraxic hemiplegics—these being sometimes aphasic and sometimes not—with the view of determining the presence or absence of apraxia and the degree of apraxia when this was present, also the special ways in which apraxia was most likely to be expressed. In one case of aphasia (motor or sensorimotor in type) the patient when asked to close his eyes closed his mouth, doing this repeatedly on different orders. When asked to put his hand on his shoulder he placed it on his head. Given a key to lock a door, he introduced this properly into the lock, but failed to turn it in the right direction. Another right hemiplegic and aphasic, when asked to place his left hand on his head, invariably raised the arm and held it flexed at the elbow a short distance from his head. Curiously, all of those examined on one occasion, five or six in number, combed the hair in proper manner, this test having been used because it was one of Liepmann's illustrations.

The ability of the patients to perform movements without the objects which were usually em-

ployed in carrying out such movements, was tested. The patient was asked, for instance, to show his interlocutor how to write his name in the air, that is, by movements of writing, also in a similar way to write easy words like "cat" or "sick" or "door," etc. After having been tested as to his ability to use a key in a door, he was requested to show how he would unlock a door. Similarly, experiments were made as to his ability to indicate how he would eat with a spoon or knife and fork, etc. The results showed inability or impairment of the power to do these purposive acts.

Liepmann, in his exposition of apraxia in its relations to motor aphasia and other forms of aphasia, starts with the fact that the human being is supplied at birth with a sonsorimotor executive apparatus which he can use for many purposes, but which is not endowed with the attributes which will enable him to do the majority of purposive and especially skillful acts. To use Liepmann's own illustration, he says that if one had been raised by a she wolf, as Romulus and Remus were, he would have such limb movements, and movements and abilities in general as could be learned from the she wolf. He would not, like the children raised in human environment, acquire the ability to perform skillful and varied purposive movements in accordance with the higher human acquisitions. In other words, the child adds to his attributes and abilities as the result of imitation of his fellows and of instruction by them. Liepmann had little or nothing to say about inheritance in this relation, but probably assumes an inherited capacity for the acquisition of the higher purposive movements in the human being.

With regard to localization of so called centres, cortical and subcortical tracts in the cerebral zone of speech, Liepmann had not very much to say. He seemed to accept, to a considerable extent if not completely, the classical ideas and data as to such localizations. He argued, however, in favor of the close connection, anatomically as well as physiologically, of these centres with the executive sensorimotor apparatus. The mnestic centres for hand movements, for instance, he holds are before, behind, and in the Rolandic region, and similarly, the speech centre of Broca reaches over into the executive laryngoglossal centres for movement. Owing to the anatomical connection between the centres, mnestic and executive, one of these regions, cortical or subcortical, is rarely injured without the other being involved. Hence, we have the admixture of aphasia with anarthric disturbances. He expressed simply in other words the doctrine of neural (*cerebralsmechanismus*) or that of the diaschisis of von Monakow.

Professor Déjerine, because of illness, was not present at the congress, a fact which was much regretted. He sent, however, his contribution on the subject of motor aphasia, which was read at the section by Jumentié. This paper was a careful and convincing restatement of what might be called the classical view of the subject of motor aphasia, the arguments and many of the data used being the same as those employed by Déjerine in his discussions with Marie, in 1908, after the latter expounded his new views regarding aphasia and mental deficit and his challenging of the part played by Broca's convolution in the function of speech. To his data and arguments as hitherto expressed, Déjerine had added some facts and opinions gleaned from the recent discussions of aphasia.

The first part of Déjerine's essay was an historical résumé of the localization of the function of motor speech in the anterior part of the left hemisphere, especially in the hinder part of the left third frontal convolution. Well known names, like those of Bouillaud, Andral, Broca, Gairdner, Hughlings Jackson, Bateman, Falret, Trousseau, Charcot, Wernicke, Ladame, etc., naturally figured in this part of his presentation. New additional names were added, more especially as the result of the discussions of the subject during the last five or six years.

Taking up anarthria and motor aphasia in connection with the views of Marie and Moutier, his paper contributed an admirable discussion of this subject. The early and first accepted idea of anarthria, as a paralytic affection of speech due to bulbar disease, was dwelt upon, the speaker showing how, as time progressed, true anarthria was seen to be also a pseudobulbar affection due to disease, especially bilateral disease of the geniculate bundles of the internal capsule. He believed that the term anarthria should be restricted to these paralytic affections of speech, bulbar or pseudobulbar. An interesting point was that made with regard to Moutier's enlarged definition of anarthria so as to make it accord with the views of Marie. According to Moutier, in anarthria as recognized by Marie and himself, the patient did not know how to speak, whereas in the anarthria of Kussmaul and many others, he could not speak. Déjerine, regarding this new definition, says that this accepted, his own views would not differ materially from those of Moutier, for the props fall from beneath the Marie contention. In true motor aphasia the difficulty is just this, that the patient does not know how to speak, that although his organs of enunciation and articulation may be in good order, it is impossible for him to use them for the purpose of language.

Déjerine discussed the part played by the lenticula, especially the putamen of the lenticula, in the affections of speech, referring to Broadbent, Mingazzini, Mills and Spiller, and others in connection with this subject. On the whole, he argued against the lenticula playing any real part in speech, holding that in most cases of bilateral lesion of the lenticula, lesions were also present in the internal capsule.

Déjerine also discussed the existence of a speech projection tract separate from the geniculate bundle and somewhat anterior to it. He opposed the views of Brissaud, Raymond, and others, who held to the belief in such separate tract, contending that the cases cited in support of it could not be satisfactorily maintained as corroborated. In connection with this subject, he discussed also the existence of bundles concerned with the transmission of speech impulses, such as have been suggested by the pathological observations of von Monakow.

While paying a tribute to Liepmann's researches on apraxia, Déjerine felt that we cannot fully accept the idea that the phenomena of aphasia could all be translated into terms of apraxia. Apraxics might

be aphasic, aphasics might be apraxic, but aphasia and apraxia were not identical; there was more than apraxia in aphasia.

Déjerine's presentation of the question of the part played by Broca's convolution in the function of speech was as creditable as it was convincing. He showed that the weight of reported cases favored this view, throwing the burden of proof on those who had used presumably opposing data.

THE DISCUSSION OF PARASYPHILIS.

Time can be taken to say only a few words about the discussion of parasyphilis, a subject now attracting widespread attention throughout the medical world. A vein was struck in this discussion different from that in either cerebellar localization or aphasia and apraxia, for vital questions of prognosis and treatment were pertinent to the presentation and consideration of the subject.

Nonne, Mott, and Head were prominent personalities in this symposium—three men who seemed to me, although having different characteristics, to possess powers which have made them justly famous in their special lines of work during recent years. Nonne impressed one as a hard working, clear seeing, and quiet enthusiast, Mott a thoroughgoing, logical British type.

Regarding Nonne's presentation, I shall simply glance at a few points, those which appealed most to me or which I remember best. One of these was the parallel which he drew between affections of the brain and cord and peripheral nerves due to the influence of the trypanosoma, and such so called syphilitic diseases as tabes and general paresis. His reason for doing this was evident, namely, to show how microorganisms with their poisons of a different sort from Spirochæta pallida may attack the substance of the nervous system and produce effects like those due to the acknowledged syphilitic organism. The general tendency of his report was to strike down the artificial barriers which have so long been set between direct syphilis and indirect, that is, parasyphilis or metasyphilis. Clinical and pathological observations were brought to this task in almost equal number—abortive and irregular types of paresis and tabes; findings in membranes, vessels, nerve roots, and in both spinal and cerebral substance in the same and different cases, etc.

That tabes and paresis have been demonstrated to result in cases of infection without primary lesion, as from penetration by an infected needle, and that parasyphilis can probably be produced through spermatozoic infection without the necessity of cutaneous, mucomembranous, or other lesions, were among Nonne's data of especial interest. An important part of Nonne's report was his discussion, largely antagonistic, of the views of those who hold to neuropathic predisposition in cases of syphilitic infection which result in parasyphilitic disease. Most suggestive was his consideration of the view that possibly different biological forms of the spirochæta may be influential in causing direct syphilis of the nervous system on the one hand, and parasyphilis on the other. Toward the close of his paper he made the significant admission that, as he expressed it in good American fashion, "much is still in the air."

Mott's remarks and suggestions as to the parts played by high and low aortitis (topographically speaking) in the development of paresis and tabes were among the interesting points in his paper.

DISCUSSION ON THE TREATMENT OF TUMORS OF THE BRAIN, AND THE INDICATIONS FOR OPERATION.

A wonderful array of surgeons and neurologists was lined up in the discussion of the surgical treatment of brain tumors; Krause, von Eiselsberg, Cushing, Bruns, and Tooth were among the number. The personality and methods of presentation of Von Eiselsberg were charming and convincing. I had the opportunity of talking with him outside the meetings of the section as well as listening to him in the discussion, and was much impressed with the feeling that he was one of the most distinguished of the leaders in modern surgery. It was much to be regretted that Philadelphia surgery was not represented in this discussion, as I feel that, with the exception of von Eiselsberg and one or two others, American neurological surgery is somewhat ahead of that of Great Britain and the continent in matters of technic, in special methods of operating, and in the results obtained. Many of the foreign surgeons, so far as I could make out, still adhere to the old method of using the trephine and rongeur rather than the osteoplastic operation performed with the Hudson trephine and electrical engine and accessories, although regarding this I may not be altogether correct. I am not sure that the methods employed did not partially account for the somewhat unfavorable results of some of the operations reported.

My mind was in antagonism to several of the suggestions offered in this discussion, for instance, to one that practically all cranial operations for tumor should take at least four hours, that is, that the operation should of necessity be slowed down with unusual care until it covered a period of this length. My own view from much interested looking on during brain tumor operations is that every such operation should be performed as rapidly as possible, qualified only by the opinion that safety should not be sacrificed to extra speed.

1000 CHESTNUT STREET.

OIL-ETHER ANESTHESIA.*

An Attempt to Abolish Inhalation Anesthesia.

BY JAMES T. GWATHMEY, M. D.,
New York.

The whole subject of anesthesia is still in its infancy. There is no better illustration of this than the fact that there are nearly a thousand substances (a list of these will soon be published), each of which possesses some anesthetic property. I do not refer to hypnotics or narcotics.

We are thoroughly acquainted with the merits and demerits of only about a dozen anesthetics. References need only be made to notices that appear in the papers from time to time of artisans, workmen, and others in certain trades being overcome and falling asleep at their work, and the necessity of artificial respiration to revive them. Very few of these inhaled substances have ever been ex-

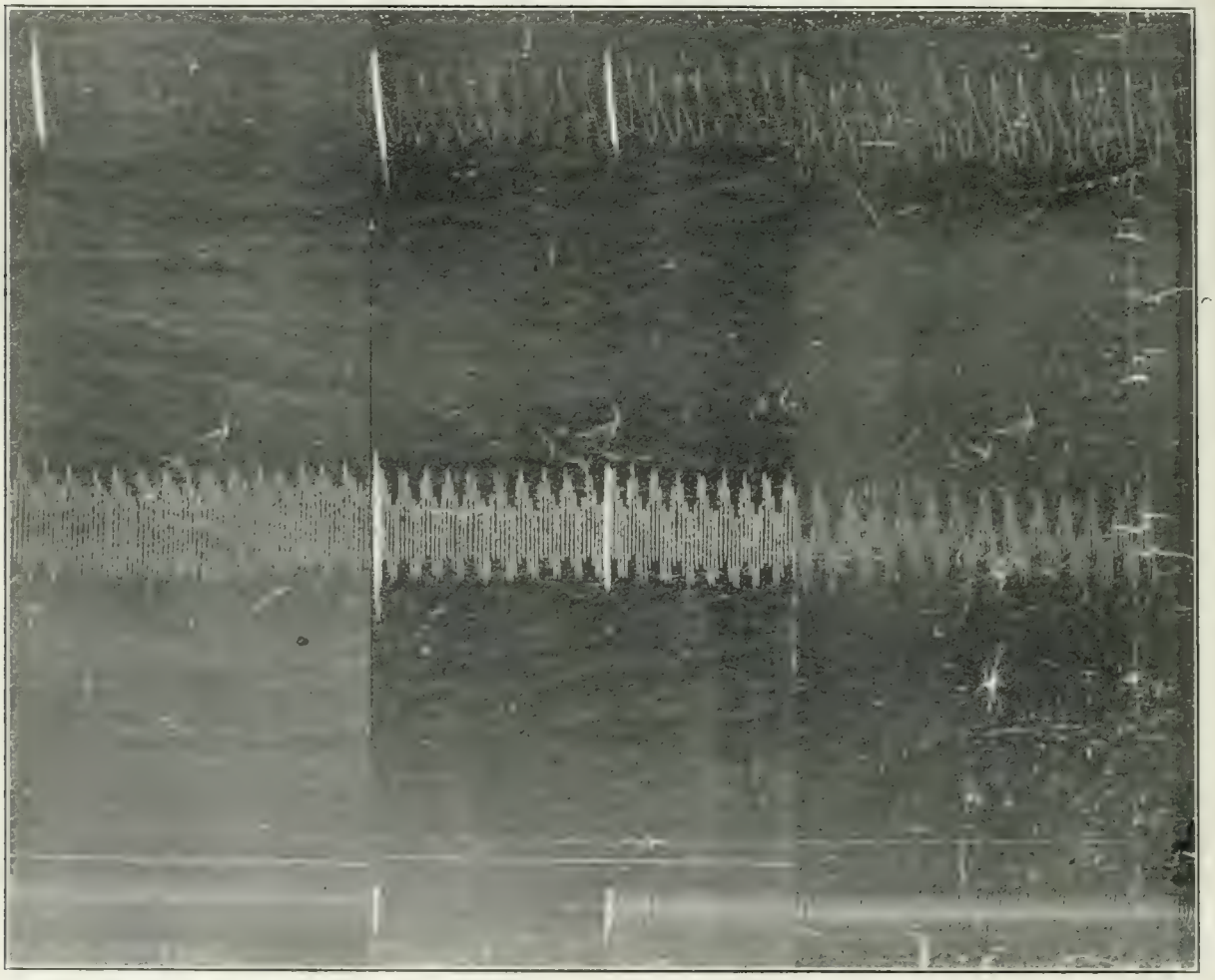
*Read at the Seventeenth International Medical Congress, London, August [illegible], 1913.

amined as to their possibilities as anesthetics. Unquestionably some one in this long list is better suited to our needs in every way than those that we are using daily at present. Only recently hedonal and paraldehyde have come into prominence as systemic anesthetics, either alone or in combination with ether, when used intravenously.

ANIMAL EXPERIMENTS.

All of the experimental laboratory work was conducted under the immediate supervision of Professor Wallace, of the pharmacological department of the University and Bellevue Hospital Medical College. In studying the anesthetic value of ether introduced in solution into the rectum, about twenty-four experiments on dogs have been performed. The method generally employed was as follows: Several hours before the administration of the ether, a saline cathartic was given by a stomach tube; half an hour before, a subcutaneous injection of morphine sulphate (from 0.01 to 0.03 gm.), and immediately before, a cleansing enema of soap and water. The animal was then placed on its back on a holder, and a fairly stiff rubber catheter inserted into the rectum and pushed up the colon for a distance of about ten inches. The ether solution was placed in a bottle with an outflow tube at the bottom attached with rubber tubing to the catheter. The bottle was then raised to any desired height, from one to six feet, and the flow regulated by a screw clamp on this tubing.

In the first experiment performed, a five per cent. ether solution in normal saline was used. About 500 c. c. of this solution was slowly injected into the colon. A very mild excitement stage ensued, and complete anesthesia continued for thirty minutes, gradual recovery then taking place. There was a watery discharge from the rectum during the recovery stage, but no diarrhea on the following day. This experiment was repeated on a second dog under the same conditions, but complete anesthesia was not obtained. I next suggested oil-ether, with the idea of reducing the bulk. Ether is miscible in all proportions in oil. The oil also prevents irritation, and its great affinity for ether prevents a too rapid absorption of the latter; furthermore, when the oil-ether mixture is in the colon, as the ether leaves the oil in gaseous form, heat is extracted from surrounding parts, including the oil-ether mixture and the colon. This cooling checks both evaporation and absorption, and regulates the doses at all times. The difference between the slow absorption from the colon and the rapid elimination from the lungs is the third factor that



Tracings from dog under oil-ether anesthesia. The records from above downward are, 1, respiration; 2, carotid blood pressure; 3, base line at zero; 4, time in half seconds. The anesthesia was begun at 11.30.

assists in automatically regulating the anesthesia.

Experiments in the laboratory of the College of the City of New York, under the supervision of Professor Charles Baskerville, were then made to discover if there was any difference in time in the ether separating from the oils. The oils used were codliver, neatsfoot, paraffin oil, carron oil, and Russian mineral oil; also milk and cream. The same quantity of ether and of the oils was placed in separate test tubes and put in a water bath kept at a temperature of approximately body heat. The carron oil parted with the ether in nearly one fourth of the time of the other oils.

The experimental procedure with animals was then changed in that the ether was given dissolved in oils and in greater concentration: in one experiment in which 100 c. c. of ether in 250 c. c. of olive oil (forty per cent.) was injected into a dog of ten kg., the animal became completely narcotized in one hour, when the whole solution had been injected. The anesthesia persisted with a good pulse and regular, deep breathing for forty-five minutes, when the breathing became short and irregular. The respiration gradually became weaker and stopped fifteen minutes later, death resulting. No effort whatever was made to save the animal. This dog had received a large amount of morphine preliminary to taking the ether.

In two other experiments in which no morphine was given, one dog (weight six kg.) received 150 c. c. of a forty per cent. ether solution, and one (weight six kg.), 190 c. c. of forty per cent. solution. In neither was complete anesthesia obtained. In the remaining experiments, the ether was given in solution in oil from fifty-five to seventy-five per cent., the amount of ether injected being from fifty to seventy-five c. c. Ten successful experiments were carried out, with complete anesthesia and no alarming symptoms.

The shortest time required for surgical anesthesia was five minutes, the longest fifty. The duration of anesthesia after the ether injection was stopped averaged about an hour, except in cases in which the colon was washed out, when recovery set in more promptly. In no case has there been any evidence of more than a mild irritation of the rectum following the ether injection, and this, when present, has passed off within twenty-four hours. A flushing of the colon with a large amount of fluid has shortened the duration of anesthesia, and the subsequent injection of oil prevented or lessened rectal irritation.

Laboratory experiments are still in progress, and it is hoped that they will show more definitely the amount and optional concentration of ether necessary to induce anesthesia, as well as the limits of safety in this method of administration.

Following is the record of an experiment:

Dog, weight 12 kg., given 10 gm. magnesium sulphate in 100 c. c. water by stomach at 10:30 a. m.

Morphine sulphate, 0.02 gm., at 3:20 p. m. Rectum washed out 3:30 p. m.

At 3:45, 125 c. c. ether solution (75 per cent. in cottonseed oil) injected into colon at a pressure of 20 mm. Hg.

At 4:01, complete anesthesia, with no preliminary excitement stage.

At 4:05, rectum washed with water.

At 4:10, recovery beginning.

At 5, animal able to run about.

Slight diarrhea during night and following day.

It is unnecessary for our purposes, as is so often done in introducing some new method or anesthesia, to build up a straw man in order to demolish him. The merits and demerits of inhalation anesthetics are too well known to discuss here. Intravenous anesthesia would seem, at present, to fill a permanent place as a desirable method of anesthesia for certain cases in which inhalation anesthetics are contraindicated.

One of the underlying thoughts in evolving oil-ether anesthesia is to avoid certain dangers that pertain to intravenous anesthesia. The further fact that the only apparatus needed is a small catheter, and a funnel into which to pour the mixture, is a strong argument in its favor.

To a practitioner compelled to work alone, this method of anesthesia would be of inestimable benefit. On account of the gradual and equal absorption of the ether from the colon, and also on account of its rapid evaporation from the lungs, it appears to be at least a comparatively safe anesthesia. Mucus and saliva are absent, and the patient's lungs and stomach are spared. As yet, only ether has been experimented with. Hedonal, paraldehyde, and other substances will be tried out first in the laboratory and then on human beings. The preparation of the patient should be the same as for ether-vapor anesthesia by rectum. This is most important and is as follows:

A cathartic of castor oil should be given the night preceding the operation and followed in the morning by warm water enemas one hour apart until the return is clear. The patient should then be allowed to rest for two to three hours. One hour before the introduction of the mixture, a solution of five to twenty grains of chloretone dissolved in four drams of ether and mixed with an equal amount of olive oil is now given per rectum. Thirty minutes later one twelfth to one quarter of a grain of morphine with one two hundredth to one one hundredth of a grain of atropine is given hypodermically. Twenty minutes after the administration of the hypodermic injection, the oil-ether mixture should be given slowly (at least five minutes) with the patient in the Sims position.[1] The preliminary medication, the percentage and amount of the mixture (roughly, one ounce to every twenty pounds of body weight) varies with the age, size, and general condition of the patient. A fifty to sixty-five per cent. solution is sufficient for children and weak, anemic adults, while a seventy-five per cent. solution is usual with normal adults and should never be exceeded.

The patient should be kept perfectly quiet, not being permitted to talk, and about twenty minutes allowed for the anesthetic to take effect before the patient is moved. Eight ounces of the seventy-five per cent. mixture will last from two and a half to three hours. If the operation is completed before this time, two small rectal tubes are inserted and as much of the mixture is drawn off as possible. Cold water soapsuds are now injected into one tube and drawn off through the other and one rectal tube then withdrawn. Two to four ounces of olive oil

[illegible] the patient [illegible] justed sheets. The patient lies on the left side in perfect comfort, in marked contrast to the disagreeable supine position required for [illegible]

is now introduced in the rectum, followed by one pint to one quart of water, and the second tube is withdrawn. The patient recovers consciousness in fifteen to thirty minutes after this procedure.

The course of the circulation of the ether in the blood when given by this method is somewhat different from that when the gas is inhaled. The ether is obliged to pass through the lungs before reaching the brain. Consequently a loss is sustained unless a small bag for rebreathing is placed over the face. A large sterile paper bag placed over the face and head, and held in place by a rubber band, would answer all purposes.

HOSPITAL EXPERIMENTS.

The principle governing us in our hospital work is to keep well within the limits of safety. We did not immediately proceed with human beings from the point at which we were successful with laboratory experiments. In the first series, patients were given a forty per cent. oil-ether solution, with a negative result in every way. The next series received a fifty per cent. solution, but with only negative results, although as much as nine ounces of oil with the same amount of ether were injected at one time.

In the final series the patients received from sixty-five to seventy-five per cent. solution of oil-ether—exactly the same percentages that were found useful in animals and with equally gratifying results. From 200 to 300 c. c. of a mixture of three parts of ether to one part of oil seems to be about the right amount, although too few experiments have been made to permit dogmatic assertion at this time.[1]

The resulting anesthesia is ideal—pulse and respiration normal, no mucous rales, and no after-effects, as regards either nausea or diarrhea. If further experience proves this method practical, it is capable of development in three ways:

1. As a distinct method.
2. In connection with some inhalation anesthetic, as gas and oxygen, or ether, or chloroform.
3. In connection with novocaine or some other local anesthetic, increasing materially the field of local anesthesia.

40 East Forty-first Street.

LARGE GALLSTONE PASSED PER VIAM NATURALEM.

Report of a Case.

By H. J. Novack, M. D.,
Philadelphia.

Post mortem reports show that, in some cases, even very large stones have passed per viam naturalem, as the gallduct has been enormously distended, its orifice admitting the finger freely. This occurrence, however, is extremely rare, and renders the following case interesting.

Case. Mrs. Catharine M., aged sixty-three years, housewife. *Family history:* Father died at seventy-five years. Mother died at seventy-four years. No history of gallstones or malignant disease in family. *Past history:* Had always been well. Had ten children, all normal births. Ever since ten or eleven years ago, was troubled with constipation and occasional cramps of moderate severity. During the past year, had five or six attacks of cramps, but none severe enough to confine her to bed. Cramps became rather severe and she was in bed all day previous to time when stone passed. Had a constant desire to go to stool and bowels would move slightly. Early the following morning, while at stool, she heard something very solid drop from her bowels and it proved to be the large stone described below.

The stone is 2.625 inches in length, 3.5 inches in circumference, and weighs 324 grains. The centre is composed almost entirely of pure crystalline cholesterin, while the several outer layers are of cholesterin and bilirubin calcium.



Fig. 1.—Gallstones, full size.

It is now two and a half years since stone passed and the patient is in good health today.

Rokitansky believes it possible, on account of the great power of dilatation of the common duct, that even stones the size of a hen's egg may pass the ostium duodenale choledochi. Roth maintains that such seeming dilatations are really typical perforations of the common duct, these being usually situated from five to ten mm. above the ostium duodenale, and in these perforations the upper portion of the portio intestinalis ductus choledochi communicates with the descending part of the duodenum. The greatest dilatation of the ostium duodenale produced by gallstones had, according to Roth, the diameter of a medium sized pea. He does not believe it likely, therefore, that stones of greater dimensions reach the intestines naturally.

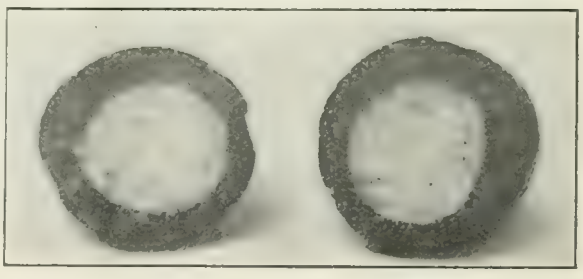


Fig. 2.—Cross section, natural size.

Large stones, which reach the intestine by perforation of the common duct or the gallbladder, may produce symptoms of occlusion, and either soon after their entrance or a long time afterward, even weeks, months, or years, severe symptoms of intestinal stenosis may appear. After prolonged retention in the intestine, owing to peristaltic and antiperistaltic movements, they may become fixed in some portion by spastic contraction, either in the duodenum, jejunum, or ileum, usually in the ileocecal valve. Large stones may also reach the cecum

[1] Since the preceding was written the method has been employed in over 200 successful cases. In half of this number a supplementary inhalation anesthetic was used, the oil ether anesthesia proving too light in these particular cases

and the large intestine after dilatation or ulceration of Bauhin's valve (ileocecal). In this manner stones even the size of a hen's egg may be discharged with the feces.

Elsner (*Medical News*, February 5, 1898) reports a case in which a tumor existed in the pyloric region fifteen months, which was generally thought to be cancer. It was afterwards shown to have been caused by an enormous gallstone, which ulcerated through into the duodenum and brought on symptoms of intestinal obstruction. A stone weighing 368 grains, 5.5 inches in circumference, and three inches long, passed with some difficulty through the rectum. It was composed almost altogether of cholesterin. Eleven months afterward the patient passed another stone weighing 240 grains.

The case of Mrs. Catharine M. is unique from the fact that at no time were the symptoms characteristic, until the stone was passing the intestines and rectum, when they were only slightly accentuated.

3143 Diamond Street.

MENTAL DEFECTIVES.

By Howard A. Knox, M. D.
Ellis Island, N. Y.,
Assistant Surgeon United States Public Health Service

For the purpose of legal requirement we consider all defectives at Ellis Island as falling under three heads, namely, idiot, imbecile and feeble-minded, but for scientific purposes and for our own personal satisfaction, we recognize and study the following classes:

1. IDIOTS.

(a) Profound: Those who are mere automatons, who can never be trained in the slightest degree to help themselves or any one else.

(b) Superficial: Those who can be taught to attend to themselves slightly, whom we are often able to teach to put a piece or two into the large form board and to obey a single command.

2. IMBECILES.

(a) Low grade: Those who can help themselves and perform the simplest performance tests; who use a few sentences speaking of themselves in the third person and who withal have a bestial temperament.

(b) Medium grade: Those who perform the large form board and the author's imbecile test, who can count and reckon from memory. This class can perform routine manual labor of a simple nature. They may be facetious.

(c) High grade: Those who are unable to do any performance tests that require constructive imagination and native originality, but can perform nearly all of them after being shown once. Their memories are at times phenomenal and they can learn nearly anything by rote. Some are mathematical and musical "savants." They have "holes" in their intellect, being totally unable to do certain simple things. They can be trained along intellectual lines. There may be a genius for evil (see Fig. 7).

3. FEEBLE-MINDED.

(a) Low moron: Those possessing a slight amount of natural ability and possibly talent along one line, which talent usually lies dormant and is never fully developed. They are capable of considerable development.

(b) High moron: Those possessing ingenuity and native ability but lacking chiefly in the judgment sphere. They are slow to learn. This type is seen in college in the fellow who requires two years, where the normal student requires but one, who has to spend twice as long to get a lesson as the average, who is unable to use his education after he acquires it, and who later in life is a universal misfit.

4. CHARACTEROLOGICAL FREAKS.

(a) Vagrant type: Those who wander aimlessly over the globe in search of an intangible something that they cannot name. They are ne'er-do-wells.

(b) "Cranks," political, religious, etc: Those who are not actually insane, but who may have recovered from some psychosis in the past with more or less permanent deterioration, loss of mental balance, impulsiveness, and other temperamental aberrations. Old dementia præcox may be the factor here; there is certainly bad heredity in nearly every case and these are just the persons who beget the insane and epileptic (see Fig. 8).

5. EMOTIONAL AND VOLITIONAL DEFECTIVES.

(a) Emotional: Those who are easily influenced by their environment, who laugh when others laugh, who cry when others cry, and lament and become flighty at the first adverse event or minor disappointment.

(b) Volitional: Those who are stubborn, morose, independent, quarrelsome, even though they know these attributes are deleterious to their best interests; in other words, they have not the will to conceal their shortcomings before they leave the examiner. Intellectually the emotional and volitional defectives may be normal, but they are feeble-minded in the emotional or volitional sense, or both, and they should be denied admittance to the country, since they are almost always morally defective also.

In making a diagnosis of mental enfeeblement the history is of very great importance, but unfortunately in our cases a complete history can seldom be obtained. The relative importance of the various historical elements can well be judged from the history and alleged cause in each of 2,380 cases of mental enfeeblement at the Darenth and Royal Albert Asylums in England[1]. There was a *family history* of phthisis in 674 cases; of insanity in 392 cases; of imbecility in 117 cases; of epilepsy in 207 cases; of other neuroses in 269 cases; of intemperance in 390 cases; of syphilis in 28 cases; of consanguinity in 100 cases.

There was a history of abnormal conditions in the mother during gestation: of abnormal physical condition, 125 times; abnormal mental condition, 586 times; of senility, 3 times; of illegitimacy, 42 times.

[1] Tuke, D. Hack. *A Dictionary of Psychological Medicine*, [illegible]

Given as causes acting at birth are the following: premature birth, 82 cases; primogeniture, 492 cases; prolonged parturition or protracted pressure, 339 cases; instrumental delivery, 79 cases; asphyxia, 153 cases; accident at birth, 36 cases; twin birth, 23 cases.

Given as causes acting after birth are the following: convulsion, 652 cases; epilepsy and cerebral affections, 193 cases; paralyses, 22 cases; head injuries, as falls and blows, 147 cases; mental trauma (fright, etc.), 73 cases; sunstroke, 13 cases; acute infectious diseases, 142 cases; forced education, 4 cases.

Much fun has been indulged in at the expense of the doctrine of prenatal influence, but so far as mental enfeeblement is concerned, it certainly is a factor to be reckoned with. Mental shock and strenuous physical labor or strain, in mothers not well equipped to stand these things, may produce mental deficiency from strains of stock that are not markedly dominated by such predisposition. As for the cases often reported, where an expectant mother has been frightened by some animal and then has brought forth a child marked by resemblance to such animal, I can only say that some well authenticated instances are on record. Defectives have been born after such experiences where absolutely no other etiological factor could be discovered.

Alcoholism in the parents is a potent cause of weakmindedness, especially when one and sometimes both parents were almost continually intoxicated about the time of conception. The observations of Dr. E. H. Mullan of the Public Health Service lead him to believe that confirmed alcoholics are the parents of defective children more often than they are of normal ones. Marcé reports a particularly convincing case of an inebriate who married at successive periods of his life two normal women. The first bore him sixteen children, fifteen of whom died in the first year of life, and the sixteenth was an epileptic and lived. The second woman bore him eight children, seven of whom died of convulsions and the eighth of tuberculosis.[1]

Parents whose personal and family history is free from alcoholism and all definite forms of psychosis and neurosis may be the possessors of personal characteristics which indicate that they are capable of transmitting mental instability and enfeeblement to their offspring, and that certainly, in two or three generations hence, there will be such among their descendants if good blood is not added. Such characteristics are cyclothymia, frequent attacks of depression, nerve storms, poorly controlled grief, temper yielding to minor excitations, untimely mirth, various forms of sensual morbidity and perversion, sullenness, hysteria, chorea, sick headaches, hypochondriasis, genius, the constant use of the same bywords, the formation of strong habits, pronounced likes and dislikes, normal paranoid systems, and other characteristics of this stamp that brand the possessor as "queer" among his associates. First come these ill defined entities in one generation, in the next two or three come definite psychoses, and in the generations succeeding those with the psychoses come actual organic diseases of the central nervous system and extinction of the line, unless unions are formed with the healthier stock. It is in this way, perhaps, that Nature adjusts herself, and it is for this reason, perhaps, that we are not all insane or defective. In fact, I think the fear of social pollution and degeneration is somewhat fanciful as well as real. Before leaving the subject of etiology I wish to go on record as stating that syphilis is a very minor cause indeed of feeblemindedness, because the races that furnish us with the most mental defectives at Ellis Island are the ones that have the least syphilis among them. Among the thousands upon thousands of persons I have seen stripped and examined at Ellis Island in the last year and a half, I have seen less than ten cases of syphilis.

In diagnosing mental enfeeblement in the higher and more refined grades, the most important test after all is the "human test," or the ability of one human being to take the measurement of another by conversing and associating with him. This intuitive ability can be very highly developed in persons of strong personality and physique. The physique is necessary; since it is well known that, all things being equal, the subjects of examination will divulge themselves more readily and more truthfully to the examiners possessed of generous proportions than to others. The ability to take this mental measure must be founded on the experience of having seen and examined many positive cases and the examiner must be a broadminded, big souled man with a keen insight into the frailties and shortcomings of the human race in general, including himself. At the various ages in the lives of defectives there are definite signs that may be observed and which should aid one in forming a correct conclusion. An infant may be excitable, or quiet and apathetic; its eyes may be rolling about in an aimless stare; it may be slow in learning to sit up, to walk, or to use its hands; it may be slow to recognize objects and it may not respond to caresses; it may be restless and irritable and refuse to be pacified; it may sleep long and fitfully and there may be fibrillary movements of face or limb during sleep as well as enuresis and drooling, both when asleep and awake. The drooling and the failure to grasp the nipple properly are due to lack of muscular tone, prognathism, defective reflex mechanism and hyperemia of the salivary glands, all of which with general muscular incoordination are concomitants of the mentally inferior. In these infants the digestive apparatus may be defective, there may be frequent causeless emesis, diarrhea, defective hearing, and delayed speech even to the seventh year. Speech impediment is a common sign in the lower grades.

When the child gets older and finally learns to walk, it will be observed that the walk is halting and slouching or, as one defective said to me about another, "he has a gait like a pair of bars." This peculiar gait is due to the muscular incoordination and deficient reflexes. Normal children are usually active and buoyant, whereas the defective may be afflicted with a general inertia, sullenness, and apathy that is altogether unnatural at his time of life. The child may be flighty and changeable, frequently indulging in silly laughter and chat-

[1] [illegible]

ter. When the defective approaches the school age he may demonstrate either backwardness or precocity; his features may lack individuality; his head may be malformed, large or small; the mouth may be coarse and expressionless; the teeth decayed; the perspiration and the breath may have a foul odor; skin diseases, parasitic or otherwise, are common; fractures and epiphyseal separations of the long bones occur frequently. Isolated events are easily retained, but the concrete facts of the schoolroom are beyond these children.

Ethnological types are frequently seen among the defectives at Ellis Island; the Ethiopian types are seen with their thick lips, dark skin and curly hair; the American Indian type with their deep set eyes and high cheek bones and the Mongolian types with their coarse skin and slanting eyes. Cretinoid cases are frequently seen, but they are too well known to be of interest in a paper of this kind.

In defectives as a class the generative organs are fully or overdeveloped. The moron, high or low, may resemble normal persons in every physical way and, in fact, beauty types and perfect physical specimens often occur among them; instances of this may be seen among chorus girls and soldiers. In traveling upward in the scale of defectives the high moron is the nearest to normal, but a brief study of him will disclose the fact that he is very amenable to suggestion, evil or otherwise, that he is easily influenced and, like a chameleon, partakes of the "color" of his surroundings. Asymmetry of the face is usually present, along with defective vision and hearing and, possibly, lefthandedness; in fact, where poor hearing and vision are combined with mental enfeeblement, I am of the opinion that in most cases, at least, the infirmities are due to the deficiency and not the deficiency to the infirmities, as certain eye specialists would have us believe, and I doubt very much if any case of moral obliquity was ever cured with a pair of glasses. The defective I have just been speaking of is the common school dunce, or member of the ungraded class, his attention and concentration are limited and he easily becomes fatigued and confused when attempting mental exercise. However, he makes a good soldier or manual laborer where little resource is needed, and might after all fill a useful place in society were it not for the fact that he begets individuals of lower ability than himself. It must not be forgotten that there is another type of higher defective who, instead of being confused and fatigued by mental effort, is capable of any amount of it, who can acquire knowledge by working about twice as hard as other people, but who unfortunately, after he does so acquire it, can make no use of it. The faculty of judgment and reasoning seems to be almost wholly missing. On a par with these individuals are the "savants" who are mentally onesided and who have an inordinate ability in one direction only; they may have been precocious in infancy, saying remarkable and unusual things. The special ability may be along the lines of art, mathematics, science, or languages. It is here that we find genius and with it, forever and always, queerness. Because of lack of ability for the management of practical things, these defectives or geniuses, call them what you will, are usually in financial straits and are ne'er-do-wells, crowded and pushed through life, little understood and less appreciated.

For the working tests used in the diagnosis of the mentally deficient, beside the ones shown here, I wish to refer the reader to the "Human Test" used by Dr. Max Schlapp at the Clearing House for Defectives at the Post Graduate Hospital, New York city (one should see Doctor Schlapp work to appreciate this test); to the tests used by Healy of the Chicago Institute for juvenile delinquents; and our own tests used at Ellis Island and described in the NEW YORK MEDICAL JOURNAL for September 13 and 20, 1913; and lastly to the Simon-Binet and the Di Santi tests. The Binet test, quite widely known and well advertised at the present time, should be taken most decidedly with a grain of salt. We have frequently been asked if we used the Binet test in our work at Ellis Island, and if not, why not? We have answered this by saying that we only use it in working with educated persons or those that have been "exposed" to an education, and that if we did use it, about seventy-five per cent. of our immigrants would appear defective, and that it would be wider sweeping in its effects than the illiteracy test in a bill to restrict immigration which President Taft vetoed, shortly before he went out of office. In short the Binet test is an arbitrary and artificial scale that was derived from experiments performed on French school children, and hence inapplicable to all illiterates. Let us consider the Binet requirements for six, seven, eight and nine year old children and the shortcoming of these requirements when used with even adult illiterates.

Six year requirements: 1. Show right hand and left ear. 2. We get up in the morning; after breakfast we work; at night we go to bed. 3. Choose prettier? 1 and 2, 4 and 3, 5 and 6. 4. Define fork, horse, table, mamma, chair. 5. Put keys on chair; shut door; bring box. 6. How old? 7. Morning or afternoon?

Of these seven elements the alien illiterate subject can do all without difficulty, unless it be the repetition of the three thought sentence, and the difficulty here lies in accurate interpretation and, I may say, intelligent interpretation.

Seven year requirements: 1. Sees picture lacks eyes, nose, mouth, arms. 2. Fingers right hand? Left hand? Both? 3. Writes from copy. 4. Can copy diamond. 5. Repeats 4, 7, 3, 9, 5. 6. Describes picture (III, 4). 7. Counts 13 cents. 8. Knows cent, nickel, dime, and quarter.

Of these eight elements, 1 and 2 are easily accomplished, but the subject cannot write and has never had a pencil in his hand, so he can do nothing with 3. The numbers in his language may have more syllables than ours, hence 5 will be more difficult for him. Six can be done if pictures of the individual's environment are available. Seven can be done easily, but 8 not as a rule, because many of the peasant classes in Europe have never handled the different coins of their country.

Eight year requirements: 1. Reads: time (45 seconds). Remembers. 2. Counts stamps 1, 1, 1, 2, 2, and 2. 3. Recognizes red, blue, green, and

yellow; time (6 seconds). 4. Counts backward 20 to 1; time (20 seconds). 5. Writes from dictation. 6. Butterfly, wood, paper, fly, glass, cloth.

Of these six elements 1 is obviously impossible. 2 can be done. 3 can be done, but not in the time allotted. 4 can be done, but not in twenty seconds by all aliens, because of the greater number of syllables in their numbers. 5 is obviously impossible. As for 6, the difference between these various objects can be elicited, if the meaning of the word "difference" can be brought into the illiterate's consciousness and he can be made to understand it. In many cases they have no such word in their limited vocabulary.

Nine year requirements: 1. Knows the date. 2. Repeats days Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday. 3. Makes change 25 cents minus 9 cents. 4. Definitions (see VI, 4).

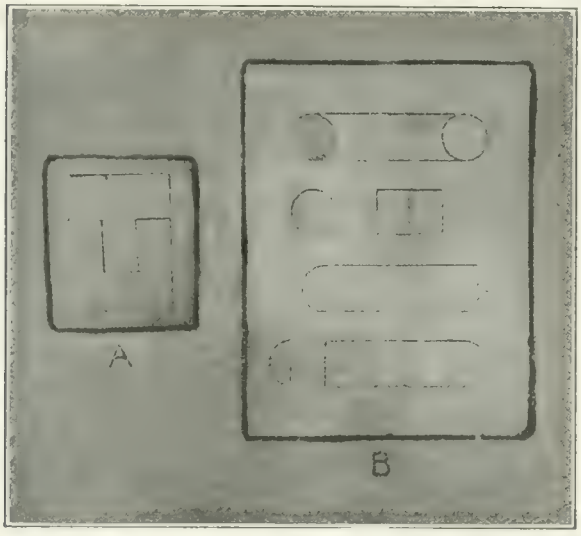


Fig. 1.—Card used in testing defectives at Ellis Island, N. Y. (*a*) See Moronism and Ignorance Knox, New York Medical Journal, September 20, 1913. (*b*) Seguin's Form Board. (*c*) See illustration herewith of Healy picture. (*d*) See Test for Six Year Old Normals and Imbeciles, Knox, New York Medical Journal (soon to appear). (*e*) See Two New Tests for the Detection of Defectives, Knox, New York Medical Journal, September 13, 1913. (*f*) Five blocks of graduated sizes with which the examiner constructs a figure and exhibits the same to the subject, who looks at it for thirty seconds and is then required to build the same figure. This test roughly corresponds to Binet's seven year requirements. (*g*) Simple addition of like numbers under ten, such as 6 plus 6, and after each like set of numbers one of the numbers is increased or decreased by one, as 6 plus 7, or 6 plus 5. If the addition is only memory, only like numbers can be added; if the subject is thinking and really reckoning, the increase or decrease of one will make no difference to him. (Mullan's addition test.) (*h*) This refers to a story containing five separate actions about something with which the subject is familiar; the story is related to him and he is then asked to repeat as much of it as he remembers. Remembering less than three of the thoughts or actions constitutes a failure. (*i*) In certain cases after the subject has failed on a given test the performance of the test is demonstrated to him after which he is expected to perform it at once without error. (*j*) Space for additional test or remarks.

5. Has six memories (VIII, 1). 6. Arranges weights 1, 2, and 3.

All are possible here for illiterate adults of experience, and all are nearly impossible for illiterate nine year olds of the classes we see at Ellis Island, and furthermore would be decidedly unfair if used.

Eminently fair to the average illiterate alien (if educated and he fails, the defect is more glaring) are the tests and questions named on the examination card shown (see Fig. 1). The information elicited by the various tests, especially when used by the men who use them most, could be accurately conveyed only in a monograph on each test. The mere fact of putting the pieces in their proper places is but one small factor; the methods used, the mistakes made, and their nature are everything.

A popular idea exists in certain quarters that the Public Health Service Officers at Ellis Island pretend to diagnosticate mental conditions on the primary line inspection by merely looking at an alien; this is a mistake save in so far as the facts of facial asymmetry, dullness of countenance, lack of expression about the mouth and eyes, etc., and the various reactions of the insane, are objective indications of defect. The greatest knowledge is obtained from questioning each and every alien, and noting his reaction thereto, as well as the answer he gives, and of all the questions used those in simple arithmetic are of most service in detecting mental enfeeblement. Special questions tending to bring out delusions, hallucinations, and insane ideas, are asked for the purpose of detecting psychoses. The pupillary reflexes, facial muscles, station, and gait are observed in the case of each alien, to bring out organic disease. In fact, if a given alien is predisposed to nervous or mental troubles, the trip across in the steerage is usually sufficient to evolve the condition into a recognizable form. The foregoing factors are all considered in the primary, superficial, line inspection; aliens showing suspicious signs here are sent inside for a more thorough



Fig. 2.—"A" = Healy frame and "B" the author's diamond frame test for defectives. The first is one half by three by five inches, the second is one half by four and three quarter inches on each side. They are referred to at "a" and "e," respectively in Fig. 1. The first is a ten to thirteen year old test and the second is accomplished by the normals from eleven to thirteen years old.

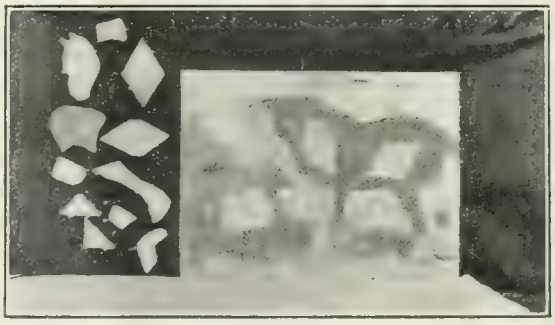


Fig. 3.—The Healy Picture: This consists of a picture taken from a child's picture book; sections of the animals are cut out on the lines of the animal. The whole picture is pasted on a wooden back and the sections are cut out with a scroll saw. There are other sections besides those of the animals, but they are all easily put in place with the exception of the two right angle triangles and this one factor is the only hard part of the test. This test is of great service in examining agitated, nervous persons or children, since they are usually familiar with the horse and the test looks easy of solution, thus encouraging them and renewing their waning hopes. Nearly all immigrants who have required over four minutes to put the sections of this test in place have been found to be defective mentally by the other routine mental tests.

Dr. Matthew K. Gwyn, of the Public Health Service, who is doing special work with this test at Ellis Island, informs me that all aliens who are unable to perform this test in two minutes should be detained and examined further, and that of a large series of cases nearly all that required over five minutes to put all the pieces in place were later certified by the other tests for defectives as "feebleminded" and were deported as such. Doctor Gwyn further says that defectives above the middle grade of imbecile will have some success with the test, enough to give some idea of their ability. The size of the Healy Picture is eight by twelve by one quarter inch.

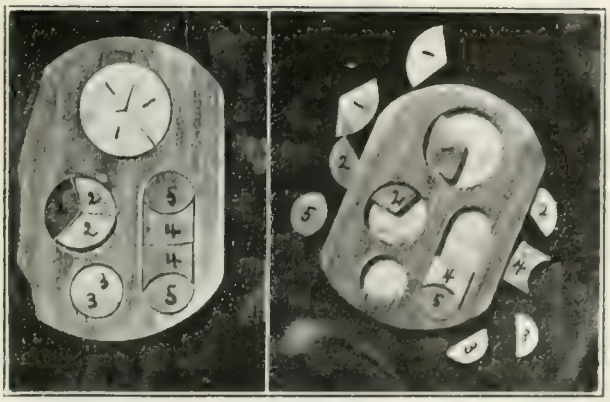


FIG. 4.—The author's "casuist" test. A test of native ability and ingenuity. Normals of eleven years or older should put the sections of this test in place in less than five minutes with not over five false moves. The test is made of hard wood, filled and polished; it is one half inch thick and eight by twelve inches in size. Each piece should be numbered in order to insure accuracy and uniformity in scoring. If piece 2 is put into the space for 5, then that mistake is recorded as 2/5, the number of the misplaced piece being the numerator of the fraction, and the number of the piece that belongs in the space, where the misplaced piece was put, is the denominator. A repetition of this mistake would be recorded as 2/5, 2, and if repeated a third time 2/5, 3 and so on. The mere performance of the test is of no credit to the subject if he makes a large number of senseless mistakes and repeats them.

Dr. H. C. Cody, of the Public Health Service, is using the casuist test in experimental research among both normals and the mentally deficient, and to him I am indebted for many useful working data regarding this test.

secondary examination, both physical and mental. When one officer has two or three hundred immigrants to examine secondarily for feebleminded-ness in about two hours, the most valuable and rapid tests are simple addition, counting backwards, and the cube imitation test. (See Fig. 6, NEW YORK MEDICAL JOURNAL for September 20, 1913, p. 564.)

The simple addition used is a part of Dr. E. H. Mullan's addition test for defectives. In illiterates, especially, he takes advantage of an ingenious principle in placing six plain cards in one pile and six more cards of the same kind in another pile, the latter in serrate arrangement so that all can be seen. He then directs the subject to ascertain the number of cards in each pile, and that there are twelve in all. Mullan then adds one card to one pile, making an odd number for the answer; he then adds one card to the other pile, making an even number for the answer, and so on until there are ten or more cards in each pile. He has found that illiterate normals, over ten years of age, in most cases, grasp the idea at once and simply add one each time and thus obtain correct answers, while defectives go through a laborious mental process each time and finally emerge with an incorrect answer. As this test proceeds, defectives soon manifest brain fag, and the answers are further and further from the correct ones. This test is of the most service in dealing with subjects that are unable to add abstractly, and the cases tested must be in a state of absolute mental calm as determined by a preliminary medicopsychological examination.

This secondary examination merely decides who shall be held for final examination and who shall be allowed to go at once. Of those held for final examination many are certified and deported; about one hundred feebleminded cases are being deported every month from Ellis Island at the present time.

Others, as well as ourselves, have felt the need of a concise textbook or manual, for the examination and diagnosis of mental conditions in general, including mental deficiency, organic and functional insanities, and allied neurological and medical conditions. With the end in view of supplying this need at the various Public Health Service stations throughout the world, the surgeon general of the Public Health Service has appointed a board of medical officers from that service to write such a book, and these officers, who are experts in the detection of mental diseases, are carrying on experiments at the present time in order that all statements in the book may be as nearly accurate as it is possible to make them. It must be remembered that institutes for the detention of defectives are largely employed in classifying and teaching their inmates, and that the diagnosis has already been made by the parents, school teacher, or the police. This being true, it will be seen that when we commenced our work at Ellis Island we were somewhat handicapped by a scarcity of nice and reliable tests. We solved the problem by designing and using our own tests (Figs. 4, 5, 6), and these tests, in addition to the valuable ones designed by Healy, of Chicago (Figs. 2, 3), are the ones that we depend upon in our work. Any errors that we make are undoubtedly on the conservative side, in other words all immigrants that we certify as defective are actually so, but, possibly, some that we allow to pass are also defective in a lesser degree. Our cases must all be well defined ones, since it may be necessary in any case to convince judges, lawyers and doctors that our cases are as we certify them, and, in addition, we must be able often to convince lawyers and doctors who are biased in favor of the alien and who are loath to be convinced, regardless of the evidence at hand. In fact, it has been most illuminating to me to learn of the ease with which a certificate of sanity and health can be bought from some of our professional brethren, who profess to be above such dealings.

In passing, I wish to speak briefly of the individual known as the moral imbecile. The only means of detecting him as a rule, when he is intellectually normal, is by his actions, and, unfortunately for us, he usually has sense enough to refrain from evil

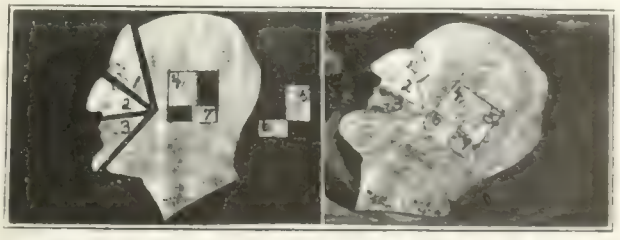


FIG. 5.—KNOX-KEMPF. "[illegible]" [illegible] hard wood one half inch [illegible] Everybody has seen a human face, hence this test is applicable to every age above six years, although it is performed differently at different ages. It works much better than the missing feature diagrams used for [illegible] who cannot interpret diagrams, or even see them, can appreciate and tell at once the feature that is missing if 1, 2, or 3 is removed. It will be noted that 4, 5, 6, and 7 can only be put in correctly in one way, and that way makes the completed ear. This test should be easily performed by all persons of nine years or older and if they fail and possess no physical disability that interfered, they are, very probably, feebleminded.

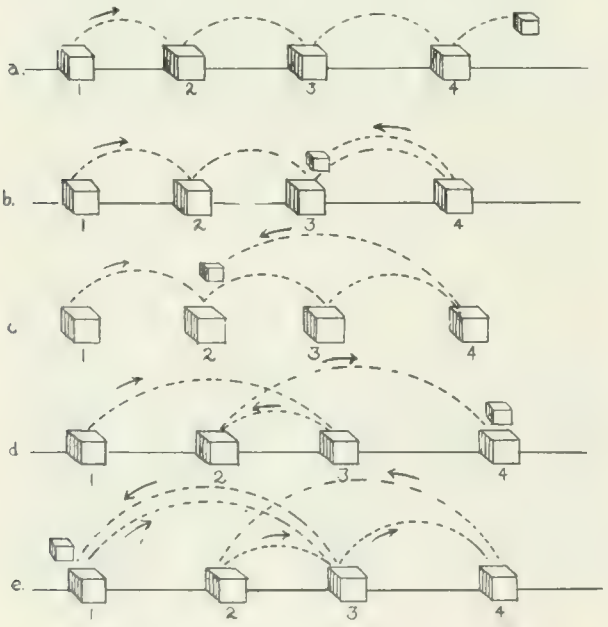
Dr. Grover Kempf, of the Public Health Service, is conducting a series of experiments with this test. Doctor Kempf is working with both normals and defectives, and his results should be not only interesting but valuable.

practices until he has passed through Ellis Island. Certain races have larger percentages of these individuals than others. The distinguishing feature of the moral imbecile is a marked degeneration of the higher psychic forces. He is completely without moral sense; he is cruel and beastlike; he takes a sensual or morbid delight in his evil practices when successful in them; there is absolutely no respect for the rights of others and altruism is unknown; there is a refinement of evil and a cool, calculating craftiness, and an incessant desire to satiate the evil cravings of the morbid soul. In a few cases these satanic desires only exist at intervals, resembling in this respect the equivalent periods in epilepsy. Physical beauty and perfection may completely mask the soul of the moral imbecile, and only those familiar with this type will be able to detect it.

There is a popular belief that insanity is rare in mental defectives. This is far from the truth; insanities, periodical and otherwise, are frequent. Insanity may originate from the primary mental defect, or the enfeeblement may be due to an attack of insanity. It may be difficult or impossible to differentiate a mental enfeeblement that has existed from birth, from a deterioration, the result of active insanity. In fact only recently a woman was examined at Ellis Island and found to be hopelessly defective and she was accordingly certified as feebleminded, although the basic condition was really senile dementia. The woman maintained she was but forty-eight years old, but in all probability she was at least sixty. Not all of the prominent diagnostic signs of senile dementia were present, so, for the sake of conservatism, we called the case one of feeblemindedness and certified her accordingly. Without a history, a differential diagnosis could not be readily made, and it may be said, in passing, that immigrants never help the medical officer by furnishing him with a history, at least not with a correct one. The case just referred to, like many others, was contested by the alien's relatives, who employed a prominent alienist from New York City to examine the case; his diagnosis was "temporary psychosis," a condition from which he said she would soon recover; and it was, indeed, a wonder to us that he did not certify that she was normal altogether, in view of some of the certificates issued by alienists that come to Ellis Island at the instigation of certain classes of immigrants. I venture to say that there is no place in the country where more impediments are thrown in the way of officials who attempt to do their full duty than at Ellis Island. One case comes to my memory at this time; an alienist of nation-wide repute was called from New York City by the relatives of a low grade imbecile alien. This alienist certified that the alien in ques-



Fig. 7.—Imbecile, high grade. He is sullen, morose, and defiant and cares but little whether he is deported or not. He is of the impulsive, criminal type with weak inhibitory apparatus. This type fills the jails and keeps the electric chair in good working order. The moral imbecile is here combined with the intellectual defective.



... Binet-Simon Graded Imitation" Test. This consists of four large and one small black cube. Beginning on the left, the examiner moves the small cube, as shown by the dotted lines, and the subject is asked to do what the examiner did. The examiner's movements are slow and deliberate. A study of a large series of cases has shown that high grade imbeciles can imitate line (a) but not (b), that feebleminded can imitate line (b) but not (c), that morons or higher feebleminded imitate line (c) but not (d), that normal persons can imitate line (d) and that only bright persons can imitate line (e). This test was developed at Ellis Island, and is one of the most valuable single performance tests. This standardization is for illiterates over twelve years of age. a. High grade imbecile; b, feebleminded; c, moron; d, normal; e, bright.



Fig. 8.—Characterological freak, vagrant type; although from a prosperous, well to do family, his only inclination in life is to obey the *Wanderlust*. This subject has roamed about the world and has worked only sufficiently to enable him to travel. He has picked up a smattering of several trades and languages and possesses considerable musical ability, but does not care to apply any of these things to his permanent advantage. He is jovial, good natured, and carefree, and inclined to be optimistic about all things. A meagre history lends credence to the belief that an attack of typhus fever may have been a factor in the etiology of this case. Dr. J. J. Loughran, of the Public Health Service, who saw this case with me, is inclined to believe that dementia præcox, of the slowly deteriorating hebephrenic form, is the basal condition. Many such cases are undoubtedly due to old organic or toxic processes; while others are "broken" men, i. e., men who have been subjected to bitter disappointment and whose vulnerable nervous systems could not withstand such assault without reacting thereto. The hermit type comes under this heading. Many of our so called characterological freaks have admitted alcoholic parentage, while others have been members of "run-out" families that were undergoing a gradual decline into extinction. Psychopathy is a cause in some cases.

tion was normal, and the court to whom an appeal had been taken, released the man, and the alien was admitted to the country. This imbecile is probably now producing other imbeciles for the State to care for.

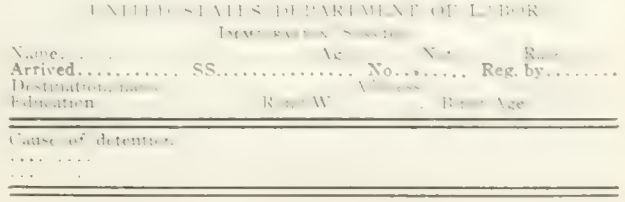
Returning to insanity in defectives; it is seen in infancy, and in one class of cases is characterized by dullness, melancholias, excitement, or mania, The infant may be an anemic, constipated, one whose attention cannot long be held. Infants are also observed whose symptoms are a flushed face, rapid pulse, wild eyes, and psychomotor activity; this type screams, is restless, is sleepless, and strikes the head with the hands. In early childhood depressed conditions are frequent, there may be melancholia, constipation, insomnia, unusual ideas, tendencies, and desires, and the child may be a recluse who cares not for the association of other children, and who is dull, suspicious, and even suicidal. Excited states occur in which there is senseless chatter and laughter, or screaming, fighting, and biting. These children break windows with their hands, attack others, or attempt hazardous undertakings without at all considering the possible consequences to themselves. They may be homicidal and destructive; some are pyromaniacs and others take delight in mutilating objects or animals, or in causing suffering or agony. The prognosis of insanity in defectives depends of course on the type of psychosis; but it is said to be in general favorable.

When one considers the subject of mental enfeeblement he finds himself at some time or other wondering what should be done to prevent it. Some authorities do not think that there is any grave danger to our racial mentality from this source, nevertheless, strenuous phophylaxis should be instituted in the form of: 1. Restricted immigration. I venture to say that, if illiteracy were a mandatorially excludable defect, ninety per cent. of our alien defectives would be automatically excluded for the next ten years at least, and a lesser percentage for all time. 2. Public education and eugenic laws. 3. Incarceration in self supporting institutions of all known defectives. 4. All children should be examined mentally when entering school and at the end of every year thereafter until their education is completed. 5. The eradication and prevention of infectious diseases both acute and chronic, protozoon and bacterial. 6. Sensible asexualization in properly selected cases. Of the last only will I speak.

If done in childhood, asexualization is a decided advantage to the defective as well as to society. No desire is ever felt to "burn fires on the altar of Venus" and the subject unconsciously passes into a satisfied placidity as does the ox or gelding. The vulgarity and lewdness so often seen in defectives would never occur. The operation should be done on young children after they have attended school about two years and it has been certainly determined that they are really of feeble mentality. If this operation were legalized and regularly performed the public would soon take it as a matter of course in the handling of defectives, and would regard it as a matter of race preservation and prophylaxis against social pollution. Certain fanatics practise asexualization to keep themselves pure and find excuse for it in St. Matthew xix, 12, which reads, "For there are some eunuchs which were so born from their mother's womb; and there are some eunuchs, which were made eunuchs of men; and there be eunuchs which have made themselves eunuchs for the Kingdom of Heaven's sake. He that is able to receive it let him receive it." In this verse the reference to eunuchs which were so born from their mother's womb, refers to the congenital eunuchs of which there are a great many in the world. Hardly a day passes at Ellis Island that this type is not observed. The facial characteristics are constant and easily recognized. (See Knox, A Diagnotic Study of the Face, NEW YORK MEDICAL JOURNAL for June 14, 1913.) Their temperament, disposition, and social attributes are usually admirable and, in certain cases, their near relatives have possessed anything but admirable characteristics. Mentally our congenital eunuchs are generally bright and well balanced, although frequently they are possessed of a neurotic family history. The operation is not a serious one. Simple vasectomy is sufficient to secure sterility and it is practically a painless and harmless operation, when performed with ordinary asepsis under local anesthesia by novocaine or quinine and urea hydrochloride. Prophylactic vasectomy is a separate subject from the castration of criminals and should not be, in any sense, considered a punishment. If those opposed to the asexualization of mental defectives could see some of them previous to the operation, and again two years thereafter in the same environment. I believe their opposition would vanish. Of twenty-six cases at the Hospital for Epileptics at Palmer, Mass., who were asexualized (all except two being fifteen years old or less, and observed for some years after the operation) the temper was improved in all but four cases, and the sexual appetite disappeared in all but two cases and the effect on the epilepsy was favorable, the attacks ceasing altogether in some cases. (Barr, Martin W., *Mental Defectives*, 1910.)

My message in closing is that in making laws or in otherwise providing for defectives, we should have infinite compassion and pity for those whom the French have feelingly called *les enfants du bon Dieu*, and the Scotch *the daft bairns*, and the *innocents*, for a soul is a soul regardless of what functional tests may show of the intellect.

I wish to acknowledge the valuable suggestions and encouragement given me by my coworkers, Surgeon E. K. Sprague and Passed Assistant Surgeon Eugene H. Mullan of the Public Health Service. Many of our cases were worked out together, and to our frequent discussions I owe many of the ideas expressed here. I wish also to tender my thanks to Surgeon L. L. Williams, P. H. S., chief medical officer at Ellis Island, for his kindness in allowing me to publish this paper.


Held for Further Medical Examination

UNITED STATES DEPARTMENT OF LABOR
IMMIGRATION SERVICE

Name. . . Age. . . Sex. . . Race.
Arrived..... SS..... No..... Reg. by.....
Destination, town. Address.
Education. . . Race. . . Color. . . Nationality. . . Last Permanent Residence. . . Age.

Cause of detention.
.....
.....

Secondary Confirmation Tests.

Day..... Month..... Date..... Year..... Place..... Ship.....
Months in year ..... Names ..... Days in week..... Names.....
(d)
Backward ..... Counts 1-20 ..... Counts 20-1..... Mistakes .....

Reverse side of card.

(h)

(a) Repeats..... Figures..... Story.....
(a) Cube test..... Line.... Trials.... Reverse.... Alternates....
(f) Construction blocks .....
(g) Mathematics .....

(c)

(b) Form board... ...shown .....time .....mistakes.....
(d) Imbecile test ..... shown ..... time .....mistakes.....
(a') G. test.....shown.....time.....mistakes.....
(a") H. frame test.....shown.....time.....mistakes.....
(a"') H. F. test.....shown.....time.....mistakes.....
(c) H. picture.....shown.....time.....mistakes.....
(d) Moron test.....shown.....corrects.....understands.....
(e) Diamond frame.....shown.....time.....

Remarks and other tests. Copy diamond.

(f)

Discharged by..... Surg. P.H.S.
Certified as ..... By.....
Date..... Surg. P.H.S.

During the month (September, 1913) 134 mental defectives were diagnosed, certified and deported from Ellis Island alone, 111 of these were the low moron type and the latter in most cases were practically normal in appearance, but upon being questioned and examined with performance tests the defect was readily apparent. Appearances alone then are sometimes very misleading. It may be said that in no case is an alien ever certified as defective upon the result of the performance test examination alone. All available facts are taken into consideration.

FOREIGN BODIES IN THE APPENDIX.

By J. W. Kennedy, M. D.,
Philadelphia.
From the Clinic of Joseph Price Hospital.

A recent removal of the appendix containing thirteen number six chilled shot, suggests this paper. It has often been the experience of operators that their pathological findings come in series of similar lesions. This last year I have had in my clinic an unusual number of cases with foreign bodies causing the supposed appendicitis and an unusual pathology and location of the appendix. During my association with the late Joseph Price, covering several thousand appendectomies, I did not see a case in which there was clear evidence that a foreign body was the cause of an appendicitis.

During the last year I have operated on eight patients in whom foreign bodies were possibly the cause of a destructive lesion. My most recent case, the patient from whom I removed the appendix containing thirteen shot, had not had previous attacks. About a month before operation, the young man had a number of times eaten of rabbit which had been shot. Some of the shot were perfect in contour, others were flattened or crushed into irregular masses with sharp edges or points. It is my opinion that the irregular form of the shot was not due to mastication but to the probable impact with the bones of the rabbit eaten. It is not so much a wonder that occasionally foreign bodies are found, as it is that they are not found more often.

The appendix is an eddy in the current of the alimentary canal, a natural anatomical cesspool and inherits by its location a predisposition to the accumulation of filth. C. C. Holmes, of England, in 1842, reported a case with 122 shot in the appendix, the patient dying at eighty-eight years from another cause. Buckler, Osler, Pfister, Mayo, Warren, and others report appendixes containing shot. Mitchell, in 1,600 autopsies, found three subjects with shot in the appendix. In 1,000 cases Bell reports foreign bodies found five times. Kelly and Hurdon report four foreign bodies in 1,000 cases. Murphy reports forty foreign bodies in 2,000 cases. A. O. J. Kelly reports twenty-three foreign bodies in 4,000 cases. I had two patients operated on for pyosalpinx without an appendicular symptom; one appendix contained a cucumber seed, the other a grape seed. Three patients were operated on for appendicitis, the organ containing a good number of seat worms. Three were operated on for appendicitis, the organ containing grape seeds.

It would be too voluminous to report all the foreign bodies which have been removed from the appendix. Pins, bones, nails, bullets, all kinds of shells, apple cores, gallstones, round, thread, and segments of the tape worm have been found. The pin holds the record of being the most usual and most dangerous foreign body found in the appendix and is probably the most frequent cause of a destructive inflammation and peritonitis. Possibly the first instance of a foreign body in the appendix, a pin, was recorded by Mestiver, in 1750. This is an interesting incident, as he called attention at that early date to the fact that the foreign body was a probable cause of the destructive inflammation and resulting peritonitis. In connection with a general discussion of the symptoms and destructive inflammation due to foreign bodies, it may be said, it has been my experience that these cases have a chronic history of recurring attacks and are especially predisposed to rapid perforation of the organ during an acute attack. This has also been Fowler's experience.

A concretion forming around a foreign body is especially liable to cause perforation of the organ. I have never seen a well marked perforation of the appendix in which I did not find a good sized concretion or a number of them. They should always be looked for and removed from the abdominal cavity, as they may contain a lethal dose of toxins. Any operator who makes a toilet in his surgery for appendicitis will find this true.

I operated upon a lad of thirteen years for a general peritonitis from a perforated appendix, who vomited on the fifth day a large bunch of round worms. I do not know what relation the round worms were to the perforated appendix in this case. However, we had two other patients operated on for a general peritonitis in whom the intestines were riddled with round worms. The appendix in these two cases may have been the hatching place for the round worms.

In reviewing literature on this subject, one is impressed by the very large proportion of foreign bodies supposed to be seeds which operators reported in the early part of their work. It is probable that many of these supposed foreign bodies were concretions. Closer observation of this day shows a very small percentage of appendicular cases due to foreign bodies. Indeed it is quite impossible to say, even though we find a foreign body

in the diseased organ, that it is the positive cause of the inflammation. I believe the appendix, acting as a storehouse for infection of all kinds, has a very intimate relation to many constitutional conditions for which it has not been held responsible. We must look up its relation to typhoid fever. For the past two years I have looked into its relation to enteric fever and have at least made this observation, that a very small percentage of patients have typhoid who have had the appendix definitely and thoroughly removed. In determining this point, before final judgment can be given, one must be sure that the appendix has been removed and not take the scar as an evidence of its removal. We have had a reprehensible number of patients in whom the appendix was supposed to have been removed, the operator not informing the patient of his failure to find the organ. I have recently operated upon two patients in whom the appendix and the cecum were in the region of the hepatic flexure of the colon, thus producing an ascending and descending colon on the right side. I had two similar cases some years ago.

In the NEW YORK MEDICAL JOURNAL for March 22, 1913, I reported a mucocele of the appendix which measured eight and one half inches in length and eight inches in circumference. In this case the appendix could have been easily mistaken for a malignant tumor of the ascending colon, as it was with the greatest difficulty that I could define a line of cleavage between the enlarged appendix and the colon. I refer to these unusual conditions as a plea for a diligent search to remove the appendix in every instance of right sided symptoms.

241 NORTH EIGHTEENTH STREET.

THE MODERN TREATMENT OF CHRONIC NEPHRITIS.*

A Summary.

BY ROLLIN HILLS, M. D.,
New York.

Although the pathologists describe an almost countless number of varieties of chronically diseased kidneys, the simplest and most practicable classification for the therapeutist is a division into the chronic parenchymatous and the chronic interstitial types. We must remember that the process is never limited entirely to the parenchyma or entirely to the interstitial tissue; that is, there is always a combination of the two processes (epithelial degeneration and increase of connective tissue); thus all cases of chronic nephritis are really cases of *diffuse* nephritis. Nevertheless, the predominance of one or the other factor in the process gives rise to certain more or less well defined differences in symptoms and physical signs, and calls for certain differences in treatment.

Chronic parenchymatous nephritis.—The first indication in chronic nephritis of either variety is relative rest for the patient and for the diseased kidneys. This does not mean that the patient must be kept in bed for the rest of his life, but it means that overexertion (mental or physical) and violent exercise must be prohibited. Unless the edema is pronounced or the heart very weak, these patients usually do better if allowed to take moderate outdoor exercise; they gain in appetite and digestion and in the condition of their blood. Exposure to cold and damp is to be avoided, and woollen clothes of suitable thickness should be worn next the skin all the year round.

The question of diet is perplexing. Few nowadays would advocate an exclusive milk diet, with the consequent loss of appetite, nausea, diarrhea, anemia, and loss of strength. Sufficient milk cannot be taken to keep up the strength for a prolonged period. However, milk should be one of the main articles of the diet; if practicable, one quart should be taken daily.

Meat is prohibited by some; others allow light meat, but not dark. The tendency at present is to allow a small amount of meat once a day, making no distinction between dark meat and light meat. As an individual needs eighty to ninety grams of proteid in twenty-four hours, and as this would require over two quarts of milk, or fifteen eggs, or twelve ounces of meat, it is best to take this amount in a mixed diet. By allowing a small amount of meat once a day, an occasional egg, and a quart of milk, the proteid equilibrium is maintained. Whether meat is allowed or not, will depend on whether it can be digested rather than on the state of the urine.

The patient should partake sparingly of soups rich in meat extractives. According to Ortner, game must be interdicted, as the amount of ptomaines and of extractives in the muscles of animals is increased by hunting.

Fish is allowed with almost universal approval, but here again Ortner believes that salt water fish must not be eaten by a nephritic unless the fish is obtained very fresh, before various toxins, such as neuridine, guanine, and hydrocollidine, have had time to develop.

Cereals are allowed freely, including rice, farina, tapioca, barley, etc. With these and with bread, vegetables, and fruit, sufficient carbohydrate is furnished. Asparagus has been looked upon by some as irritating to the kidneys, though most authorities at present allow it in nephritis. Ortner, however, excludes it along with onions, garlic, radishes, and celery, on account of the sharp oils that all these vegetables contain. He forbids tomatoes by reason of their oxalic acid. This leaves peas, beans, lentils, potatoes, cauliflower, turnips, carrots, lettuce, and the "near vegetable," macaroni. This list is still further reduced by those who look askance at the high proteid content of peas, beans, and lentils. Fat is given in the form of butter, cream, oil, etc.

Finally, it remains to be said that a nephritic patient should be cautioned against eating fried and greasy food, sweets in excess (cake, pastry, pies, candy, and sweet desserts), rich or highly seasoned food, condiments, hot relishes, hot sauces, pepper, mustard, cress, and rich or strong cheese.

Alcohol is an irritant to the kidney, and should be forbidden, except in the form of light wines with meals in those who are accustomed to its use.

Moderate smoking can be allowed, as well as one cup of coffee in the morning.

*Read at a meeting of the Medical Associations of the Greater City of New York, Brooklyn, December 1, 1913.

In chronic parenchymatous nephritis, water should not be taken to excess, particularly when edema is present. This is a disputed point, and there are still those who believe that the nephritic toxins in the blood can be washed out by drinking lots of water. But it must be remembered that the diseased kidney has often lost its power of excreting large amounts of water, so that when the urine is scanty and the edema is stationary or increasing, an increased intake of water is followed by an increase in the edema instead of by polyuria. When the urine is actually on the increase and the edema is disappearing, the time comes for drinking a larger amount of water, and such a procedure is then commonly followed by a still further increase in urine In general the patient's thirst is a good guide; one and a half to two quarts is a fair daily allowance when no edema is present.

Climate.—A warm, dry climate, where the patient can spend much time outdoors, is indicated for both forms of chronic nephritis. Those who can afford to do so should spend their winters in Florida, Texas, or California, and their summers in the mountains of New England, New York, or Canada.

TREATMENT OF SPECIAL SYMPTOMS.

Anemia.—Fresh air in abundance and good food are the best tonics. Iron is the favorite drug. Some prefer the tincture of the chloride, which was formerly given in large doses (thirty to forty drops, t. i. d.). Such doses are much too large. Indeed, Tyson's dictum that iron "locks up secretions, causes headache, and increases the danger of uremia," is now given respectful attention by the profession. Basham's mixture has long been the routine prescription in nephritis, perhaps too blindly; it is something of a diuretic. The various preparations of iron, quinine, and strychnine have been of much service as tonics in nephritis.

Edema.—This brings up a subject of great importance. In order to rid the body of the fluid which is deposited in every available place, we attempt to make the kidneys, the bowels, and the skin perform their eliminative functions even beyond their usual capacity. When the edema seems to be partly dependent on cardiac weakness, we also feel obliged to stimulate the heart; so that our anxiety is apt to lead us to load up our patient with numerous drugs which tend to upset his digestion and to defeat our ends. It is probable that we can do less with the kidneys at this time than at any other; they have already given out, and they fail to respond as quickly and as surely as we would wish. Among our best diuretics are the citrate and the acetate of potassium, liquor ammoniæ acetatis, digitalis, and strophanthus. One of these drugs or all in turn may increase the urine markedly. High hot rectal irrigations are also useful at times.

For aiding the elimination of water from the bowels, the saline preparations have been found the most useful; whichever is decided upon should be given on an empty stomach in sufficient dose to cause two or three loose, watery stools a day. Elaterin is effectual in causing movements, but it is apt to be depressing.

The skin is capable of doing more in the way of elimination than we usually realize. When properly stimulated, a litre of water (one quart) can be made to pass through the skin in twenty-four hours. This water, according to H. Strauss, contains as much as six grams of salt and a gram of nitrogenous matter in the litre. Camerer found that 100 grams of sweat contained ten grams of nitrogenous matter, of which twenty-five per cent. was urea and seventy-five per cent. ammonia. In order to cause the skin to act freely, various methods of applying heat to the body have been tried with success. The simplest is a hot bath (105° F.) followed by covering the patient with blankets; next comes the hot pack. A Turkish bath with rest afterward and care about going out into the air too soon, also works well. A quarter of a grain of pilocarpine hydrochloride hypodermically will usually cause profuse sweating. In this and in all methods of producing sweating, the pulse should be noted carefully and cyanosis should be watched for. Massage aids in getting rid of edema by equalizing the circulation.

Finally, the fluid can be removed when necessary by aspiration of the body cavities and by puncture of the skin under aseptic precautions. The fluid in the legs can be let out by making one cut two or three inches long in the skin on the shin or a cut behind each malleolus.

A saltfree diet has been used with some success for edema. The results, at times, are strikingly good. The diet must be as nearly free from salt as possible; none must be used in cooking, the bread must be made without salt, and the butter unsalted, of course. Milk must be left out of the dietary.

Another diet which has had some vogue in edema is the dry diet, in which fluid of all sorts is reduced to a minimum. It is a difficult diet for the patient, and the results are not good. A more successful formula is Tyson's milk diet of two ounces of milk every two hours. This is sufficient nourishment for a few days, and it adds almost nothing to the amount of fluid in the blood.

The heart often requires stimulation, for which the indications are plain. Strychnine, digitalis, and strophanthus are the drugs most commonly employed. Cabot insists that free purgation with magnesium sulphate and the use of theobromine sodiosalicylate for five days should precede the administration of digitalis.

Hypnotics are often needed. The more useful drugs of this class are chloral, the bromides, veronal, and sulphonal. Sometimes morphine in small doses is the best hypnotic. Headache may be so severe as to require opiates.

Uremia.—The treatment of a supervening uremia opens too large a subject to come within the scope of this paper.

Chronic interstitial nephritis.—In considering this disease, only the points of difference between the treatment of the parenchymatous and the interstitial varieties will be considered.

The question of the amount of fluid to be allowed the patient has caused considerable discussion in this form of nephritis as in the other. It seems certain that large amounts (several quarts daily) throw extra and excessive work on the kidneys. The German plan is to have the patients take one day a week a large amount of water (two to four quarts) to flush out the system, and only a reasonable

amount, guided by the thirst, on the other days. Von Noorden, Pel, Korányi, and others advise limiting the amount of water, holding that large amounts increase blood pressure. Strauss (*Berliner klinische Wochenschrift,* May 25, 1908), however, advises against too great reduction in fluids. He believes that a sufficient amount of water causes a dilution of the toxic substances in the blood and the elimination of these toxins, thus outweighing any supposed danger from increased blood pressure.

The dietary problems are so similar to those of the parenchymatous form that it is unnecessary to repeat them.

No particular mineral water can be recommended. The alkaline and chalybeate waters are to be preferred, as they act well by inducing catharsis and diuresis.

Heart and vessels.—It is now recognized that hypertrophy and hypertonia are compensatory conditions to a certain extent. But extreme hypertrophy and high tension cause headache and dizziness and lead to cerebral hemorrhage or cardiac dilatation.

The first step in lowering blood pressure should be to cut down the bulk of food, both solid and liquid. Houghton (*American Medicine,* October 7, 1905) has pointed out that treatment designed to lessen the amount of proteid putrefaction in the bowel will have a tendency to lower blood pressure by preventing the absorption of substances which, although rapidly eliminated by a normal kidney, accumulate in the blood by reason of the impaired kidneys. Removal of meat and eggs from the dietary is indicated.

Rest in bed is also a necessary move in the lowering of high tension. Next in order comes free catharsis, for example, by the use of compound jalap powder. Bloodletting gives prompt relief, but only temporarily.

Drugs designed to lower blood pressure directly are uncertain in their action. Nitroglycerin is probably more often useful than any other drug; next come nitrite of sodium, chloral, and sometimes Donovan's solution and aconite. It is probable that the vasodilators are used too early in many cases, as a moderate amount of increased tension is good for a patient with chronic interstitial nephritis.

When the heart has given out, as shown by dyspnea, cyanosis, and edema, rest in bed must be insisted upon. The diet should be eggs, cream, and cereals. Cathartics should be used freely. Digitalis (the tincture, the infusion, or the powdered extract, or digitalin, strophanthus, caffeine, strychnine, or camphor is indicated. Bleeding to the amount of 500 c. c. is of use, as well as an ice bag to the precordium. Morphine is to be considered a true heart stimulant, of great use in this condition.

Free elimination by the skin, lungs, and bowels is of the same importance in interstitial nephritis as in the parenchymatous form. The skin is kept active by daily warm or tepid baths. Sweating is induced only in case of edema or of threatened uremia. The elimination through the lungs is helped by fresh air and by attention to the heart to prevent pulmonary congestion. The bowels are kept acitve by fruit, green vegetables and the coarser cereals, salines, cascara, aloes, or senna. Occasional series of calomel or a dose of elaterin are given. Von Noorden has said, "given a case of nephritis with diarrhea, be in no haste to cure the diarrhea."

When the urine or the urinary solids are deficient, digitalis, caffeine, potassium acetate or theobromine sodiosalicylate are used.

Edema in this form of nephritis is often due to a failing heart. If not due to this cause, the treatment is the same as in the parenchymatous form.

Anemia.—Iron (which should not be given for too long a period nor in excessive doses), fresh air, and moderate exercise are the most efficient remedies for anemia.

Stomach.—Appetite and digestion are often improved by the use of the bitter tonics.

Headache.—For severe headache, the bromides are often used. Coaltar products should be used with caution. The various means of lowering the blood pressure often help the headache as well. Morphine is often needed for the headache and for nocturnal asthmatic dyspnea; for the latter chloral is also used with some success.

Various specific serums have been used without any good results. The same can be said of the administration of raw kidney. A few years ago, Edebohl's decapsulation operation was tried many times, but the results were not encouraging.

One of the latest attempts at specific therapy is the work reported by J. F. Percy (*Journal A. M. A.*, November 9, 1912), who used thyroid extract with the alleged results of, 1, increasing the urine; 2, of causing the return of urinary solids to normal; 3, the disappearance of albumin and casts in from four to six weeks; 4, the reduction of blood pressure and, 5, the vanishing of local and general symptoms. Percy gives twenty grains daily for a week, then thirty grains. Apparently, clinicians are not in haste to take up this treatment, as further reports are lacking.

The writer is impressed with the vagueness of our knowledge of the proper treatment of chronic nephritis; he hopes that this résumé, culled from various sources, will arouse discussion and bring out some points of practical importance on what is surely an important subject.

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216 SEVENTY-SEVENTH STREET.

DERMATOSES NEUROTICÆ.

BY WILLIAM P. CUNNINGHAM, M. D.,
New York,
[illegible]
New York Skin and Cancer Hospital.

Just how far the nervous system is concerned in the origination and evolution of all pathological processes, is a moot question. There are those who maintain that all aberrations of growth, whether hypertrophic, atrophic, or neotrophic, are referable to perverted action of the trophic nerves, responding to irritations sometimes suspected, but generally unknown. They will cite you acromegaly and

atrophodermia, large white kidney and small hobnail liver, scirrhus cancer and perforating ulcer of the foot, the firm toned tissues of the contented individual, and the emaciation of the worrier; and if confronted by the serologist with his specific organisms, and his antibodies, they will defiantly retort that the action of these is mediate through the trophic nerves. Whatever may be the merit of this contention, I am not prepared to say, but with regard to the skin there can be no doubt of the etiological activity of the nervous system. Evidences of this are familiar to every physician. We all admit the nervous causation of herpes zoster and herpes simplex. The insistent and frequently excruciating pain of zoster demonstrates beyond all question the active participation of the spinal nerves. The limitation of the lesions to the area supplied by a certain nerve is cumulative evidence.

While we admit the obvious in the case of zoster, we are very apt to overlook it in other conditions where inherited preconception or uncritical observation beclouds the eye of judgment. Note the attempt to designate one particular form of eczema, neurotic, when just a little attention, and intelligent deduction, should put all the eczemas into this category. Variations of type are responsible for this confusion of thought.

It will assist materially in the appreciation and classification of the various factors entering into the production of cutaneous diseases, if we group those dependent on nervous influence, mediately or immediately, directly or remotely, hypothetically or demonstrably. Associated in this way, obscure manifestations acquire reflex lucidity. Estimated by the element of nervous aberration, much apparent dissonance comes into perfect harmony.

Universally recognized as a nervous phenomenon is the blush that mantles a woman's cheek, when she is embarrassed or ashamed. There is no dispute about the cause of the empurpled face of anger. The blanched skin of terror is the product of the same agency. The intervention of the nervous system is so obvious in these cutaneous eccentricities, that it is regarded as a selfevident proposition. Zoster, as already discussed, is admitted to be a neuritis. There is very little doubt that herpex simplex is of the same nature, though of different intensity.

The common and yet peculiar clinical picture, known by the advocates of one theory, as dysidrosis and by the advocates of another, as cheiropompholyx, would seem to come most rationally under the designation of a neurosis. The idea underlying the title dysidrosis, is that of retention of the secretion of the sweat glands, and the consequent dilatation of the latter into little deep seated vesicles. Strange to say this *dysidrosis* or *difficult* sweating, is nearly always accompanied by hyperidrosis or *excessively free* sweating! There is some appearance of nonconformity here. Cheiropompholyx, the title employed when the lesions take the large vesicular or bullous type, is manifestly not due to retained sweat. It presents all the characteristics of a trophoneurosis, and therapeutics based on that opinion is most speedily effective. Angioneurotic edema is etiologically classified by its title. Urticaria with its papules, wheals, vesicles, bullæ, and erythematous plaques, developing suddenly and itching malignantly, has all the earmarks of nervous instability, and yet how prone we are to disregard this significant circumstance, and focus our attention entirely upon the evil activity of autointoxication. It is a perfectly obvious proposition that, if the ingestion of deleterious pabula (such as shell fish, spoiled fruit, heavy sweetmeats, etc.) produces in one individual no untoward effects whatever, and in another arouses a furious outbreak of urticaria, there must be a secondary factor, which quiescent in one instance, and irritable in the other, determines the occurrence and intensity of the cutaneous eruption. This secondary factor is the nervous system, a combination of live wires, which, receiving an irritative impulse in the disordered intestinal tract, sweeps it onward to the surface where it is expended in the production of itching lesions.

In prurigo we are dealing with an aftermath of urticaria. The nervous origin of this rebellious dermatosis is demonstrable from its lineage and from the noteworthy circumstance that terrific itching often precedes the appearance of the pallid papules. As in dermatitis herpetiformis the sensory disturbance does not seem to bear a direct relation to the amount of eruption, but to be the expression of an acute nervous erethism, accompanied by the appearance of certain unobtrusive lesions. Erythema multiforme is consanguineous with urticaria. Barring the one element of itching, which is unusual in erythema multiforme, the same description might often apply to both. Erythema multiforme is a more subdued and less assertive disturbance than urticaria, but there are converging types so much alike that a common paternity is undeniable. The flat papules, the iris formations, both erythematous and herpetic, and the frequently eccentric configurations can reasonably be attributed to nothing but deviation of nervous influence. What excites this perverted activity is a matter of contention. Rheumatism, gout, toxicity, intestinal and medicinal, infection by undetermined microorganisms, urethral irritation, and uteroovarian abnormalities, have all been urged for this distinction. The various toxic erythemas, morbilliform, scarlatiniform, and herpetiform, like their congener, just described, are immediately due to nervous irritability, excited in some instances, by influences readily demonstrable, in others by influences readily deducible, in others by influences utterly unknown. Sometimes we can prove the association with shell fish, with iodide of potassium, with quinine, with indicanuria: and sometimes we have to be content with the general assumption that there are putrefactive changes in the intestine discharging unidentified toxins into the circulation.

Two varieties of this dermatosis, namely the scarlatiniform, and the morbilliform, are the cause of great confusion at times, being mistaken for the diseases which they so much resemble. This injures only the inexpert diagnostician, whose error is ridiculed by the sapient laity. But if the mistake occurs the other way about, and a serious contagion is permitted to stalk abroad, the welfare of the community may be put in jeopardy. In a dubi-

ous case, particularly in an adult, it is wise to withhold a positive opinion until the bowels have been swept clear of all possible irritants.

Anæsthesia cutis is observed in all degrees of diffusion and intensity depending on the character and location of the exciting cause. Small, dispersed areas may be one of the advance signs of locomotor ataxia; complete loss of tactile sensibility, in the legs and even in the fingers, will be noted in the well developed case. Various lesions of the cerebral cortex, or of the conducting fibres in their course to the periphery, pressure effects from syphilis, leprosy, or tumors, alcoholic multiple neuritis, and hysteria are responsible for the development of this distressing and disabling symptom. Paresthesias of many kinds, such as burning, chilling, smarting, tingling, itching, formication, the feeling of water trickling down the skin, all these may be referable to the same organic lesions in the stage of incomplete development, irritation preceding destruction of the nervous tissue. The mimicry of hysteria may take any of these forms.

Erythromelalgia is a definite clinical picture, of central or peripheral nerve disturbance, functional or organic, accompanied by shooting, burning, throbbing pains and shifting areas of patchy redness in the dependent limb. It has accompanied disseminated sclerosis, tabes, myelitis, neurasthenia, and hysteria. Crocker is credited with the statement that one half the cases of xanthoma palpebrarum are complicated with migraine, and he scents a strong nervous element in the pathology. Leucoderma is admittedly neurotic. Hyperpigmentation as in cloasma and Graves's disease may by analogy come into the same category. We concede that there is a primary determining cause acting on the nervous system, and we are simply seeking to emphasize the intervention of the latter in the cutaneous manifestations.

The trophic changes in scleroderma, atrophodermia, and xeroderma pigmentosum, indicate the particular agency conspicuously at fault. Our ignorance of their remoter pathogenesis is at present invincible. Acanthosis nigricans, a fatal disease, characterized by the development of brownish patches with blackish, warty masses, later superimposed, is the reflex cutaneous product of visceral carcinoma. Fortunately this dystrophy is rare. Unfortunately it is much rarer than visceral carcinoma. It is cited only in illustration of the morbid possibilities of perverted impulses.

Alopecia is credited with a dual origin. There are some who insist that it is parasitic and some who insist that it is neurotic, and still others who make a conciliatory straddle, and concede contentions in different cases. The preponderance of evidence is in favor of its being neurotic. In another paper I have discussed the probable factors inhibiting the trophic nerves to the affected follicles, and have expressed the opinion that the most likely one is panurgic autointoxication.

There are other disorders of the hairy surface, not so common and conspicuous, which demand some consideration. There is an atrophy of the hair itself in which it loses bulk not *en masse*, but in the individual strands. There is a fragilitas crinium of which the title is a sufficient description. Trichorrhexis nodosa is a rare and peculiar dystrophy, in which the hair presents a number of little nodes. Fracture occurs through these, somewhat resembling the green stick fracture of bones. Canities, or grayness of the hair, is one of the physiological effects of advancing years. Occurring early in life, however, or suddenly or after some serious loss or anxiety, it manifests a pathological deflection of normal trophic influences. It is a matter of common observation that the hair will turn white from worry, just as it is a matter of common observation that carking care will cause "this too, too solid flesh to melt, thaw, and resolve itself into a dew." Dropping from the sublimity of Hamlet to the vulgar level of a household aphorism, tradition hath it that "care killed a cat." It is generally conceded that fragilitas unguium and decidua unguium are analogous to the hirsute derangements, and doubtless responsive to a similar cause.

Perspiratory irregularities are palpably neurotic. We have all experienced "the cold sweat" of apprehension. The anidrosis of nephritis is indubitably toxic, the nerves responding to the irritation of the retained exrementitious matter. It is reasonable to assume that chromodrosis, or colored sweating, has its origin in some such irritation. Its occurrence in neurasthenic women favors the neurotic hypothesis. What determines the tint—red, blue, green, brown, or black—is utterly unknown. Occurring largely or only in hysterical subjects, the element of malingering, through the medium of drugs, such as copper, potassium iodide, etc., very properly comes into the discussion. There are instances, however, in which the closest observation could detect no fraud.

Epidermolysis bullosa, is a most unusual condition of weakened resistance to external irritations, showing itself in the development of bullæ at the site of even trivial trauma. A slight pinch, the rubbing of the trouser leg, even the wiping of tears from the eyes, is sufficient to elicit from the devitalized nerves a reaction ordinarily accorded to boiling water. A rapid effusion of serum puffs the epidermis into blisters of all shapes and sizes according to the direction and force of the friction. There can be no dispute as to the causation in this extraordinary condition. The bullæ of pemphigus are due to the same loss of neurotonicity, but the irritation is from within, and is of very grave and serious import. Toxemia of unknown origin is the best explanation available.

The pemphigoid ebullitions of malignant syphilis result from the ferocity of the attack upon the nervous system. Dermatitis herpetiformis, in its typical manifestations, characterized by vesicles, and in its extreme acerbity by bullæ, presents corroboration of its neuropathogenesis, in the constant arrangement of its lesions in peculiar groups, its customary sites of election, and the distracting pruritus out of all proportion to the severity of the eruption.

Hydroa vacciniforme is a vesicular eruption occurring almost exclusively on the faces of children, and showing a marked discrimination in favor of boys. It resembles that of vaccination, hence its title. It begins in the spring and ends in the fall.

It reappears for many years. It is attributed to the action of the actinic rays of the sun on the terminal nerve filaments. Hydroa gravidarum, perhaps better known as herpes gestationis, is averred by Duhring to be one of the varieties of the malady bearing his name. It occurs during pregnancy and terminates with it.

Perforating ulcer of the foot is recognized as the result of the degeneration of the central or peripheral nerves. Bed sores, caused by pressure, especially in the paralytic, are reputed to be ischemic, but the circumstances attending their occurrence put the responsibility upon the nerve supply. The tissues are decidedly more vulnerable, as in epidermolysis bullosa, because the innervation is defective.

Pityriasis rubra is assuredly of nervous origin. The patient's appearance has been aptly compared to that of a "boiled lobster." He will shed amazingly large quantities of scales, shovelfuls according to some observing authorities, and yet his skin is palpably thinner than normal. This implicates at once the trophic nerves. This is a fatal disease and must be distinguished from dermatitis exfoliativa which resembles it closely. The latter is autotoxic and more or less amenable to treatment. It does not affect the nails or thin the skin like pityriasis rubra. Sometimes it will follow irritating applications for other dermatoses, and here the autotoxic etiology does not obtain.

The half dead and alive fingers of Raynaud's disease, cold, blue, shrivelled, ghastly to the sight and touch, are the repulsive result of an angioneurosis. The attacks of local asphyxia are paroxysmal, at all events in the beginning, and indicate the operation of a perverted nervous impulse. Sclerodactylia, or scleroderma of the fingers, bears such a marked resemblance to the foregoing that its consideration at this point is timely and expedient. The integument is hard, rigid, and atrophic. The subjacent tissues are markedly reduced from pressure. The joints are fixed. The flexures often ulcerate. Naturally the parts are cold. To distinguish sclerodactylia from Raynaud's disease is simple if the paroxysmal character of the advance of the latter, its ischemia, and tendency to gangrene are contrasted with the steadily increasing condensation of the integument (shrunken, cold, and ivory white, it is true, but fibrous and tough) observed in the other disease. Careful observation will mark the distinction between these two peculiar angioneuroses.

Syringomyelia, otherwise called Morvan's disease, is an illustration of what an undeniably nervous affection can do to the skin. It is marked by the development of gliomatous tissue in the spinal cord with the formation of cavities. The effect of abnormal nervous action on the skin could not be exemplified in any better way than by a detailed description of the ravages of this rare form of myelitis. It begins with pain in the extremities, succeeded by analgesia and a series of whitlows, which are painless in the vast majority of cases. Necrosis of the phalanges sooner or later supervenes, producing distortion and disability. Bullæ and pustules are frequently observed, together with fissures and ulcers in the natural folds. There is loss of appreciation of pain, touch, and temperature. Mental retention of this syndrome will aid materially in the deciphering of many an etiological puzzle.

While it is only frank to admit that the etiology of lichen planus is at present indeterminable, there is reason to believe that it is a neuroparalytic hyperemia. The paresthesia—itching—is in exaggerated disproportion to the changes in the skin. It has a tendency to form along the line of scratch marks. It is pretty constant in its localization. It is discovered generally in those who are the victims of nervous strain or worry. It is asserted, on the one hand, that these conditions of lowered vitality simply clear the way for the entrance of the undiscovered exciting cause, and, on the other hand, that they are simply coincidental with the development of the lesions which are of the type of the infective granulomata. It is rational to discuss this disease in connection with the neurotic dermatoses because of the opinion held by certain authorities and because of the neurasthenic condition of so many of the afflicted. The treatment most successful, namely, bichloride of mercury internally and externally, would not seem to sustain either the neurasthenic or the infective causation. It is certainly not applicable to the nervous hypothesis, and is of no avail in the acknowledged granulomata such as lupus and the tuberculides. It has been urged with some show of reason, that intestinal putrefaction is the ultimate pathological factor.

Psoriasis I have treated of elsewhere as a neurosis. There is enough evidence to sustain that opinion. It is by no means new, the etiology is either parasitic or neurotic. Against the parasitic hypothesis it is alleged that no parasite has been found; that arsenic acting so favorably on psoriasis is not a parasiticide, and *is* a nervous stimulant; that frequently the application of an effective remedy such as chrysarobin to *one* side of the body, clears up the eruption on the *other* (evidently a parasiticide can act only at the point of contact); that the disease has periods of recession and exacerbation directly related to the seasons and the physical and mental condition of the patient; that inspiring news and enlivening travel, without any form of medication whatever, have cleaned up the eruption absolutely. Considering the utter inefficacy of treatment at present employed a tentative acceptance of the neurotic hypothesis would not be irrational.

We have now reached a phase of this subject which in the very nature of things will appeal more strongly to the general practitioner than any yet considered. "Eczema" is the commonest of dermatoses. Most of the patients apply first to the family doctor for relief. Many of them, unrelieved, pass through the hands of many men. The reason for this, is failure to recognize the real pathology of this many sided condition. Let it be grasped at the very beginning, that eczema in all its variations, is nothing but a dermatitis. It is always due to an exciting cause. Sometimes it is possible to put one's finger on this cause and sometimes it is not. Sometimes it is external such as water, lime, dyes, or antiseptics; sometimes it is internal, such as improper feeding, injudicious drinking, or

insufficient elimination; but an exciting cause there is in every instance. How then is it that certain individuals, subjected to the influence of that cause, resist it utterly and certain other individuals succumb? The answer to this brings eczema fairly within the scope of this paper. What quality is it that makes one person subject to urticaria, to epidermolysis bullosa, to prurigo, to pruritus, and the various other paresthesias, and enables another person to avoid all these? Relative power of resistance. Where does that reside? In the nervous system. Given a condition of normal neural tone, and the trophic nerves refuse reaction to the offered insult. Given a condition of atonicity or of erethism, and vasomotor control is lost, and inflammatory reaction of greater or less intensity results. That this resistance appertains exclusively to the nervous system is demonstrated by the well known fact that all the dieting ever devised will not cure an eczema if the irritation of the lye, dye, cement, flour, water or bichloride is not removed. Eczemas due to irritants circulating in the blood, will be cured by proper dietary regulations. But this involves no contradiction, for the products of gluttony, of intemperance, of intestinal putrefaction, act as exciting causes, *from within*. Witness infantile eczema caused by faulty feeding.

TREATMENT.

Having associated these dermatoses with deranged nervous action what practical use shall we make of our information? To begin with, every bit of knowledge is a step in advance. The more we know about a disease the sooner will one of us dig to the root of its being. It will be simpler working back from "nervous influences" than groping blindly for an uncertain foothold. Persistence may enable us to discover what is amiss with these nerves of lesser resistance. Even if we are not fortunate enough to get so far, it may be possible to lend aid and comfort to those enfeebled hypersensitive organisms and minimize the deleterious effects of the exciting cause. All measures of a reconstructive character, especially those of proved value in neurasthenia, should be employed with dogged perseverance. I am almost afraid to mention that trite old trinity, iron, strychnine, and arsenic, but a better combination never was devised to meet the exigencies of depressed vitality. Suitably adjusted to the individual, great good may eventually be achieved. Arsenic in red bone marrow is often speedily helpful. Phosphorus has a mighty influence on the nutrition of the nerve tissue if administered with discretion. It may be given in pill form or in Thompson's solution. The various combinations of phosphoric acid are also of much avail. The hypophosphites and the glycerophosphates, are convenient forms of administration. Lecithin preparations offer particular advantages in many cases. The mineral acids are also neurotonic. Hydrotherapy is outdone by no other single measure in its amazing stiffening of the nervous system. Cold baths are of incalculable advantage, where there are no contraindications. Static electricity is a valuable adjuvant. To illustrate what may be done, the flushings and sweatings attending the menopause render the patient so disagreeably conspicuous, as well as so insufferably uncomfortable, that any prospect of relief from whatever quarter should be hailed with acclamation. I have found a combination of sodium bromide, Fowler's solution, and antipyrin very satisfactory.

Upbuilding measures must be used with good judgment. It will not do to recommend cold baths in eczema. It will not do to prescribe arsenic in the acute stage of the same disease. But recognizing prudent limitations, treatment directed to the nervous system cannot fail to have considerable influence on all the conditions included in this paper.

323 West Fourteenth Street.

ON TESTING URINE FOR BILE PIGMENTS AND FOR DIACETIC ACID.

By Jacob Rosenbloom, M. D., Ph. D.,
Pittsburgh.
(*From the Biochemical Laboratory of the Western Pennsylvania Hospital.*)

I. A TEST FOR BILE PIGMENTS IN URINE.

While a great number of tests for bile pigments in urine have been described, the writer has found that few of them can be relied upon. Although Gmelin's test[1] is used almost universally in clinical laboratories, there are certain facts to be remembered before it can be properly interpreted.

This test is really not delicate enough, as it will show only about one part of bilirubin in 75,000 of urine, and in dark colored urine the reaction is not distinct. Urine containing an excess of indican may give a deep blue or green color with this reagent. Skatoxyl may give a reddish color; and also urine containing various drugs may give various colors. Urobilin may also react, giving blue or red colors with this reagent.

The writer has found that the following test[2] may be relied upon for the detection of bile pigments in urine. The test is a modification of Huppert's test[3] and will indicate one part of bilirubin in 1,000,000 parts of urine. Five c.c. of acid urine (if not acid add five drops of ten per cent. hydrochloric acid) is added to five c.c. of ten per cent. barium chloride solution and the mixture is then centrifugated. The barium chloride precipitates the sulphates, phosphates, and bile pigments. The supernatant fluid is decanted and three c. c. of a reagent, consisting of ninety-nine c.c. of ninety-five per cent. alcohol, one c.c. of concentrated hydrochloric acid, and 0.4 gram of ferric chloride, are added to the precipitate. Heat this mixture to boiling and in presence of bile pigments, a bluish green or green solution is obtained which becomes violet or red on the addition of nitric acid.

It may be readily noted that the test is more complicated than Gmelin's and consequently requires more time, yet the results obtained by the use of this test more than compensate for this difficulty.

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[1] [illegible]

[2] Rosenbloom: Zeitschrift für physiologische Chemie, xxxvi, p. [illegible], 1902.

[3] [illegible]

II. A TEST FOR DIACETIC ACID IN URINE.

The writer has been using for some time a certain technic in testing urine for diacetic acid that he thinks may prove of service to others. The most commonly used test is that of Gerhardt,[4] but unfortunately the reaction due to the presence of diacetic acid is closely simulated by the presence of salicylates, salol, phenacetin, antipyrin, and other drugs, so it becomes necessary to distinguish the reaction due to diacetic acid from the reaction due to the other substances. The methods for this purpose, based on dissolving out the diacetic acid from the urine by means of ether or by decomposition of the diacetic acid by heat, I have found are not to be absolutely relied upon. It therefore became necessary to use other methods. Of course the method of Arnold,[5] modified by Lipliawsky,[6] is a reliable test for diacetic acid, but it is time consuming, requires considerable care in technic, and the reagent used, paraamidoacetophenone, is very expensive, a factor of considerable importance in clinical work.

The technic used in this laboratory is as follows: Gerhardt's test is first applied to the urine in the following manner: To fifteen c.c. of urine, a ten per cent. ferric chloride solution, which must not be too acid, is added, drop by drop. The addition is continued till no further precipitate forms and then three c.c. of the ferric chloride solution is added at once. It is not necessary to filter off the precipitate of ferric phosphate produced on the first addition of the ferric chloride.

If this test is negative, that is, if a claret or port wine color does not develop on the addition of an excess of the ferric chloride, the urine is considered to be free from diacetic acid. If the reaction is positive, the following test[7] is carried out, which allows one to determine if the reaction obtained by means of Gerhardt's test is due to diacetic acid or to the drugs present in the urine.

Ten c.c. of urine is acidulated with three drops of glacial acetic acid, and five drops of Lugol's iodine solution are then added. Shake solution with two c.c. chloroform. If the positive Gerhardt test was due to diacetic acid, the chloroform extract will be colorless, while if it was due to the drugs present in the urine, it takes on a rose color due to solution of the free iodine. This technic has been used by the writer for some time with increasing confidence in its accuracy and simplicity.

It must also be remembered in testing urine for diacetic acid by Gerhardt's test, that in the presence of bile pigments,[8] the ferric chloride produces a green color, which hides the port wine color due to the presence of the diacetic acid. This difficulty may be obviated by heating to 70°C. thirty c.c. of urine, to which is added about two teaspoonfuls of animal charcoal. The charcoal adsorbs the bile pigments. The mixture is then filtered and the filtrate used for testing for diacetic acid with ferric chloride. I have also found that the presence of bile pigments in the urine does interfere with the test for diacetic acid by means of Lugol's solution. Therefore, in presence of bile pigments, one must test the urine for diacetic acid by means of the Arnold-Lipliawsky test as mentioned above, or use charcoal to absorb the bile pigments and then apply the technic for the detection of the diacetic acid in the filtrate.

3050 Beacon Street.

[4] [illegible]

[5] [illegible]

[6] [illegible]

[7] [illegible]

[8] [illegible] tection of bile pigments in urine that is based on this reaction.

Abstracts and Reviews.

THE ETIOLOGY OF THE INFECTIOUS DISEASES.*

By Professor Victor C. Vaughn,
Ann Arbor,
University of Michigan.

The assumption that bacteria are of relatively simple chemical composition is very generally accepted. This applies particularly to their protein molecule. While it is true that the known bacterial and protozoal organisms are of simple morphological structure and show comparatively slight differences from a few general forms, the view that their protein constitution is a simple one is not proved. On the contrary, it has been definitely shown that the bacterial protein molecule is highly complex, probably not less so than any other protein molecule. It is known to yield at least two carbohydrates, of which one has been shown to be attached to the nuclein group, while the other's position has not been determined as yet. The weight of evidence, however, places the second carbohydrate as a constituent of the protein part of the molecule. Nuclein bases are also derivable from the bacterial cell protein. That the bacterial cell consists chiefly of protein has been proved by its abundant yield of both monoaminoacids and diaminoacids. Bacteria are, in fact, made up mainly of glyconucleoprotein, and are highly organized.

The recent work on protein sensitization of the living animal cells—anaphylaxis—has opened up a large field for speculation as to the origin and mechanism of clinical febrile diseases. No very definite conclusions have been reached from such studies, chiefly because of the fact that the symptoms and phenomena of acute anaphylaxis are so striking that the study of the more chronic forms has been greatly neglected. Further, the fact that many infecting agents do not give rise to sensitization such as to permit of the production of anaphylactic symptoms or death in experimental animals, has raised almost insuperable objections to the anaphylactic explanation of infectious diseases. In the following paragraphs we will briefly state our own views on the mechanism of fever and infectious disease.

In addition to the proved complexity of the bacterial protein molecule, we have been able to isolate in pure form, from various proteins including both bacterial and nonbacterial, a toxic molecule. This toxic molecule is a constituent of every protein

*Summary of a lecture delivered before the Harvey Society at the Academy of Medicine, New York, January 17, 1914.

which we have examined, and, irrespective of the type of protein from which it is derived, it is always the same. We do not wish to imply that it is necessarily identical in chemical composition in the case of different parent proteins, but that it is quite constant in its physiological actions, irrespective of its source. It is present in all bacterial cells whether they are of pathogenic or of nonpathogenic species. The poisonous nucleus is not free in any protein, but is liberated only after partial lysis of the complex molecule.

The precise nature of this "protein poison" is not yet determined. It is certainly not a toxin in the usual sense of the word, for it is not destroyed by heat and is incapable of causing animal sensitization. It is also not an aminoacid. There is some evidence upon which to believe that it is closely related to the aminoacids, however; and it is not altogether improbable that it may be allied to the histamin of Barger and Dale. Edestin and zein, the purest proteins known, are capable of yielding this "protein poison," but albuminous substances which are not proteins, such as gelatin, do not yield it. We wish to repeat that it is probably a constituent of all true proteins, and that, irrespective of the protein from which it is derived, the poison has constant physiological actions on animals.

So far as we know, all infecting agents have certain common characteristics. They are all living and capable of multiplication. They all contain protein as an essential portion of their structure. Being alive and capable of multiplication, they must feed, assimilate, and excrete. They are, primarily, labile and not stable. Like all other living cells, they are fitted to utilize only certain substances as pabulum. These infecting agents contain ferments for the preparation of their nutriment. The ferments are of two kinds: An extracellular ferment, which is analytic in action, and which diffuses more or less widely from the cell, attacking such substances upon which it is capable of acting and preparing them for absorption into the cell from which it was derived. The second ferment is an intracellular one and is synthetic in its powers, building up the absorbed, prepared pabulum into the protein of its cell. Such processes—lysis of certain nutritive substances derived from the host and synthesis of these into the bacterial protein—lead to the multiplication of the bacterial cells and the production of an excessive amount of foreign bacterial protein in the infected animal.

All these phenomena require time and suitable conditions. The time during which they are taking place in an animal is the incubation period of the disease, and is not occupied with changes productive of symptoms. During this period the bacterial cells supply the ferments, the albumins of the host supply the substrate, and the process is a synthesis of bacterial protein.

Another process is going on simultaneously, however, in the tissues of the host. This consists in the acquisition, by certain cells of the host, of the new power of attacking and destroying the protein of the bacterial cell. When a certain point is reached, the defensive powers overcome those of the infectious agent and this is killed. Then the extracellular and intracellular ferments of the trained cells of the host break down the bacterial protein, and liberate the contained protein poison. This is the period in which symptoms are produced and the host is ill. The conditions are reversed; the ferments are now supplied by the cells of the host and the bacterial protein now constitutes the substrate. There is lysis of the bacterial protein molecule.

The pathogenicity of living organisms depend upon several variable factors, some of which may be indicated. It is necessary that the organism be capable of living and multiplying within the tissues of the animal. This depends upon the ability of the organism to attack certain of the albumins of the animal and to convert them into its own protein. An organism may be wholly unable to utilize any material in a given animal, and then, although its protein contains the protein poison, it is not pathogenic because it cannot multiply so as to provide a sufficient quantity of protein to yield enough of the poison to cause symptoms. On the other hand, the organism may be capable of utilizing the host's albumins, but may be prevented from so doing through the greater ability of the host to destroy it before multiplication, or through unfavorable conditions of temperature, etc. In these cases, however, immunity is only relative and may be overcome by massive doses of the organism, by lowering of body temperature, by starvation, and by other factors.

As the protein poison, which is the cause of disease, according to these views is not specific, an explanation for the differences in diseases must be sought. This is forthcoming from the consideration of certain relatively simple factors. In the first place, no account has yet been taken of the constituents of bacterial protein cleavage other than the protein poison. It is quite probable that these products may be highly specific and selective for certain tissues of the host and thus determine the localization of the bacterial attack. The bacterial protein molecule, being complex, elaborates ferments which are capable of attacking only certain very specific materials. A similar complexity exists in the protein composition of the animal cells, hence the attack by a given bacterium is centred in those organs and tissues, the cells of which contain the available substances for the bacteria.

We may say, then, that acute diseases result when there is rapid multiplication of the infectious agent, and rapid sensitization of the cells of the infected animal. When these processes are slow, the disease is chronic. When the pabulum for the infectious agent is sharply restricted to a very limited number of the host's cells, the disease is local. When the pabulum is widespread throughout the host's tissues, the disease is systemic.

Fever is a beneficent process, and is the result of the reaction of the cells of the animal to the protein poison liberated from the foreign protein of the infecting agent.

That the protein poison, which we believe to be the cause of infectious disease, is not specific, is shown by the fact that it can be obtained by suitable cleavage of any true protein. That it is the causative factor of all febrile diseases is not so easily shown, but the following observations sup-

port this contention. All bacteria, and all proteins, yield the poison. The symptoms from its injection do not differ when it is derived from widely different organisms. Suitable gradations of dose and appropriate intervals of administration of this protein poison enable us to produce any form of fever, from an acute fatal to a chronic nonfatal one, or a remittent or intermittent type of fever.

The poisonous nature of this protein substance is probably due to the fact that it is capable of entering into union with certain of the secondary radicles of protein destruction in the cells of the animal.

We would conclude with the statement, that all fever is the result of parenteral protein digestion, and is due to the protein poison. In infectious diseases the protein is derived from the bodies of the infecting organisms. In the fever resulting from severe burns, large aseptic wounds, and the like, the poison is liberated from the absorbed protein of the host himself. In asthma of some types, and in hay fever, the protein enters the circulation through channels other than the digestive tract. We would suggest that the time is ripe for the application of some term to cover all febrile diseases resulting from the parenteral digestion of protein, and offer the term, "albuminal diseases," as the best suited to our understanding of their mechanism.

Therapeutic Notes.

Hydrotherapy in Pellagra.—G. M. Niles, in the *American Journal of the Medical Sciences* for August, 1913, states that for the relief of nausea in pellagra the drinking of from two to six glasses of tepid water once or twice daily, causing emesis, may be usefully prescribed, though lavage once daily is better, provided it can be expertly performed. Placing a cold water bag over the epigastrium half an hour before meals—to be kept on fifteen to thirty minutes—as well as the drinking of iced water, are also advantageous measures.

To alleviate diarrhea the author recommends hot colonic irrigations, followed by cold sitz baths of five to ten minutes' duration; these may be repeated two to four times daily when the patient is not too weak. Cold abdominal compresses, resaturated every hour or two, constitute another valuable measure, and copious water drinking is also generally advisable, tending in this affection rather to relieve than to increase diarrhea.

The so called "long bath," or various hot packs, may be used to improve cutaneous elimination. Burning of the hands and feet can be greatly soothed by either ice cold compresses applied at frequent intervals or baths in hot mustard water. In addition hot leg and arm packs may be employed, as well as revulsive compresses to the spine, hot applications being made for three to five minutes and cold for half a minute only. In the occasional troublesome itching of the skin a cool or cold saline bath is often grateful. It may be prepared as follows:

Sodium chloride,.....7 pounds (3.2 kilograms);
Magnesium chloride, ... 1 pound (150 grams);
Magnesium sulphate, ... ½ pound (225 grams);
Water, ... 30 gallons (113 litres).

In cases of pellagra with mental disquietude, manifested in transient exhilaration and insomnia, a full bath at 94° to 96° F., lasting from one to two hours, morning and evening, is advisable. The soothing effect may be augmented by applying warm compresses to the back of the neck for fifteen minutes three times daily. If desired, sweating can be induced at the termination of the baths by the use of hot packs, and followed by brief cold applications. For mental depression and melancholia the cold percussion spinal douche bath is decidedly useful, though if the patient dislikes it, spinal sponging alternately with hot and cold water may be substituted. In the anemia and debility often following acute pellagra, cold hydrotherapeutic measures are also beneficial, if discreetly used.

Oral Cleanliness.—Hugenschmidt, in *Monde médical* for May 5, 1913, is stated to have recommended that in the teething period, after each feeding, the child's mouth should be cleansed with one of the following solutions, to be passed over the mucous membrane on absorbent cotton:

I.

℞ Acidi borici, ...gr. xlv (3 grams);
Aquæ destillatæ, ... ℥v (150 grams).
S. et ft. lotio.

II.

℞ Chloralis hydrati, ...gr. xv (1 gram);
Aquæ destillatæ, ...℥viss (200 grams).
S. et ft. lotio.

In the adult, powders employed for cleansing the teeth should never be acid, and in general should not contain either charcoal, which leaves a black line at the gum margins, nor phenyl salicylate, which may bring on eczema of the lips. A suitable powder is the following:

℞ Calcii carbonatis præcipitati,.....℥i (30 grams);
Saponis mollis, ... ℥iiss (10 grams);
Sodii perboratis, ...℥i (4 grams);
Olei menthæ piperitæ, }
Olei anisi,..... } .....āā gtt. v.

Misce.

To the above may be added 7.5 grains (0.5 gm.) of powdered pumice stone in cases where the tartar is hard to remove.

Two good formulas for fluid dental preparations, published originally by Miller and Redier, respectively, are:

I.

℞ Thymolis, ...gr. iv (0.25 gram);
Acidi benzoici, ...gr. xlv (3 grams);
Tincturæ eucalypti, ...℥ss (15 grams);
Alcoholis, ...℥iv (100 grams);
Olei menthæ piperitæ, ...♏iv (0.25 gram).
M. Sig.: Tooth wash. One teaspoonful in a glass of boiled water.

II.

℞ Thymolis,..... }
Benzosulphinidi, } .....āā gr. iv (0.25 gram);
Olei cinnamomi, }
Olei caryophylli } .....āā ♏iv (0.25 gram);
Olei menthæ piperitæ, ...♏xxiv (1.5 grams);
Tincturæ krameriæ, ...♏xl (2.5 grams);
Alcoholis, ...℥iv (100 grams).
M. Sig.: Tooth wash. One teaspoonful in a glass of boiled water.

Saccharin alone may be used:

℞ Benzosulphinidi, ... gr. xv (1 gram);
Aquæ destillatæ, ...Oii (1 litre).
Salve.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.

CLAUDE L. WHEELER, A. B., M. D.

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TO OUR READERS AND CONTRIBUTORS.

Last week, in connection with the timely subject of intestinal stasis, the NEW YORK MEDICAL JOURNAL published forty-six halftone illustrations of the finest workmanship, a total surpassing probably that of any other weekly periodical, including even the lay papers. This feat is second only to its own record established on April 27, 1912, when it published, to illustrate Dr. E. G. Abbott's epoch making communication on overcorrection in spinal curvature, ninety-nine halftones. With due appreciation of the honor of publishing the work of medical writers—not only those especially distinguished—the NEW YORK MEDICAL JOURNAL tries to present the result in a manner worthy of the genius and laborious endeavor enlisted in its production. This ideal has not been without its reward, for the author of the communication on spinal correction has since received, in France at least, signal expression of the honor due him. It is not derogatory to his work to say that an inferior presentation might have passed without eliciting proper recognition. We hope, in the future, to earn, in a similar way, a modest share of the prestige of many another contributor.

Our issue for January 24th had other claims upon the special attention of physicians as up to date students; but, for the present, we content ourselves with indicating one point of view only.

THE PREVALENCE OF OPTICIANS' MISTAKES.

We are accustomed to having health trifled with in the interests of business. Not so long ago all the statements made by wholesale drug houses concerning their products were accepted as true, until the Council on Pharmacy and Chemistry found that some were not. Now we have to take the word of the optician who furnishes us our glasses that the lenses are rightly ground, but Hartshorne and Durand show in the October number of the *Annals of Ophthalmology* that this word is not altogether trustworthy. They collected 350 lenses, with a copy of the prescription from which each was made, taking them as they came and not selecting them in any way, except that all not accompanied by the prescription were rejected, and found only ninety-one that were accurate in their grinding. Of 310 glasses containing cylindrical lenses, the axis was displaced more than 2° in 111; 5° or more in fifty-three; 10° or more in fifteen; 15° or more in seven; 19°, 22°, 30°, and 34° in one each. Of the 350 lenses, 117 were decentred more than one mm.; thirty-eight, three mm. or more; eleven, five mm. or more; two, nine mm.; one, twelve mm. These figures demonstrate that the great majority of the 350 prescriptions were not filled accurately, that the patients were furnished glasses that differed seriously from the prescription, and therefore could not be expected to relieve the symptoms on account of which the physician was consulted. The prescriptions were filled by forty-five opticians, twenty-five of whom are in New York city, twenty in other cities. No one optical house ground over sixty-nine of these lenses.

It may be noted that nothing is said of errors of focus; these are the errors usually looked for, and are easy to detect, and are therefore met with much more rarely. The errors mentioned are quite as serious, but are difficult to prove without the aid of special instruments. Many patients bring their glasses to the physician to see if they are correct; he can test the focus by neutralization, and observe whether the glasses are placed properly in front of the eyes, but further he cannot go with certainty unless he has an axis finder and centring machine, which few physicians or opticians own. He may be able to detect, subject to a wide margin or error, a gross variation in axis or centre by means of a chart, and to demand its correction, but he cannot measure the mistake in degrees or millimetres in this way, and therefore cannot speak authoritatively. Hence the writers urge that all physicians who are accustomed to prescribe glasses should provide themselves with one of these

machines, in order to be able to check up the way in which their prescriptions are filled.

There can be no doubt that many of the failures on the part of physicians to relieve eyestrain with glasses have been due to the inaccuracy with which the grinding has been done. All errors noted above are competent to excite symptoms of eyestrain, yet many opticians are disinclined to take the time and trouble to be accurate. It is said (*loco citato*), "one optician doing a big business in New York city has been quoted as saying that it does not pay him to take the trouble to turn out accurate work." Others argue that the doctors are finicky, that accuracy is useless, and that a fair approach to the prescription is good enough. Commercialism still rules in the optical business; it is impossible for big houses to turn out hundreds of lenses daily with only three or four men to check up, without letting errors pass. Ability to sell goods has no connection with accuracy of production. Public opinion has finally forced the optician from his old position—still occupied by the artisan who sneers at the orthopedist's prescription and says that the doctor knows nothing about making shoes—and has compelled him no longer openly to disregard specific instructions how glasses should be made. A step has been made already in this direction, for a few opticians do spend the time, trouble, and money required to be accurate. They are as likely to be found in small shops as in large ones, it may be even more so, and unfortunately they can be undersold readily by those who refuse to incur legitimate expense. Would it not be worth while for them to form an association, with membership limited strictly to those whose work conforms to a high standard of accuracy, which could guarantee profession and public accurately ground and fitted glasses?

THE MODERN TREND IN PSYCHIATRY.

It is not long since the whole subject of psychiatry was enveloped in a haze of uncertainty that promised never to be clear. Later, while the attempts to determine the etiological or pathological phases of these conditions were unsuccessful, the evolution of the present classification, though unsatisfactory, was an improvement, if not a decided advance. In the matter of treatment the advance was entirely in the line of more humane custodial care, of which in most instances the community was relieved only by death. The prognosis was always bad, or given in language oracular in its ambiguity.

Recent developments in psychiatry, however, give hope that a solution of this mystery in medicine is soon to be found. Foremost in this line are the etiological theories, such as the Freudian sex shock and the new art of psychogenesis. The sex shock theory places the cause of the present mental disorder in a previous, and up to the time of the attack, unapparent shock or injury to the sexual complex—the latter term is used in a sense broad enough to embrace the entire sex phase of life—which now finds expression, under conditions of weakened mental constitution, in the psychic disorder. Psychogenesis endeavors to find out by an analysis of the mind the impression or shock, whatever its nature, which has left so indelible a stamp that it now overruns everything else, and is an obsession. This analysis is carried out after a fixed scheme. A series of words are given the patient and he is asked to substitute for each word given another word which the original suggests to him. When he reaches one which suggests to him the subject that has made this deep impression, the reaction time between the given word and the answer is markedly lengthened, and for a time thereafter, the reaction time of words, which may have no relation to the shock, is also lengthened, but in a gradual curve downward to normal. This curve rises every time it meets a word suggesting the shock. On thus finding the offending subjects, and inquiring into them, analysis is not difficult, especially when aided by the patient. Pointing out to him this offending impression serves to make apparent to him both cause and unreasonableness of his confusion—and thus effects a cure.

Psychogenesis, therefore, resolves itself into an analysis of the psychic disorder by the physician, by the reduction of the ideas forming the nucleus of the confusionary complex to their proper size and weight, and making the patient realize that weight and size. It is tantamount to stripping the obsessions of their envelope, which seemingly increases their size and hides from the patient their true nature. It demonstrates to the patient—what other methods have heretofore been unable to do—the unreasonableness of his obsessions.

With the mental defectives, especially the higher feebleminded or morons, a great deal of work has been done along the line of diagnosis. The measuring scales for intelligence, such as the Binet-Simon and its modifications, have brought to light such cases as would have gone undetected before the time of these refinements of diagnosis. Advanced methods in education have placed many of them among the selfsustaining. But practically nothing has been accomplished by way of specific medical treatment, except in the cretinoid variety of mental defectives. Here, the remarkable results obtained by thyroid medication on the

mental as well as the physical condition has led to the belief, or rather to the hope, that the other forms of mental defect are due to similar lack of internal secretions, or of their active principles, the hormones.

These experiments and researches, though in their initial stage as to successful results, are very encouraging. They are scientific, and it is only along scientific grounds that results will be obtained. A vast field will then be opened to the profession, and a great scourge of mankind, one which seems to have an affinity for the civilized, will be eradicated.

OPPRESSION NOT REGULATION.

The physicians of New York will no doubt recall the freak measure which was introduced into the legislature at Albany last year as the Boylan-Kerrigan bill, designed to restrict the sale of habit forming drugs. The author of that measure is, we believe, not a physician, but is the proprietor of a sanitarium in New York devoted to the treatment of patients addicted to the use of narcotic drugs, and has for some years past posed in the public press as a leader in the fight against such drugs. He has drawn up another measure, since introduced by Senator Boylan, which is intended to regulate the sale of habit forming drugs, but which is little less objectionable from the physician's standpoint than its predecessor. There is no question that the increase in the use of habit forming drugs is a serious matter which requires adequate attention, not only from the makers but from the enforcers of law. Our lawmakers should not allow themselves to be made the tools of designing or visionary individuals, even if supported, in apparent good faith, by physicians of prominence, who may draw up measures without due regard to their ultimate effect on public welfare. We think that the legislators would be perfectly safe in making it a rule not to enact any legislation touching the practice of medicine which has not received the approval of the legislative committee of the Medical Society of the State of New York. We feel confident that this particular bill will never receive such approval.

SPLEEN; ITS PATHOLOGICAL FUNCTION.

The drawback involved in collecting the scattered data of pernicious anemia and giving them a common origin in the pathology of one organ is illustrated in Eppinger's interesting yet severely scientific paper, The Pathological Function of the Spleen, in *Berliner klinische Wochenschrift*, [illegible], 1913. To a great extent one can tell pernicious anemia by the histology of the spleen; it would perhaps be fallacious to argue that the pathological function can be gauged by the production of anemia. The character of the spleen in anemia is that of a sort of hemolytic filter, little patches of sclerosis compassed about by wide tracts of peculiar glands called hemolymphs. In these, says Eppinger, "we see the finest pictures (*die schönsten Bilder*) of phagocytosis of red cells." Those which offer the greatest resistance to the injurious process (*ob sie phagocytirt oder nicht phagocytirt*) are at the mercy of the Kuppfer cells in the liver. Losing color and lacking significant form, the red cells tend to a certain emptiness in function; they have little in reserve when the fragile sensitiveness of their structure is tampered with. If the spleen's function, then, is principally that of hemolysis, its effects under the attack of disease are the intenser. Apropos of the assertion that excision is the remedy, we feel that it is not removal of the spleen of which the physician is in quest, but rather its restoration. In the same vein of scrutiny as the author's, we deprecate the attempt to magnify the benefit of operation. Even operation cannot erase the faulty pattern, color, and morbid change of the blood in pernicious anemia. The reduction of urobilin after excision of the spleen is a proof of hemolysis, but as a justification for operation it is in itself insufficient.

THE INTERNAL SECRETIONS AND MUSCULAR ACTIVITY.

With increasing knowledge of metabolism and pathological physiology, one after another of our cherished nosological conceptions is being discarded. "Bilious fever" and "malaria" had been worked hard to cover a multitude of diagnostic sins as have a number of similar more or less meaningless terms. The causes of myasthenia are now to be looked for in the disturbances of the internal secretions. We are all familiar with the myasthenia of Addison's disease, which is caused by the disturbance of the adrenals, or the muscular insufficiency of myxedema, which is due to a diseased thyroid, or the tetany caused by a diseased parathyroid. That the secretions of the ductless glands have a decided effect on the neuromuscular system has been shown by a number of investigators from the time Brown-Sequard observed the dynamogenic effect of testicular extract. Recently, G. I. Markeloff (*Roussky Vratch*, September 14, 1913) determined the effect on the muscles of extracts of different ductless glands, using for his experiments on dogs a gly-

cerin extract of the thyroid, parathyroid, adrenals, thymus, pancreas, pituitary body, and testicles, beside several commercial products. The results showed that in general the glands may be divided into two groups: Those which stimulate muscular activity—the thyroid, testicles, pituitary body, and adrenals, and those which depress muscular action—the parathyroids, pancreas, and thymus. Just what determines the action is uncertain.

PATHOGENESIS AND TREATMENT OF DIABETES MELLITUS AND ACETONEMIA.

R. Lépine, in *Revue de médecine* for October, 1913, asserts that studies on diabetes in the last thirty years have definitely shown diminished sugar combustion to play an important role in the pathogenesis of diabetes. The pancreatic internal secretion exerts a marked influence upon glycolysis; exaggeration (or perversion) of the thyroid secretion has a slight influence, and that of the pituitary is doubtless in part contributory to the glycosuria observed in tumor of this organ. While the adrenal secretion is unquestionably glycogenic and antiglycolytic in certain amounts, its actual influence in the causation of diabetes is at present hard to define; in certain forms of diabetes at least, e. g., that arising from traumatism, increased adrenal secretion may be a factor in the pathogenesis. Phlorizin intoxication, which reproduces grave diabetes in man as regards denutrition, causes an extraordinary lowering of the threshold of urinary sugar excretion, and its study has led to the differentiation of several types of diabetes, due to different combinations of pathogenic factors. Acetonemia is not a mere complication of diabetes, but a necessary end result in all progressive cases, being due to a more or less marked loss of glycolytic power which, in turn, causes carbohydrate starvation, even though a sufficient amount of carbohydrates are ingested and absorbed. A specific remedy exciting glycolysis not yet being available, diminishing, by an appropriate diet, the demands upon the glycolytic function of the diabetic organism remains the best method of fortifying this function. Where disappearance of glycosuria cannot be obtained by restriction or even suppression of carbohydrates, interdiction of meat, in conjunction with the green vegetable or oatmeal cure, will generally procure the desired result. Lentils and beans are very advantageous as regards high ratio of vegetable albumin to starch content; yet rice and potatoes have also at times proved beneficial. Glucose is better borne by rectum than by mouth. Levulose and inulin are sometimes serviceable. A slight excess of meat increases glycosuria, but very little in ordinary cases of diabetes. Egg albumin is likely to be better borne than casein, though individual variations and idiosyncrasies exist as regards the various albumins. The indications for the administration of fats, milk, and drugs, as well as for physical exercise and residence in a warm climate, are also discussed.

News Items.

Changes of Address.—Dr. H. J. Novack, from Newark, N. J., to 3143 Diamond Street, Philadelphia.

Dr. J. Rudis-Jicinsky, from Cedar Rapids, Iowa, to 1900 Blue Island Avenue, Chicago.

Philadelphia Neurological Society.—At the recent annual meeting of this society the following officers were elected: Dr. Charles K. Mills, president; Dr. James Hendrie Lloyd, first vice-president; Dr. F. X. Dercum, second vice-president; secretary, Dr. William B. Cadwalader; treasurer, Dr. N. Yawger; council, Doctor Price, Doctor Burr, and Doctor Rhein.

Dinner to Doctor Maury, of Memphis.—The professional friends of Dr. Richard B. Maury will give a dinner in honor of the eightieth anniversary of his birth, on February 5th, at the Hotel Gaegoso, Memphis, Tenn. Doctor Maury is an ex-president of the American Gynecological Society, and while he retired from work some years ago, he is hale and hearty.

Gift to Medical Department of Washington University.—A gift of $750,000 was made on January 22d by the General Education Board toward the fund of $1,500,000 to be raised by the medical department of Washington University, St. Louis, Mo. The specific purpose of the money given is to create full time teaching and research departments in medicine, surgery, and pediatrics.

Research Work in Cancer.—Announcement is made by Dr. Royal S. Copeland, dean of the New York Homeopathic Medical College, that $25,000 has been given to the institution for research work in cancer. The donor is Mr. Lambert Suydam, of New York, who has long been deeply interested in the scientific investigation of the cause of cancer. With the exception of the Crocker fund, this is said to be the largest single amount ever given by an individual for the purpose.

American Association of Anatomists.—At the thirtieth annual meeting of the association, held recently in Philadelphia, Dr. G. Carl Huber, professor of histology and embryology and director of the Histological Laboratory of the University of Michigan, was elected president; Dr. Frederick T. Lewis, assistant professor of embryology at the Harvard Medical College, vice-president, and Dr. Charles R. Stockard, professor of anatomy at the Cornell Medical College, secretary-treasurer.

Phi Delta Epsilon.—At the annual meeting of the Phi Delta Epsilon Fraternity, held at the Yale Club, New York, the following officers were elected: Grand consul, Dr. Murray B. Gordon, of Brooklyn; first vice-grand consul, Dr. Leo S. Schwartz, of Brooklyn; second vice-grand consul, Dr. Bernard B. H. Aarons, of Philadelphia; third vice-grand consul, Dr. George Piness, of Passaic, N. J.; grand chancellor, Dr. Aaron Brown, of New York; grand scribe, Dr. Ellis Campus, of New York; grand historian, Dr. Irving Gray, of Brooklyn.

Federation of American Societies for Experimental Biology.—At the annual meeting of this organization, which includes the Physiological Society, the Society of Biological Chemistry, and the Society for Pharmacological and Experimental Therapeutics, held recently in Philadelphia, the following officers were elected: President, Dr. Graham Lusk, of New York; vice-president, Dr. Carl Alsberg, of Washington, D. C.; secretary, Dr. P. A. Shaffer, of St. Louis; treasurer, Dr. Donald D. Van Slyke, of New York; councilors, Professor J. J. Abel, of Johns Hopkins University; Professor A. B. MacCallum, of Columbia University, and Professor T. B. Osborne, of New Haven, Conn.

New Officers of the Philadelphia County Medical Society.—The annual election of officers of the Philadelphia County Medical Society, which was held on January 21, 1914, resulted as follows: President, Dr. William Duffield Robinson; first vice-president, Dr. Hobart A. Hare; associate vice-presidents: North Branch, Dr. Harry Hudson; South Branch, Dr. P. L. Balentine; Kensington Branch, Dr. William T. Dempsey; West Branch, Dr. James C. McConnell; Northwest Branch, Dr. Howard D. Geisler; Southeast Branch, Dr. Nathaniel Blumberg; Northeast Branch, Dr. Horatio Pilkington; secretary, Dr. William S. Wray; assistant secretary, Dr. Arthur H. Hopkins; treasurer, Dr. Edward A. Shumway; censor, Dr. Jay F. Schamberg; directors, Dr. Herman B. Allyn, Dr. G. Morton Illman, and Dr. John D. McLean.

International Cancer Research Society.—The study of methods of treatment of cancer is the object of this society, which held its first annual meeting in St. Louis, Mo., on Friday evening, January 9th. Its officers are as follows: Dr. L. N. Ottofy, of St. Louis, president; Dr. Robert Bell, of London, first vice-president; Dr. Juan Antigua, of Havana, Cuba, second vice-president; Dr. S. H. Starbuck, of Seattle, Wash., third vice-president; Dr. Donald MacLennan, of Honolulu, fourth vice-president; Dr. R. W. Anderson, of New Hanaburg, Ontario, Canada, fifth vice-president; Dr. T. R. Baldwin, of Waco, Texas, necrologist; Dr. W. E. Bremser, of St. Louis, secretary and treasurer.

Personal.—Dr. John J. Gilbride, of Philadelphia, read a paper on Dyspepsia Due to Chronic Appendicitis before the Lackawanna County, Pa., Medical Society, at a meeting held in Scranton on the evening of January 20th. At the close of the meeting Doctor Gilbride was the guest of honor at a dinner given by Dr. Charles Falkowsky, president of the society, Dr. T. G. Killeen, Dr. James E. O'Toole, Dr. M. F. Greer, Dr. M. T. O'Malley, Dr. Arthur E. Davis, Dr. J. F. Zychovics, Dr. Harry Jones, and Dr. J. J. O'Connor.

Dr. Walter B. Cannon, professor of physiology at the Harvard Medical School, was elected president of the American Physiological Society, at the annual meeting held recently in Philadelphia.

In the Academy of Sciences of St. Petersburg, Sir William Ramsay has been advanced from corresponding to honorary membership.

Dr. William Shannon, of New York, has been elected president of the medical board of the Misericordia Hospital, and Dr. Daniel J. Donovan, secretary.

Dr. Edward Grant Conklin, professor of zoology at Princeton University, will deliver the Norman W. Harris Lectures for 1913-1914, February 9th to 14th, inclusive, at the Northwestern University, Evanston, Ill., his subject being Heredity and Environment in the Development of Man.

Dr. John A. Robison, of Chicago, has been elected president of the Illinois State Board of Health, succeeding Dr. George W. Webster, who resigned recently.

Dr. Robert E. Coughlin, of Brooklyn, delivered an address on Wednesday, January 28th, his subject being Exercise, Rest, and Sleep in Relation to Health. This lecture is one of a series of health talks given by physicians under the auspices of the Prospect Park Branch of the Young Men's Christian Association.

Dr. Antonio Lagorio, founder of the Chicago Pasteur Institute, was entertained at a banquet given by the Italian Chamber of Commerce, on the evening of January 17th, in honor of his recent election as president of the board of directors of the public library.

Annex for Venereal Diseases at the Long Island College Hospital.—An annex to the Long Island College Hospital has been erected in the rear of the main hospital buildings, in Henry Street, Brooklyn, and is now open for patients. This annex, which is devoted solely to venereal diseases, is said to be the only one in greater New York where a patient suffering with syphilis, or gonorrhea and its complications, can receive hospital treatment, patients of this character having heretofore been forced to enter public city hospitals. The new pavilion is two stories in height and has accommodations for sixty male patients. It is so arranged that the two classes of patients are entirely separated, the upper floor being for gonorrheal patients and the lower for syphilitic patients, with complete equipment of dressing rooms, toilet, and bath rooms on each floor, and separate dining rooms. For patients who are willing to pay a little more for greater privacy, two small wards, one on each floor, with four beds each, have been provided. The medical and surgical treatment is under the direction of Dr. Henry H. Morton, Dr. Homer E. Fraser, and Dr. J. Sturdivant Read, and a special interne from the house staff of the Long Island College Hospital, whose exclusive work is the genitourinary service. The patients receive the most modern treatment, and the nursing is under the care of experienced male nurses. Members of the medical profession and others interested in the work of this department are invited to visit the annex, or to communicate with any member of the staff or with Dr. Richard E. Shaw, superintendent of the hospital, for further information regarding the work or for the reception of patients.

Milwaukee Medical Society.—The following officers were elected at the annual meeting of this society, held on Wednesday, January 13th: President, Dr. R. C. Brown; first vice-president, Dr. Alfred W. Gray; second vice-president, Dr. George C. Ruhland; secretary, Dr. Oscar Lotz; treasurer, Dr. J. P. McMahon; curator, Dr. Phillip F. Rogers.

New Officers of the Pathological Society of Philadelphia.—The officers of this society for the year 1914 are as follows: Dr. D. J. McCarthy, president; Dr. William T. Spiller, vice-president; Dr. George W. Outerbridge, curator; Dr. John A. Kolmer, recorder; Dr. W. H. P. Pepper, secretary and treasurer; business committee, Dr. Allen J. Smith, Dr. W. M. L. Coplin, Dr. Richard M. Pearce, Dr. A. E. Taylor, and Dr. Harold Austin; publication committee, Dr. Frederick H. Klaer, Dr. E. H. Goodman, Dr. E. B. Krumbhaar, and Dr. H. R. M. Landis; membership committee, Dr. A. G. Ellis, Dr. Eugene A. Case, and Dr. Floyd E. Keene.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, February 2d, Academy of Surgery and the Philadelphia Clinical Association; Tuesday, February 3d, Wills Hospital Ophthalmic Society and the Medical Examiners' Association; Wednesday, February 4th, Physicians' Motor Club (directors) and the College of Physicians; Thursday, February 5th, Obstetrical Society; Friday, February 6th, Kensington and Southeast Branches of the County Society.

Termination of Quarantine in Diphtheria.—In accordance with an order of the Commissioner of Health of the City of New York, dated December 8, 1913, patients with diphtheria, and healthy persons harboring diphtheria bacilli in their throats, will not be discharged from quarantine until two consecutive cultures, taken not less than twenty-four hours apart, no longer show the presence of diphtheria bacilli. In Boston, and most of the larger cities of the United States, two negative cultures are required to clear a case of diphtheria, and the department of health requires a similar procedure in cases of diphtheria in its own hospitals. It has been, therefore, inconsistent that outside of these hospitals, where chances of error and poorly made cultures are so much greater, quarantine should be terminated on only one negative culture. The medical inspectors and nurses of the department of health have been directed always to take cultures from both nose and throat if possible, and practising physicians are strongly urged to do the same in cases in which they take their own cultures. All authorities agree that the bacilli often remain in the nasal cavity when cultures from the throat no longer show their presence. The slips accompanying the culture tubes issued by the department of health, and the reports of the examination of such cultures, will hereafter state the requirements as to two negative cultures being required to terminate quarantine.

Mount Sinai Hospital.—Announcement of gifts and endowment of beds was made at the sixty-first annual meeting of the members of Mount Sinai Hospital, held on Sunday, January 25th. Dr. S. S. Goldwater, who on February 1st becomes health commissioner of New York city, after ten years' service in the hospital, will retain quarters in the building, giving advice and assistance when necessary. The business affairs of the hospital will be in charge of Dr. S. J. Morse and the medical affairs will be in care of Dr. A. J. Biller. Doctor Goldwater received an indefinite leave of absence. Dr. A. G. Gerster, of the hospital staff, retired from active duty January 1st, after having been a member of the hospital staff for thirty-nine years. He will be one of the consulting surgeons of the institution. Dr. Julius Rudisch, who had been in the service of the hospital for thirty-four years, also retired to become consulting physician. A silver tea service was presented to Doctor Gerster and Doctor Rudisch received a silver Greek vase. To perpetuate the memory of their parents, Samuel and Harry Sachs gave to the institution $125,000 to endow two neurological wards of fifteen beds. The $100,000 legacy of Mrs. Louis W. Neustadter, mentioned last year, has been received, and under the will of Benjamin Altman the institution will receive $100,000. Three perpetual beds were endowed last year at $5,000 each, two memorial beds at $2,500 each, and three new funds were created, one for $10,000 and two for $5,000 each. The president reported that the total expenses were $460,892.79 and that the income from all sources was $421,381.86.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT

December 1, 1913.

Rheumatism and Tuberculosis.—Menzer believes that chronic rheumatism is due to infection from latent sources which contain streptococci, pneumococci, and not infrequently tubercle bacilli. It is not sufficient therefore to remove the peripheral symptoms; the latent process of infection must be eliminated. The treatment with salicylates should be set aside, because the natural immunizing process must not be interrupted. The treatment should have in view the support of the natural attempt at cure, by baths, warm compresses, vaccination, tuberculin, etc. Then a slow but lasting result will ensue.

Erysipelas versus Nephritis.—F. Glaser reports the case of a twelve year old boy with nephritis, edema, ascites, hydrothorax, who was cured by an erysipelas involving the thorax and thigh. The antitoxic action and the hyperemia of the skin, which produced changes in the circulation of the kidney, were no doubt responsible for the favorable outcome.

Treatment of Urethritis bacterica and postgonorrhoica with Lytinol.—Pakuscher found lytinol a serviceable bactericidal remedy for urethritis. Its action is confined to the soft infiltrates; while the hard ones remain uninfluenced. Even though every case does not terminate in cure, good results are obtained in urethritis bacterica and postgonorrhoica.

Formation of Hemorrhoidal Hemorrhages.—Kirschner, in the case at hand, could not account for the rupture of a larger bloodvessel. Microscopically there were observed hemorrhages into the tissues. One section clearly showed that these hemorrhages were caused not only by diapedesis but through actual tearing of a vessel.

December 8, 1913.

Circulatory Function of "Thorax Pressure."—Hofbauer asserts that the dilatation of the lung which results from the respiratory movements and which is supported by air filling the lungs, produces an elastic force in the organ which brings about the negative thorax pressure. These elastic forces maintain an essential auxiliary power of the right circulation and remain therefore, notwithstanding a continual effort, at a maximum height, because the activity of the respiratory muscles restores the tension of the alveolar walls. The inspiratory muscles represent therefore the source of energy.

Fecal Vomiting in Gastric Crises.—K. Oczesalski observed a case for two years, and was forced to attribute the fecal vomiting to gastric crises in the absence of every other organic diseased process in the region of the gastrointestinal tract. We have to deal here with very strong antiperistaltic intestinal contractions in the course of some crises.

Severe Anemia with Focal Symptoms in the Brain (Aphasia and Hemianopsis).—Knoch's case teaches that on the basis of anemic disease, which need not necessarily be of the severe pernicious type, more or less localized focal brain symptoms may occur, traceable no doubt to vascular disturbances. The clinical findings are disturbances of speech and sight (hemianopsis). The prognosis in these cases is, quoad restitutionem, a doubtful one.

Serodiagnosis of Pregnancy.—K. Fraenkel adds to Abderhalden's reported methods for the serological diagnosis of pregnancy, a procedure brought forth by Rosenthal but up to the present time not sufficiently noted. It is based on Fuld's casein method, and there is found in pregnancy a decided inhibition of the trypsin casein digestion. The author has tested this method and concludes that it deserves equal rank with the two methods already known.

December 15, 1913.

Etiology of Smallpox.—W. Fornet reports his investigations of smallpox. In contradistinction to the glycerin lymph used up to the present time, the ether lymph properly prepared is not only free of bacteria but can be preserved indefinitely. At any rate, it remains effective even when kept in the incubator (*Brutschrank*) for many months. It is possible to make a culture of sterilized lymph in ether, but it possesses less virulence for man and animals than the glycerin or ether lymph.

Role of Contact Infection in Epidemiology of Cholera.—Eckert, speaking from his experiences in Bulgaria, asserts that the possibility of explosionlike appearance of a cholera epidemic by contact in the broad sense of the term is proved by past occurrences in the outlying sections of Tschadaldscha. In Sofia, where the hygienic precautions are excellent, and in the cholera hospital of that city with its modern equipment, there were no cases among the employees and the noninfected wounded soldiers, although the personal hygiene of these persons could not be carried out flawlessly. Flies seem to have no role in the transmission of cholera. The resistance of the cholera vibrios in the human body is much greater than that of typhoid and diphtheria.

Present Status of the Treatment of Malignant Growths: Vaccine Therapy.—Blumenthal says that all previous attempts to influence malignant tumors by vaccines are not altogether without results, even though they leave the solution of this problem very distant. Further work is indicated along this line.

December 22, 1913.

Physical Treatment of Surgical Tuberculosis.—Wachsner thinks the time is past when the diseased members were placed in plaster and the healing process reserved for Nature. Today we intercept the natural attempts at repair and support them by physical aids, as sunlight, artificial light, chemical rays, electricity, heat, Röntgen rays; or attempt by means of removable bandages and frequent change of them to prevent unnatural fixation. Interposing rest cures, with and without extension, and physical therapy between the individual bandage periods, are recommended because of the better functional results. At all events, the author

concludes that modern therapy is better than all previous methods in its cosmetic effects and from the social viewpoint.

Etiology of Diabetes insipidus.—Bálint says that diabetes mellitus can progress with the symptomatology of a diabetes insipidus, which seems to depend on the fact that the permeability of the kidney is markedly compromised. The permeability of the kidney (for sugar) of different persons shows individual variations. A decrease in this function of the kidney causes increase of adipose tissue in the individual. In every case of diabetes insipidus in which no disturbance of the concentration powers of the kidney is present we must think of the possibility of the hyperglycemia, a circumstance of the greatest importance therapeutically for the patient.

Masked Form of Hodgkin's Disease (Lymphogranulomatosis splenomesetaica).—F. Rosenthal's article shows that in considering the differential diagnosis of abdominal typhoid we must take into account a pathological process, though rare, namely, the masked form of Hodgkin's disease.

Decentralization of Psychic Disturbances.—Münzer believes we are obliged, on the basis of modern research, to consider the brain, not only in its functions as a central organ, but also in its varying changes relative to the other organs of the body. With the aid of Abderhalden's investigations and results on the mentally diseased, we are forced partly to "decentralize" the psychic disturbances, that is to transfer their origin from the central organ to those of the periphery. The brain in this case is thought of as the *Reizorgan*. We understand by this that its organization fits it particularly to take up diseased stimuli with an abnormal ease, without being able to balance them. On account of the partial decentralization of psychic disease, new roads are opened therapeutically.

LYON MÉDICAL.

December 21, 1913.

Disseminated Sclerosis with Extensive Lesions but Restricted Symptomatology.—A. Grimaud and Malespine report a case, with autopsy, in which, although numerous lesions were found in the cerebrum, pons, and cerebellum, no tremor, nystagmus, or speech disturbances had been noted during prolonged observation of the patient. The authors consider that, for such symptoms to develop in disseminated sclerosis, either the brain lesions must be very specially localized or an added inflammatory process be present.

December 28, 1913.

Spontaneous Passage of a Large Gallstone.—Campagne and T. Nogier report the case of a man aged sixty years in whom, after a three day period of moderately severe symptoms suggesing intestinal obstruction, a calculus measuring 34 by 28 by 27 mm. was expelled from the intestine, without accompanying hemorrhage or purulent discharge. The stone contained cholesterin and biliary pigments, was transparent to the x rays, and presented a large cup-shaped depression, with sharp margins, on one side. There had been no appreciable signs of pericholecystitis or localized peritonitis, though the stone must have reached the intestine through a fistula.

PRESSE MÉDICALE.

December 24, 1913.

Rôle of Hepatic Insufficiency in Hematemesis in Cases of Cirrhosis.—A. Gouget and R. Pierret, though not denying either the importance of the mechanical factor in the production of gastrointestinal hemorrhages in cases of hepatic cirrhosis or the existence of cases in which a lethal hematemesis is the first evident sign of cirrhosis, assert that a toxic factor, infectious or pharmaceutic (alcohol), is often superadded. Hemorrhage in the alimentary tract is met with in hepatic disorders which are not cirrhosis, and in which no obstacle to the portal circulation exists; hemorrhages from mucous membranes, including epistaxis, indicate special changes in the smaller vessels of the liver in general insufficiency. The authors refer to three cases supporting their view, the most convincing of which was that of a patient with fatty hypertrophic cirrhosis, such as is generally found in alcoholic tuberculous subjects. The hemorrhage was preceded by distinct signs of hepatic insufficiency, such as lassitude, diarrhea, jaundice, and marked evidence of acidosis in the urine. Recent tuberculous foci in the right apex and peritoneum were found at autopsy, and to the resulting intoxication the authors ascribe, at least in part, the ultimate failure of the liver. In another case hematemesis and death followed a drinking bout. The authors believe the risk of hemorrhage attending evacuation of an ascites of hepatic origin by puncture has been overemphasized.

December 27, 1913.

Diarrhea Due to Carbohydrate Indigestion.—Hutinel advises, in the treatment of this condition as met with in children, the administration of kefir or buttermilk, and perhaps a little unfermented cheese. Raw lamb or horse meat—the latter preferable to beef, owing to the possibility of acquiring tenias from raw beef—are often well taken and digested. The meat should be carefully chopped up or made into a pulp, covered with powdered sugar, mixed with fruit jelly, or added to a small amount of skimmed bouillon. The quantity of meat given should be at first ten to twenty grams, according to age, then increased by one to three grams a day up to twenty-five, thirty, forty, or even fifty grams. Sometimes the appetite will disappear in a couple of weeks and the stools become more malodorous. The raw meat should then be reduced or discontinued and a little lean ham or cooked lamb or chicken, chopped up, or a little boiled fish, tried. Where meat in general is badly taken, peptone or meat jelly may be given tentatively. The carbohydrate intolerance being typically of brief duration only, an attempt should soon be made to return to this class of foodstuffs, at first in soluble forms, e. g., sugars, and later in insoluble forms, beginning with malted gruels, then giving noodles, vermicelli and macaroni, and finally, gradually adding well cooked purées, especially of potato. In cases associated with colitis a prompt return to starchy foods is particularly necessary, as protein toler-

ance is rather limited. Fats, preferably fresh butter, should not long be interdicted, but should then be given in small amounts only. In ordering the raw meats, it is often advantageous to combine with them a mixture of pure hydrochloric acid, 0.4 gram, with syrup of limes, fifty grams, and distilled water, 200 grams. Digestive ferments are also useful in some children. To quiet excessive peristalsis, hot poultices, moist compresses, or merely the application of cotton, are of great value. At times small doses of opium are useful. When the diarrhea has ceased, constipation must be guarded against.

SEMAINE MÉDICALE.

December 24, 1913.

Autoanaphylaxis and Paroxysmal Hemoglobinuria.—F. Widal, P. Abrami, and E. Brissaud found that exposure to cold of patients subject to attacks of hemoglobinuria brought on not only hemolysis, but simultaneously symptoms and blood changes characteristic of the anaphylactic shock, viz., a fall in blood pressure of fifty or 100 mm., a pronounced peripheral polymorphonuclear leucopenia—the white cells dropping even to 500 per c.mm.—hypercoagulability of the blood due to lack of antithrombin, a bright red coloration of the blood, absolute or partial lack of clot contraction, and more or less pronounced fibrinolysis, or redissolution of the clot. All these changes occur rapidly and consentaneously, with subsequent prompt return to normal, and are identical with the effects of injections of heterogeneous albumins. Cold was applied in these experiments by having the patients dip their hands in water at 3° to 10°C. for five to twenty-five minutes. Further experimentation showed that the anaphylactic phenomena in these cases are not due to the process of hemolysis itself, but to the liberation of complement and amboceptor by the cold from the antihemolysin with which they are combined in normal plasma; these bodies, in turn, when set free, cause the hemolysis The first anaphylactic phenomena generally appear a considerable time before the hemolysis. All this led the authors to institute a new treatment in paroxysmal hemoglobinuria, which consists in withdrawing 100 to 200 c. c. of blood from a vein of the patient's arm, allowing it to clot at room temperature, centrifugating the serum, and reinjecting twenty to forty c. c. into the patient's vein. This procedure is harmless, and effectually restores the normal stability to the hemolytic complex in the patient's plasma. Series of six to fifteen injections thus given on alternate days in three patients completely eradicated both the tendency to anaphylactic reaction and to hemolysis when the hands were placed in cold water. In one patient this result was maintained a whole year, and in another three months. While the third was soon lost from view, the early effects, however, had been equally conclusive.

BRITISH MEDICAL JOURNAL

January 10, 1914.

Syphilis as Affecting the Health of the Community.—Carl H. Browning has collected and here summarizes the results of investigations made by several observers indirectly under his supervision, on the prevalence of syphilis in many diverse conditions. The effort was made in each case to obtain complete results covering the clinical examination of the patient, the examination of the members of the patient's family, the history of the health of both the patient and his family, and the results of the Wassermann test on his blood and on the blood of the members of his family. It was not possible to obtain all of this information in every instance, but many control tests of the Wassermann reaction were made with blood from persons known to be free from syphilitic infection, and the results were invariably negative, confirming the generally accepted belief in the specificity of this test. Therefore, this reaction has been mainly relied upon for positive diagnosis. Inasmuch as there are cases, almost certainly syphilitic, which give a negative reaction, it is probable that the figures are somewhat too low, although the clinical evidence and the reaction given by members of the family serve, in great measure, to make up for this deficiency. In fourteen per cent. of 331 cases of children attending a general dispensary there was evidence of congenital syphilis. Among 204 cases of mental deficiency and epilepsy syphilitic infection was shown to have been associated with the conditions in fifty-nine per cent. Twenty-five cases of heart disease in children were examined and only seven failed to give a positive Wassermann test. More than seventeen per cent. of eighty-two cases of deafness in children were associated with syphilitic infection. Thirty per cent. of fifty-two cases of ozena, sixty-four per cent. of forty-six cases of suspected aortic aneurysm, and forty-one per cent. of 122 cases of nervous disease gave positive evidence of syphilis. Interstitial keratitis was of syphilitic origin in ninety-five per cent. of thirty-seven cases, and the disease was present in fifty-four per cent. of twenty-two cases of iritis. The disease is practically invariably present in association with cases of paroxysmal hemoglobinuria. Syphilis was present in fifty-nine per cent. of thirty-seven cases of metritis and uterine hemorrhage not associated with tumor, and in forty-six per cent. of thirty-nine miscellaneous gynecological cases. One hundred and four prostitutes were examined and the Wassermann reaction was positive in every case, though half of the girls lived in the best residential quarters. Eighteen families of tramps, comprising 109 persons in all, were tested and showed a positive reaction in each case. From these results no conclusion can be drawn as to the precise prevalence of syphilis in the community, but it is evident that it is ubiquitous and that it causes an enormous tax on health and life. The prevention of the disease is a matter, Browning believes, which must be approached by the widest possible public education in order to compel the recognition of the necessity of compulsory reporting of the disease.

Treatment of Hydatid of the Liver.—C. MacLaurin opposes the recent suggestion that these cysts be excised and the gap in the liver sutured, primarily on two grounds: first, because the marsupialization of the cysts is effective; second, because of the difficulty of suturing the liver, and the dangers attendant on attempts to close large wounds in this organ. He substantiates his first assertion

by citing the results of the last seventy cases of this disease treated by himself and his associates. All were treated by simple marsupialization, together with the insertion of a drainage tube into the cyst cavity for several days to maintain a sinus and insure healing from the bottom. There were but seven deaths in the series, although nineteen of the cysts were suppurating. Two of the deaths were in patients with suppurating cysts, three deaths in cases with ruptured cysts and general peritonitis, and the other deaths were in complicated cases. Healing after this operation is complete in an average time of from three to six weeks.

Guaiacol in Pulmonary Tuberculosis.—George E. Mayberry makes a plea for the more frequent and more persistent use of guaiacol. He says, regarding this abandonment, "1. It was not given in large enough doses; 2, it was not continued for a sufficiently long period; 3, it may not have been possible for the drug to have been administered regularly." On the last point, he remarks, that intervals of only a few days in its administration have a prejudicial effect on its action. It is necessary to give large doses, ranging up to at least twelve or fifteen minims three times daily, and this must be kept up without intermission for periods of months, when highly satisfactory results may be secured. Most of the patients to whom Mayberry has given guaiacol with good results had been under observation in the institution for some time before the administration and had not been doing very well. By giving the drug immediately before the taking of food, no disturbance of digestion resulted from the long continued use of these large doses. The dose of the drug is increased by two minims a week until the patient is taking the full fifteen minims three times a day. The following is the combination in which it is administered: Guaiacol, one dram; alcohol, one ounce; syrup of lemon, one ounce; spirit of chloroform, two drams; water to make six ounces. Of this half an ounce is taken three times daily.

LANCET.

January 10, 1914.

Prophylactic Inoculation against Pneumococcus Infections.—Almroth E. Wright and his associates conclude their report of studies on this question made on South African natives. In addition to the previously reported exhaustive studies on the laboratory and serological aspects of this problem (NEW YORK MEDICAL JOURNAL for January 24th, page 194) they have inoculated many thousands of persons with pneumococcic vaccine, and have carried on simultaneous control observations on thousands of others living under precisely similar conditions but not inoculated. They find that smaller doses of the vaccine than 1,000 million pneumococci are not fully effective in the production of the maximum attainable immunity. They are unable to state the duration of the immunity so produced, but suggest that the dose be repeated after a period of four months from the first inoculation. Small doses, frequently repeated, were found to be absolutely ineffectual in producing immunity. The first test was made by inoculating 5,963 recently arrived natives, and reserving 5,671 more as controls. The doses used in this first test were from 300 to 600 millions. The death rate among the inoculated was reduced by 37.5 per cent. for a period of six months, compared with the controls. These doses were, however, not very effectual after two months, compared with the controls, probably due to the fact that in the controls developed a partial immunity in this time from their having contracted minor pneumococcus infections. This was proved to occur in subsequent observations. Another test was made, similar to the preceding, but with smaller doses. This showed a reduction in the mortality of thirty-one per cent. A third large number of persons were inoculated, and the reduction in mortality for a period of six months rose to fifty per cent. Lastly, in a year's observation on the very large group a reduction of sixty per cent. in the death rate was obtained. With doses much above 1,000 million organisms the immunisation diminished, and when the dose rose to 2,500 million the reduction was only thirty-five per cent. in the mortality. Trials have been made to determine the value of the inoculation as a curative measure after the disease has developed, and while the results were not satisfactory, there is reason to believe that if the disease could be seen at its inception it might be cut short almost at once.

Unpolished Rice and the Prevention of Beriberi.—Henry Fraser and A. T. Stanton cite the experiences of the recent expedition of Wollaston and Kloss in Java as further evidence of the necessity for the use of unpolished rice when this grain is to comprise the major portion of the diet of man This expedition consisted of 204 rice eating Javanese natives and lasted over six months, but not a single case of beriberi developed, although the diet was chiefly of rice. Rice used was all of the unpolished variety, and therefore contained the necessary subpericarpal material, the absence of which leads to beriberi.

Growth, and the Influence of Diet.—Casimir Funk finds that the ordinary diet used to retard growth is lacking in the vitamines, and that it produces typical beriberi in pigeons. He has found, however, that the growth of young chickens can be retarded by a diet rich in the vitamines of unpolished rice, and suggests, therefore, that the vitamines associated with the etiology of beriberi may be different from those related to the production of normal growth. Tests of the effects of these retarding diets on the growth of transplantable tumors have not been very satisfactory, but they give hope for the later development of a dietetic means of retarding such tumors, if not completely preventing their "taking."

Simple Measure for the Perforation of Gastric or Duodenal Ulcer.—Edred M. Corner is of the opinion that the high death rate from such perforations is due more to delay in waiting for the arrival of a competent surgeon and the performance of an elaborate and rather long operation, than to the true severity of the condition itself. Prompt and simple measures give the best results of all, and these can be followed at a later time by the more complicated operation, if necessary. He finds that simple exposure of the site of rupture, removal of the escaped matter, and the insertion of a gauze plug into the perforation is the most successful pro-

cedure. The gauze above the plug is to be wound about a rubber drainage tube and this is to be brought out through the epigastric wound. Healing is rapid and leakage is far less likely than when suture has been attempted. The pelvis should be drained if necessary.

PRACTITIONER.

December, 1913.

Serum and Vaccine Therapy and Their Application to Diseases of Children.—David N. Nabarro describes the difference between serums and vaccines, their advantages and disadvantages, briefly the way in which they are prepared, and the indications for their use. To get the best results from vaccine treatment, "1, you must use the correct vaccine. You must have made your bacteriological diagnosis in the first place; in the case of urines, periodical examination should be made, in order to be quite sure that you have not cleared out the offending organisms, and are trying to treat another organism with the original vaccine. 2. Then the associated conditions must be attended to. It is absolutely useless to try to treat a patient with vaccine,, and leave all other points unattended to. Matters of general hygiene, good feeding, attention to the bowels, fresh air, and so on, are requisite adjuncts to vaccine, as indeed to all other forms of treatment. 3. Local conditions must be treated, surgically if necessary, when occasion arises. For example, collections of pus must be evacuated for the purpose of relieving the local positive pressure, which may be preventing the advent to the infected area of the antibodies which are being formed elsewhere in the body. A large collection of pus with a positive pressure inside will prevent the antibodies from reaching the region where they are most required. In diphtheria the local lesion must be treated by a germicide to kill the bacilli and so prevent more toxin from being elaborated and absorbed into the system. A stone in the bladder or in the kidney will often give rise to a bacilluria. It is obviously useless to treat such a bacilluria with a vaccine while the stone is still present. 4. The proper dose and the proper intervals between the injections must be attended to, and regulated by the reaction produced."

Local Treatment of Vincent's Angina with Salvarsan.—J. D. Rolleston reports a case of Vincent's angina met with in a man who presented no evidence of syphilis and in whom Wassermann's reaction was negative, successfully treated with salvarsan applied locally in glycerin.

Venereal Diseases as We See Them Today.—J. E. R. McDonagh discusses the advances made during the past year in this line, one of the most important of which is, he thinks, the attempt by the lay press to remove the veil covering venereal diseases. Whether syphilis should be made notifiable or not, he holds that this will be useless unless medical men are better trained in venereal diseases than at present. There is nothing new to state about acute gonorrhea. Vaccines are sometimes good, but often have no value; the best form is the sensitized. In the treatment of soft sores caused by Ducrey's bacillus, operative interference makes matters worse, and x rays and radium are useless; but ionization may help, provided the wounds are dressed with iodoform and camphor phenol, and increasing doses of iodides are given internally, which may bring about a cure without the ionization. He seriously questions whether Spirochæta pallida is the sole cause of syphilis. "If we pause and ask ourselves: Why is the incubation period of syphilis so long? Why do not one or two injections of salvarsan cure every case? Why has no one ever seen Spirochæta pallida divide? Then our faith begins to wane."

BOSTON MEDICAL AND SURGICAL JOURNAL.

January 8, 1914.

Effect of Digitalis on the Blood Pressure and Pulse Pressure in the Presence of Cardiac Decompensation.—Charles H. Lawrence reports observations made on twenty-six patients with cardiac decompensation from various causes, including valvular cardiac disease, arteriosclerosis with myocardial degeneration, angina pectoris, and chronic nephritis with hypertension. The digitalis was administered in the form of digipuratum, usually two or three tablets daily, in all but one case, which received an active tincture. A brief description is given of each case, together with the average blood pressure readings before, during, and immediately after the use of the drug; also at the time of discharge from the hospital. The presence or absence of diuresis, and the other effects of treatment are also noted. Of these twenty-six cases, five, or nineteen per cent., showed a rise in systolic pressure, the greatest increase noted being thirty mm. Hg. None of these showed diuresis. Four cases, fifteen per cent., showed no change in systolic pressure, and none of these showed a diuresis. Seventeen cases, sixty-six per cent., showed a fall in systolic pressure either during or immediately after the administration of digipuratum. Of these, eighty-eight per cent. showed a diuresis. Only one case showed a rise in diastolic pressure, and had no diuresis. Four, fifteen per cent., showed no change in diastolic pressure; of these, seventy-five per cent. had diuresis. Twenty, seventy-four per cent., showed a fall, and sixty-three per cent. of these had diuresis. Twelve cases, forty-five per cent., showed an increased pulse pressure, with diuresis in half of them. Three cases showed no change in pulse pressure, but all had diuresis. In eleven the pulse pressure was decreased, and diuresis appeared in eighty-one per cent. of these. Of the twenty-six cases, eighteen were discharged relieved; seventy-six per cent. had a fall in systolic; eighty-six per cent. a fall in diastolic pressure, or just after the administration of the drug. From these figures it appears that in the presence of cardiac decompensation digipuratum causes a fall in blood pressure as a rule, which is usually associated with an increased excretion of urine. The conclusions of the writer are: The effects of various drugs on the blood pressure, as determined by experiments on animals, do not furnish reliable criteria for the administration of such drugs to man, since the effect may be quite different in the latter. The pressure-raising effect of digitalis noted in animals and in healthy individuals does not occur, as a rule, when the drug is administered to

individuals suffering from cardiac decompensation. The cause of the cardiac decompensation does not appear to affect the action of the drug. Digitalis preparations may be safely administered to patients suffering from arteriosclerosis, angina pectoris, or nephritic hypertension, if cardiac decompensation is present; under such conditions it rarely causes a rise in the blood pressure.

January 15, 1914.

Measured Feeding for Older Children.—William R. P. Emerson recommends that more attention be paid to the feeding of older children, particularly when they are underweight. He prefers the calorie percentage method of estimating food values, proposed by Irving Fisher, in which tables are prepared showing the amount of each food necessary to furnish 100 calories. A slice of bread, a pat of butter, the lean meat on a lambchop, five ounces of milk, one slice of bacon; each has a value of 100 calories. A child from six to fourteen years of age and from ten to twenty pounds underweight needs between 2,000 and 3,000 calories of food per diem to obtain the proper gain. Both physician and parent need an adequate knowledge of food and food values, then the cooperation of the child is necessary, which may be obtained in boys by appealing to their ambitions in athletics, in girls to their attractiveness. The child then keeps a forty-eight hour record of all food eaten, which will show how much food is habitually taken, as well as its kind, and reveals the likes and dislikes of the child. With this as a basis, if the calories are below 2,000 a day, variations may be made in such a way as to bring the number of calories up to or above the desired amount. Then if the child does not increase in weight it is because he is suffering from some organic disease. Children underweight seem to have a remarkable ability to digest food, taking as high as 3,500 calories without digestive disturbances. Measured feeding shows almost invariably that a child without organic disease is underweight because he does not eat enough, and overweight because he eats too much. When children are overweight, symptoms of indigestion disappear in a remarkable manner with a diminution of the day's ration. Balanced diet, a proper proportion of protein, fat and carbohydrates, needs attention only in a general way in health, as taste regulates this in most instances. Changes in diet should be made gradually along lines of least resistance. Quite a list of foods is appended giving the food values of each.

Leprosy.—James A. Honeij says that the study of leprosy has been so largely devoted to the bacteriology and pathology of the disease that the many clinical aspects presented have not been emphasized. From practically no early symptoms, or such as are indefinite and vague, the progress of the disease carries with it a variety of symptoms, subjective and objective, to the final stages. He speaks first of the lesions, ulcers, nodules, bullæ, eruptions. Pain varies so considerably that it is probably of little value as a symptom. Sweating often follows severe chills during the febrile attacks when the patient is in a low physical condition. When the disease is advanced, the patient's health varies daily; he feels very well one day, and the next presents every symptom and appearance of a seriously sick person. Physical examination reveals nothing to compare with the severe symptoms and general appearance. During the eruption the skin is usually hot and dry. Extreme mental depression at irregular intervals, and nervousness are characteristic of every case. Ulcers may heal rapidly and continuously, or may become chronic and not respond to treatment. Medicinal treatment varies in every case. The clinical symptoms, though somewhat confused and often indefinite, are to be carefully observed and seriously considered. The study of the pulse, temperature, and blood is particularly important.

Appendectomy in a Bleeder. Blood in Vomitus and Stools. Massive Hematoma and Ecchymosis. Recovery.—Torr Wagner Harmer reports a case sufficiently described by the title of his paper as a reminder of a serious surgical complication, and of the common negligence to inquire about bleeding in obtaining the history of the case. He also calls attention to the unusual symptom complex: Rise of temperature and pulse, vomitus of the appearance of that of peritonitis, but expulsive in character; belly without spasm and comparatively soft; stools of old blood, some copious and voluntary, and a massive hematoma and ecchymosis of the abdominal wall.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

January 17, 1914.

Intraspinal Injection of Salvarsanized Serum in the Treatment of Syphilis of the Nervous System, Including Tabes and Paresis.—W. H. Hough remarks that it is the opinion of all who took part in a recent discussion of this subject at the New York Neurological Society that we have in this procedure the most promising treatment for tabes and paresis which has yet been recommended. The technic is that devised in 1912 by Swift and Ellis, of the Rockefeller Institute. If practicable, eight or ten treatments, one every second week, should be given. The treatments should then be discontinued, but repeated, if necessary, after an interval. As an index, there should be employed the Wassermann blood reaction, the Wassermann spinal fluid reaction, and the cell and protein estimations of the spinal fluid. Mercury and iodide, if indicated, should also be administered. The author cites some of the results noted by other observers, and states that his own experience consists of thirty-six treatments administered to six patients in the Government Hospital for the Insane, Washington; but as two of the patients received but one treatment each, he reports but four cases. It is too early, he says, to predict what the outcome will be in these cases, but there has been pronounced improvement in the four referred to, and symptomatic improvement in three.

Autoserosalvarsan Treatment of Syphilis of the Central Nervous System.—G. W. McCaskey states that, after giving twenty treatments to seven patients over a period of about three months, he has seen in some instances remarkable improvement. He believes that the method, in careful hands, with perfect asepsis and cautious doses,

is devoid of danger, and offers a new and rational means of treating localized infection in cases of cerebrospinal syphilis.

Present Day Danger of Röntgen Ray Burns and How to Prevent Them.—G. E. Pfahler says that recently there have come to his attention a number of serious Röntgen ray burns produced by unskilled men during single examinations. It is a fact, however, that today the Röntgen rays are absolutely harmless when properly used. It is also a fact that the Röntgen rays, as such, are many times more dangerous today than ten years ago, because many times more powerful and because the apparatus today is capable of a much larger output in a given time. To avoid burns, one must first keep in mind these principles: 1. To use as small a quantity of rays as is consistent with the examination. 2. To use a quality of rays which will penetrate the tissues, and not be entirely absorbed by the soft tissues. 3. To make every examination as short as possible; thereby lessening the total amount of rays to be absorbed. 4. To use intensifying screens when practicable. 5. To use filters for the elimination of the softer rays. 6. To confine the rays to the part actually under examination. Burns of the operator may be avoided: 1. By keeping entirely out of the field of rays, by working from an adjoining room with lead lined walls between, or by the use of lead lined cabinets; 2, by confining the rays about the tube, so that the only exit is through the aperture made for the examination of the patient; 3, by means of protecting shields, aprons, gloves, masks, etc. Burns during Röntgen ray therapy may be avoided: 1. By following the same general principles as in diagnosis; 2, by measuring each dose given, and never exceeding the limit of skin toleration, as indicated by the dose metre; 3, by allowing an interval of three weeks between the repetitions of the dose on any particular area of skin; 4, by more filtration than would be used in diagnostic work; 5, by keeping in mind the fact that epithelium and glandular tissues are more sensitive to the rays than other tissue; 6, by avoiding any other form of irritation on the skin treated.

Treatment of Tetanus by the "Rational" Method of Ashurst and John.—W. V. Brem mentions first that Ashurst and John have concluded that the rational use of tetanus antitoxin consists in, 1, the intraneural injection of antitoxin; 2, the intraspinal injection; 3, the intravenous injection; and, 4, the infiltration of the tissues about the site of the injury. The quantity used should be very much greater than has generally been given by the subcutaneous route. The author states that in consequence of the results of certain experiments which he had made on guineapigs, he was ready to accept the views of Ashurst and John when their article appeared, and shortly afterward he had an opportunity to apply successfully their methods to the treatment of a patient with cephalic tetanus. The main facts of the case are as follows: Injury by baseball on upper lip; six day incubation period; intraneural, intraspinal, and intravenous injection of 98,000 units of tetanus antitoxin and infiltration of lip about injury; suppurative serum (aseptic) meningitis following intraspinal injection of antitoxin; rapid recovery.

MEDICAL RECORD.

January 17, 1914.

Diagnosis and Treatment of Lumbosacral Pelvic Pain.—F. P. Henry considers lumbago undoubtedly the commonest form of lumbar pain. Obstinate "lumbago" in the female should invariably lead to a uterine examination. From a large experience with typhoid fever, he doubts its connection with so called "typhoid spine." The *spondylose rhizomélique* of Marie is simply osteoarthritis of the intervertebral articulations, and may be recognized, when well advanced, by spinal rigidity, cervical cyphosis, and the regular involvement of the shoulder and hip joints. One variety of lumbar pain is of the utmost importance—that dependent upon metastatic carcinoma of the vertebræ. While in most instances the diagnosis of lumbago is a very simple matter; the affection has even been confounded with abdominal aneurysm. The term lumbago is undoubtedly a serviceable cloak for ignorance; but it is not likely to be discarded, because it serves as the name of a genuine disease, which Gowers, who has done more than anyone else to elucidate this obscure subject, regards as an inflammation of the fibrous tissue of the muscles, and not of the sensory nerve endings. Lumbago affords one of the best examples of the importance of early treatment. The salicyl compounds should be given a trial, and the author has seen excellent results from a single early large dose of quinine—from ten to twenty grains. Rochelle salt may be given, in dram or half dram doses, every hour or two until the urine is alkaline and the bowels are freely moved. A Turkish bath may be of service in the early stage. When the affection is established, rest is imperative. Iodine, preferably in combination with a vegetable protein, may prove useful. Local treatment, consisting of dry cups, deep massage, and the faradic current, should also be instituted.

Alcohol and Racial Degeneracy.—L. M. Maus, from his study of this subject, concludes that there remains no longer any doubt regarding the ruinous effects of alcohol on the human race; so that it becomes the duty not only of the State, but of every intelligent man and woman to join in the crusade against the common enemy. Society, he says, must prevent its own ruin and degradation at any cost, and defend the innocent members of the community from the great destroyer. In view of what medicine has taught us regarding alcohol and racial degeneracy, it seems inconceivable that so many should continue its use.

Value of Crotalin in Epilepsy.—T. J. Mays discusses the efficacy of crotalin and states that if his deductions are confirmed by further experience, the following therapeutic points in the administration of the drug will be established: 1. As a rule, crotalin has the power of relieving the paroxysms of epilepsy if given in suitable doses. 2. The average maximum dose lies between 1/100 grain and 1/50 grain, though probably in every case the former must be preceded by minimum doses. 3. Crotalin has more power to relieve epilepsy than the bromide compounds.

The Case against the Eugenists.—J. F. Sheehan says that, supposing that the inferior stocks are actually more prolific than the better ones, the question remains whether the effect on the race is as serious as some believe. Applying biological conceptions scientifically, we know that large fluctuations may have the same exterior appearance as true mutations, but their effect will be very different in after generations. It cannot be denied that the fundamental strains constituting a population are intimately interwoven; neither can it be denied that in individuals certain variations arise from the conditions due to breeding and germinal quality. Should not physicians and those who have a special interest in eugenics turn their attention first to the psychological conditions resulting from the laws of blending, to see whether these conditions would not be more important for serious study than physical genetics? Before we can safely advance along the lines of social progress there is a vast amount of scientific work to be done in the line of heredity. The strict application of eugenic ideas must await the progress of biological knowledge.

Venesection in Cerebral Hemorrhage.—A. MacFarlane states that in apoplexy the hemorrhage is usually from a branch of the artery of the fissure of Sylvius, and the vital indication is to promote coagulation at the point of rupture. While it is very doubtful whether we can increase the coagulability of the blood in a way to be of service here, it is within our power to modify the vascular pressure by two measures: 1. It has been shown by experiment that hemorrhage from the middle cerebral and its branches may be controlled for a considerable time by compression or ligation of the carotid on the same side; 2, venesection or arteriotomy of the temporal artery.

AMERICAN JOURNAL OF TROPICAL DISEASES AND PREVENTIVE MEDICINE.

November, 1913.

Classification of Amebas.—C. F. Craig gives a classification of ameba, including the parasitic forms, which he believes best suited to a working basis in the present state of knowledge. He states that the most researches have shown *Entamœba, tetragena* and *E. minuta* to be identical with *E. histolytica,* while *E. nipponica* is identical with *E. coli.* The first, second, and fourth of these names should therefore be dropped from the nomenclature. The question of the specificity of these organism is still *sub judice,* though another parasitic form, *E. buccalis,* is undoubtedly a true species.

Malta Fever in Louisiana.—Creighton Wellman, Allan Eustis, and S. S. Schochet made agglutination tests with the melitensis organism in forty-six cases of continued fever with negative Widal reaction, and detected one case of Malta fever. The organism was obtained in pure culture from the blood. An acute arthritis of the elbow was one of the typical features of the case. Before death the patient manifested a myocarditis with soft, systolic, apical murmur.

Mounting of Mosquito Larvæ.—W. V. King recommends killing, hardening, and clearing the larvæ with a solution of pure phenol crystals in an equal amount of absolute alcohol. After remaining fifteen to thirty minutes in this solution the larvæ are permanently mounted in a medium made by dissolving small lumps of pale colophonium in rectified oil of turpentine.

LONG ISLAND MEDICAL JOURNAL

November, 1913.

Some Phases of Inherited Syphilis.—Paul L. Parrish says that the deaths from this disease were three and four tenths per 100,000 in 1900, and in 1909 they had risen to five and six tenths. "It is doubtful if the reported cases represent more than one in fifty of the deaths actually due directly or indirectly to this disease." Parrish believes that either parent may transmit the disease to the offspring, and cites evidence to show that it may be possible for the disease to be transmitted to the fetus by the sperm, the mother remaining uninfected. He says that a woman has been known to give birth to a syphilitic infant, following impregnation by an infected man, and subsequently to have become the mother of normal healthy children, through impregnation by a healthy man. He believes that it is possible in such a case that the placenta acts as a filter, the mother becoming vaccinated by the modified virus passing into her circulation. The mortality of syphilitic infants seems to be the greater, the earlier the symptoms appear after birth. The mortality is about sixty to seventy per cent. In studying the records of a single hospital in Brooklyn, it was found that over eleven per cent. of all the children admitted were syphilitic. The institution is not a foundling hospital, which would make the findings seem to indicate a very high incidence of syphilis among the poor population. The largest proportion of infected children were Italian, next came Russian Jews, and the Irish were third in order of frequency. Of forty-five patients, sixty-five per cent. died, over forty per cent. succumbing before reaching the age of six months.

OPHTHALMIC RECORD.

November, 1913.

Orbital and Ocular Neuralgia Due to Dental Irritation.—H. V. Wuerdemann reports a case in which the patient complained bitterly of pain back of the eye, the vision of which was slightly affected and the visual field somewhat contracted. The papilla was rather congested. Examination revealed a gold capped tooth, the left upper second molar, which was sensitive and had been recapped several times by different dentists during the past year. Extraction of the tooth was advised and performed, when a dental spud was found extruding from its posterior root about one sixteenth of an inch. The pain back of the eye was completely relieved, the vision improved to normal, the blurring disappeared, and the visual field was nearly normal two days after the extraction of the tooth.

SOUTHERN MEDICAL JOURNAL.

November, 1913.

Endometritis.—W. F. Shallenberger, after referring to the characteristics of the normal endometrium and to the menstrual cycle, states that

there is a certain group of cases in which a true glandular hypertrophy occurs, the patients usually being young girls who suffer from excessive menstrual flow. Polypoid endometrium is another definite pathological entity, in which the uterus is filled with irregular polypoid masses or thickenings of the endometrium; while the glands are enlarged and there is an increase in the bloodvessels. These endometrial changes do not, however, constitute a true endometritis. The latter occurs in acute and chronic forms. The acute form is readily recognized under the microscope; there is a swelling of all the cells of the endometrium, with edema and small round cell and polymorphonuclear infiltration. Chronic endometritis, in the sense of a persistent chronic inflammation of the endometrium, is now believed to be comparatively rare, owing to the abundant blood supply and the natural position of the uterus for drainage. As Kelly says, true endometritis is a disease as rare as cervicitis and endocervicitis are common.

Relation of the Physician to Future Generations.—E. A. Rowland says that the duty of the practitioner of medicine is plain. By insistence upon required medical and surgical measures he may exert an influence which will affect thousands in the years to come. The greater proportion of criminals and the mentally deficient show evidence of hereditary syphilis and uncinariasis, the toxins from which affect the mental and moral attitude, as well as the physical condition. Also, the deficient oxidation caused by adenoids and hypertrophied tonsils and turbinates affects the brain and nervous tissues to the same degree that it does other structures, and, since brain and nerves are slowest in regaining normal tone, we may expect a permanent mental change which will make for mental deficiency and moral degeneracy. The great scope for improvement of the body, mind, and morals of the race in the hands of the physician of today is really wonderful.

Cardioptosis.—P. T. Fleming reports a case, which is of traumatic origin and seven years' standing. As the result of a blow from a heavy pole with which he was prizing up a log, the patient, a laboring man, states that his heart was displaced upward at least two inches, and remained in this position three or four minutes, during which time he could breathe only with the greatest difficulty. When the heart came down, instead of stopping in its normal place, it continued to descend until about two inches below the normal. His condition now is such that when the patient is standing or walking his heart descends too low. It remains in normal position when he is sitting and leaning a little forward and also when he is recumbent, with head and shoulders slightly elevated; but if he lies with head and shoulders below the level of the body the heart rises about two inches too high up. When he is lying down the heart beats slowly (from forty to sixty a minute), but about normally when he is sitting or standing. No valvular lesions were found, and no intermissions in the beats. He wears a belt close up under the ribs, which holds the heart up fairly well and enables him to walk and work with comparative comfort.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

November, 1913.

Chronic Ascites.—John R. McDill believes that patients with chronic ascites pay too dearly for relief from distention by tapping if the transudate, which is rich in proteins, salts, and the characteristic constituents of the tissues and fluids of the body, can be turned back into the blood stream from which it came. Ascites patients have an impaired vital resistance, deficient powers of repair, and do not stand well extensive operations under a general anesthesia. A number of rather formidable operations for serous effusions have been successful either by herniating an abdominal organ with the idea that this produces collateral circulations, or by a silk lymphangioplasty based on the principle of capillary drainage. Study of these clinical cases, and some experiments, seem to show that a fluid aided by pressure and gravity leaks under the skin along the space between the omentum, etc., or the silk, and its surrounding tissues. If this is true, a simple operation with short silks will provide gradual drainage of the peritoneal pond. The experiments show that ends of the three strands of No. 20 silk sewed together, slightly projecting into the lower levels of the peritoneal cavity become a permanent silk connective tissue peg; that the breach it makes in the abdominal wall allows the escape of fluid, and that the hernia liability is nil. The procedure need not confine the patient to bed for more than one day, is not much more formidable than an ordinary paracentesis abdominis, and can be repeated if necessary at any subsequent tapping until there is sufficient drainage. The permanency of any improvement will depend upon the internal treatment. The technic consists of passing three strands of silk through a cannula which has been passed into the abdomen for a paracentesis, then securing the proximal ends subcutaneously.

Acute Hemorrhagic Pancreatitis.—G. W. Whipple and E. W. Goodpasture show experimentally that the peritoneal exudate in acute hemorrhagic pancreatitis contains no toxic substance. It is harmless when injected intravenously or intraperitoneally in large amounts into normal dogs or those suffering from acute pancreatitis. The ferments which escape from the injured pancreas are rapidly neutralized, and this peritoneal exudate usually is free from proteolytic ferments and contains the same amount of lipase as does the blood serum. A hemorrhagic peritoneal exudate may be looked upon as having a neutralizing action and appears to benefit rather than injure dogs suffering from acute pancreatitis. Dogs with acute hemorrhagic pancreatitis which are subjected to exploration and removal of peritoneal exudate will appear sicker than control dogs left undisturbed. The pancreas can survive remarkable grades of injury and this factor of safety should always be considered in drawing deductions from any surgical procedure. Its capability of repair seems greatest when the gland is left undisturbed in a closed abdomen.

Irregular Kidney Vessels Found in Fifty Cadavers.—R. R. Rupert observes, after a careful study of fifty cadavers, that anomalous renal ves-

sels occur more frequently than is generally supposed. Anomalous veins are as important to consider as anomalous arteries. While anomalous veins are not as frequent as anomalous arteries, their presence increases the hazards of renal operations especially in a nephrectomy. On account of the thinness of their walls they give but little, if any, more resistance to traction than a small adhesion, and as pulsation is absent, an anomalous vein is difficult to differentiate from an adhesion, unless it can be drawn into the field.

Proceedings of Societies.

WESTERN SURGICAL ASSOCIATION.

Twenty-third Annual Meeting, Held at St. Louis, December 19 and 20, 1913.

The President, Dr. JABEZ N. JACKSON, of Kansas City, **Mo., in the Chair.**

(*Continued from page 202.*)

Cholecystitis and the Factors that Control Results of Operation.—Dr. CHARLES H. MAYO, of Rochester, Minn., said that the results of operation for cholecystitis were influenced by many conditions besides those in the gallbladder itself. Among these were infections within the liver and bile ducts which caused changes in the balance of the acidity of the stomach and of the alkalinity of the duodenum, the presence of pyloric spasm, and changes in the pancreas. Worthy of especial attention was a group of lymphatic glands extending along the common and hepatic ducts and on the cystic duct. Any case of cholecystitis with sufficient infection to produce symptoms would necessarily affect these glands. In the majority of cases, if these glands were much enlarged, one would find a lymphedema of the head of the pancreas as well as the infection of the gallbladder. An exception was the general swelling of the mesenteric glands through malignancy or gross abdominal infection. The majority of cases of cholecystitis were undoubtedly best relieved by cholecystectomy.

Repair of the Common Duct by Means of Transplanted Fascia.—Dr. CARL B. DAVIS and Dr. DEAN D. LEWIS, of Chicago, stated that following partial destruction of the common bile duct, temporary continuity of the passage of bile had been attempted in a variety of ways. In those cases where the remnant of the choledochus could not be implanted into the stomach or duodenum, two methods of repair had been used—the use of a foreign body, such as a rubber tube, and various forms of plastic use of the tissues of the body. Sullivan, in 1909, successfully used a rubber drainage tube as a link between the hepatic duct and the lumen of the duodenum. His work was done on dogs. About the same time Wilms and Brewer reported the success of the same procedure in the human subject. Since that time numerous similar cases had been reported. In most of the cases the tube had passed into the digestive canal and had been expelled. In other cases it had been necessary to reopen the abdomen to remove or readjust the tube. Cahen recently reported a case where the tube did not pass and the autopsy showed an enormous liver abscess. Enderlen had repaired defects in the gallbladder with omentum. Baldassari and Gardini used flaps of serosa and muscularis for the same purpose. Kehr reported the use of detached flaps from the stomach to repair the choledochus. Kausch and Stubenrauch had constructed tubes, using all the layers of the jejunum and stomach, and anastomosing with the permanent biliary fistula already established. The successful use of transplanted fascia in reinforcing the gastrointestinal and urinary tracts led them to believe that fascia might be of use in surgery of the biliary system.

In their work they had transplanted free fascia from the abdominal wall to bridge gaps in the common duct and to patch partially severed ducts. In all cases the gastrohepatic omentum was destroyed in so far as any support was given to the choledochus. In one series of cases the common duct was cut across and the ends allowed to retract until they were one half to one inch apart. A strip of fascia was removed from over the rectus, passed beneath the ends of the severed duct, fastened by silk sutures to the proximal portion of the common duct, and passed well up on the cystic and hepatic ducts. The repair at the distal end was done by fixing the fascia to the duodenum behind the entrance of the distal end of the duct into the gut. The fascia was then folded over to form a tube and two continuous sutures were used to make the calibre as watertight as possible; over this the omentum was wrapped as an extra precaution. In the second series of cases, the common duct was cut partially across and then slit lengthwise for one half inch. A strip of abdominal fascia was placed around the duct and the abdomen closed without drainage. In eleven cases it was necessary to close the abdomen without drainage, as the animals pulled out tubes and gauze in the first twenty-four hours. In some cases the operators tried to divert the bile from the field of repair by draining the gallbladder, but lost the animals by extravasation of bile into the abdominal cavity after the tubes had been removed by the dogs. Wherever a leak occurred in the region of the flap, the experiment failed. This occurred in three cases—two in the first series and one where the duct was merely slit up. Five dogs were lost from infection of the abducted wall. Three dogs lived two months in the first series. Two of them when killed showed a patent common duct and stools of normal color. The third dog, which lived sixty-five days, had a constriction at the duodenal end. The bile ducts were distended to an enormous degree. The fascia was alive and as resistant as the normal tissues. In one animal where the bile duct had been slit longitudinally, the fascia was sutured too tight at the duodenal end—resulting in marked distention of the gall tracts. In this case the fascia was alive and strong enough to retain the bile.

Ulcer of the Stomach in Children before Puberty.—Dr. CHARLES D. LOCKWOOD, of Pasadena, Cal., stated that ulcer of the stomach in children was relatively rare, but probably much more frequent than heretofore believed. Many obscure abdominal conditions in children might be due to

unrecognized ulcers. He had made a careful review of the literature, and a number of unreported cases had been discovered through personal correspondence with the members of the Western Surgical Association, other surgeons of large clinical experience, and Children's Hospitals of the United States and Canada. The rarity of ulcer in children was explained by the position of the child's stomach, permitting rapid emptying, the small amount of hydrochloric acid present, and the good motility. The factors favoring ulcer were malnutrition, tuberculosis, burns, local injuries, leucemia, septicemia, anemia, and chlorosis in young girls, and follicular gastritis. Ulcers in children were more often superficial erosions. The typical funnel shaped, deep ulcer found in adults was rare; when present, it was not so often found in the pyloric region and perforation was common. Perforation had been reported oftenest through the posterior wall, through the lesser curvature near the cardia, and through the greater curvature into the pancreas, as in his own case. Gastric ulcer should always be thought of in children with abdominal symptoms. Pain in the epigastrium, hemetemesis, and bloody stools were pathognomonic. The two latter were usually absent. Pain, worse at night, and indigestion were usually present. Diagnosis must be confirmed by microscopic examination of stomach contents and stools, for concealed blood. Appendicitis was most often confounded with ulcer. In his case, palpation of the epigastric region during a paroxysm of pain had first suggested ulcer. Gas could be felt to gurgle through the pylorus, followed by relaxation and relief of pain. This was believed to be an important diagnostic sign.

Inoperable Cancer: The Best Methods of Discovering Its Activity. A Study of Heat in Cancer.—Dr. J. F. Percy, of Galesburg, Ill., discussed specifically the relation of heat to cancer, and emphasized the vulnerability of cancer to heat. He referred to the work of E. Vidal as important, showing that the use of various serums, toxins, and vaccines produced no results in the treatment of cancer, if they failed, when administered, to raise the temperature. He, therefore, concluded that these various methods owed their success largely to their fever-producing qualities. The various reports of diminution of malignant tumors, following infections such as erysipelas, assumed a new significance. In experiments made on beef muscle a mass was entirely coagulated in sixty minutes. It was logical that there might be hope for the eradication of cancerous growths by attacking these morbid processes through their vulnerability to heat.

It remained to evolve, therefore, a method of applying heat to the tumor mass to a degree of efficacy that would permit of the greatest destruction of carcinoma cells with a maximum conservation of normal tissue cells. His own method for the application of heat in the treatment of carcinoma had none of the objections that could, with reason, be advanced against the various other methods. The penetration of heat could be definitely determined and regulated. Its applicability had almost no limitations where the malignant process was at all accessible. The required apparatus was not expensive, and was easily portable. The method consisted of the application of heat from an electrocautery accurately controlled by a rheostat, and applied to the affected tissues. Heat, and not cauterization, was the object to be attained. Cauterization was responsible for the early formation of a charcoal core, and this interfered with the dissemination of heat, and later prevented drainage from the treated area. Without drainage, there was danger from the absorption of large quantities of killed cancer cells.

Appendicitis with Localized Abscess.—Dr. Van Buren Knott, of Sioux City, Iowa, advocated the removal of the appendix at the first operation in every case of appendicitis with localized abscess. In a series of 501 consecutive operations for appendicitis with localized abscess, the appendix was removed at the first operation; there occurred six deaths. One patient, a little girl aged four years, died thirty-six hours after operation, the cause of death being unknown, as it occurred at home in the country, some distance from the hospital. A man aged forty-nine years died sixteen days after operation from cardiac thrombosis. A boy aged seventeen years died four days following operation from septicemia. Another patient, a woman aged thirty-one years, died six days after operation from septicemia. A man died twelve days following an operation, from postoperative obstruction, further intervention being refused. The sixth patient, a man aged twenty-four years, died from secondary hemorrhage the third day after operation. The ages of the patients included in this series ranged from ten months to eighty-four years; there was no death from peritonitis. As it was the fear of inviting peritonitis by the free separation of adhesions during the removal of the appendix which seemed to deter many operators from an attempt at such removal at the primary operation, the results secured in his series had removed practically the only objection to the removal of the appendix in abscess cases. By this procedure the tendency to postoperative complications, including obstruction, subphrenic abscess, pylephlebitis, empyema, hepatic abscess, etc., was greatly lessened. During the separation of adhesions many small localized pus collections were often found which would have been otherwise overlooked. Thus was disclosed the reason for many a secondary operation, which was often, improperly, called a secondary abscess. The mortality of operations for appendicitis with localized abscess had by this method been reduced from eight per cent. to one and two tenths per cent., and, in the hands of men who were qualified to operate in acute suppurative conditions within the abdomen, not only would mortality be lessened, but convalescence was shortened and the tendency to postoperative sequelæ much diminished.

Sarcoma of the Ovary.—Dr. Miles F. Porter, of Fort Wayne, Ind., reported twenty-six cases in satisfactory detail, together with three cases of his own, making twenty-nine in all. Many sarcomas of the ovary had been overlooked in the past because of incomplete microscopic study, and for the same reason many tumors of the ovary were classed as sarcoma, which in reality were not sarcoma at all. Averaging the percentages of sixteen observ-

ers covering over 3,000 cases of ovarian tumor, it was found that the proportion of sarcoma to all other tumors was 5.08 per cent. About twenty per cent. of all ovarian tumors were malignant and about five per cent. were sarcomas. Fifty per cent. of ovarian tumors occurring in patients under five years of age were sarcoma. Contrary to the rule, sarcoma of the ovary frequently involved both organs. This double involvement occurred in about twenty per cent. of cases. Sarcoma was especially likely to occur in the two extremes of life. In his table the youngest patient was ten and the oldest sixty-two years oof age. Doran had reported a case in a seven months fetus; the growth was usually rapid. Sarcomas of the ovary on palpation were in the majority of the cases solid or semi-solid; the ascites in connection with ovarian tumor indicated malignancy, but not the character of malignancy, nor did the ascites mean that the disease involved the peritoneum. Sarcomatous tissue was often found in dermoids. About ten or twelve cases of carcinosarcoma of the ovary had been reported. Round cell sarcomas were more common in the young, and spindle cell more common in adults. The difficulty of classifying malignant tumors of the ovary was very great. The diagnosis was seldom made save at operation or post mortem. A close study of each case in the light of their present knowledge would make it possible to make the diagnosis oftener in the future than in the past. Rapidity of growth of the tumor and rapid growth in a tumor that had been stationary for a long time raised the suspicion of sarcoma. Pain was a prominent symptom in more than one third of the cases. Disturbances of menstruation were more common in malignant than in nonmalignant tumors; especially was this true of amenorrhea. The mortality of the operation was much higher in children than in adults. The ultimate prognosis seemed the best in fibrosarcoma. A permanent cure could be expected in about ten per cent. of all cases. Even in desperate cases, the results of the operation were sometimes surprising. Seeligman had reported the successful treatment of a case with metastasis in spinal cord by arsacetin intravenously and x rays. One case of cure lasting over a period of two years was reported following operation and subsequent administration of Coley's fluid.

(To be concluded.)

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Tuberculin Treatment. By CLIVE RIVIÈRE, M. D., F. R. C. P., Physician to East London Hospital for Children, etc., and EGBERT MORLAND, M. B., B. Sc., Visiting Physician to the English Sanatorium, Arosa, Switzerland. Second Edition. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1913. (Through the American Branch of the Oxford University Press, New York.) Pp. xvi-247. (Price, $2.)

The appearance of a second edition of this small work within so short a time indicates the marked appreciation it has received. This is due mainly to the care with which the book was originally written and also to the fact that its authors are specialists on the diseases of the chest and possessed of large experience in the use of tuberculin. In the new edition they emphasize the dangers of ill considered general reactions and express doubt as to the wisdom of producing a focal reaction in pulmonary cases. Among new preparations, they extol the merits of the albumose free tuberculin, due originally to Koch, but worked out by Jochmann and Freymuth. The literature of the subject is well covered, and we are pleased to note many American authors among those quoted. It is a very safe book, and shows distinct evidence of having been written to aid the general practitioner.

Aids to Practical Pharmacy. For Medical Students. Adapted for the Examination in Practical Pharmacy and Materia Medica of the Conjoint and Other Examining Boards, and for General Use. Second Edition. New York: William Wood & Co., 1913. Pp. viii-165. Price, $1.) By A. CAMPBELL STARK, M. B., B. S., L. S. A., Ph. C., University Medallist and Exhibitioner in Materia Medica, Late Demonstrator on Materia Medica, St. George's Hospital Medical School, etc.

This is the second edition of a handy book for English students of pharmacy; being conveniently arranged, however, it might also prove useful to American students. The author states that he has completely revised the work and rewritten the portion relating to the administration and prescribing of drugs. The latter feature may also prove advantageous to medical students, the manner in which a drug should be prescribed being as a rule neglected in our textbooks.

Anaphylaxis. By CHARLES RICHET, Professor in the Faculty of Medicine, Paris. Authorized Translation by J. MURRAY BLIGH, M. D., Medical Registrar to the Liverpool Royal Infirmary. With a Preface by T. R. BRADSHAW, B. A., M. D., F. R. C. P., Senior Physician to the Liverpool Royal Infirmary. Liverpool: The University Press; London: Constable & Co., Ltd., 1913. Pp. xii-266.

The translator rendered a signal service to the profession in Great Britain and America when he produced a translation of Professor Richet's work on anaphylaxis; this physiologist, it will be recalled, introduced this term into nomenclature. Its purpose, as is well known, is to designate the peculiar attribute which certain poisons possess of increasing instead of diminishing the sensitiveness of the organism at large to their action. The phenomenon had been noted by Magendie, in 1839, by Flexner, in 1894; Koch had observed that tuberculin could cause it; Behring found that diphtheria toxin gave rise to what he termed a "paradoxical reaction," Knorr and Kitasato, working under him, having noted that guineapigs would die, in some instances under the influence of doses eight hundred times weaker than the fatal dose! What are the characteristics of this death dealing reaction which threatens us in so many directions? This is beautifully studied in the book before us, owing in part to Professor Richet's facility in making the most abstruse subjects as readable as a novel. The book is pregnant with suggestions for the practising physician, for anaphylaxis lies hidden in certain foods, egg albumin, pork, hare, the luscious strawberries, and drugs, the salicylates, quinine, iodoform, etc., in sensitive individuals. Of course, we cannot but feel that anaphylaxis is being used too promiscuously as an explanation of phenomena much too numerous, and on slim evidence, but time will doubtless, as usual, reduce the whole question to its proper limits.

Gout. Its Etiology, Pathology, and Treatment. By JAMES LINDSAY, M. D., M. R. C. P., Honorary Physician and Resident Medical Officer, Royal Mineral Water Hospital, Bath. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1913. (Through the American Branch of the Oxford University Press, New York.) Pp. xii-212. (Price, $1.50.)

The time when "flannel and patience" summarized the treatment of gout has evidently disappeared, judging from the fact that over fifty pages of this little book are devoted to therapeutics. Although based on a study of about six hundred cases, the text shows that the literature of the subject has not been neglected. Considerable discrimination is shown as to the reported cases selected—the authors

correctly realizing that confusion exists in the minds of writers between gout, rheumatoid arthritis, osteoarthritis, and the various forms of rheumatism. Between the scientific recognition of true gout and a steady decline in the number of such cases, the author looks upon the condition, at least as far as Europe is concerned, and we might say the same for America, as a more or less rare condition. We cannot say that the book contains anything particularly new, but it furnishes an excellent review of the whole question from the pen of a physician of special competence.

Die Krankheiten der Nase und Mundhöhle sowie des Rachens und des Kehlkopfes. Ein Lehrbuch für Aerzte und Studierende. Von Dr. Alfred Bruck, Berlin. Zweite, wesentlich vermehrte und verbesserte Auflage. Mit 252 zum Teil farbigen Abbildungen und 2 Tafeln. Berlin und Wien: Urban & Schwarzenberg, 1912. Pp. xiv-472. (Through Rebman Company, New York.)

The demand for the second edition of this valuable work so soon after its first appearance, is an indication of the popularity of the efforts of a master who needs no formal introduction as an authority to American specialists. The new edition appears to have well fulfilled the promises of the title page, and there is little for the reviewer to do beyond offering his favorable commendation. There are several minor points, however, which might be noted in passing. In extreme cases of nasal hemorrhage, when it is found expedient to tampon the postnasal fossa, it is not necessary to retain a cord emerging from the mouth as suggested in one of the procedures, in order eventually to remove the tampon, because the gauze will become saturated with secretions and so displaced by its own weight when the nasal cord is loosened. Another point is the failure of the author to consider to any extent the modern methods of tonsil removal, principally advocating, as he does, the use of the tonsillotome. One cannot help but note that the greater and more complete classification of diseases than is usually found in the same character of English books, makes this work of distinct value for reference to the specialist, as well as to the general practitioner. The cuts show the characteristics of most German illustrations in being well executed, and clearly but succinctly described.

Taschenbuch der Diagnostik und Therapie der Lungentuberkulose. Von Dr. Heinrich Gerhartz, Assistent am mediz.-poliklin. Institut der Universität Berlin. Mit 48 teils farbigen Abbildungen und 13 teils farbigen Tafeln. Berlin und Wien: Urban & Schwarzenberg, 1913. Pp. viii-200. (Through Rebman Company, New York.)

This little book of 200 pages contains in a condensed form the modern conception of diagnosis of pulmonary tuberculosis and phthisiotherapy. The first portion of the book deals with what the author terms biological diagnosis. Here he enumerates the various tuberculin tests and then the latest methods of sputum examination. In the chapter devoted to physical diagnosis it is refreshing to see how the author pays attention to the external aspect, or what he calls vista tuberculosis, which is so often neglected. In the chapter on palpation he refers to the muscular spasms described by Pottenger and gives due credit to the American authors who first described this phenomenon. In the chapter on percussion and auscultation the well known signs of pulmonary tuberculosis are reviewed without bringing forth anything new. It is well that the chapter on therapeutics is divided into treatment at home and in sanatoria, since the vast majority of tuberculous patients must still be treated at home. Under specific therapy a bewildering list of culture products is given, and the author very pertinently says that there seems to be no perceptible difference between the actions of any; and if assertions of superiority are made for some particular product, the good results can usually be explained by the method and the quantity administered. A short chapter is devoted to artificial pneumothorax which is up to date. Beside a few interesting colored illustrations showing the von Pirquet and the Calmette reactions, the author gives a series of x ray pictures demonstrating lesions of various stages of the disease. All in all, the book deserves a very careful perusal by all those interested in this most common of diseases.

Zeitschrift für Tuberkulose. Band 21. Heft 1-3. Festschrift der XI Internationalen Tuberkulose-Konferenz zu Berlin am 22 bis 26 Oktober 1913. Leipzig. Verlag von Johann Ambrosius Barth.

This number, the *Festschrift*, contains some notable articles. Mackenzie, of the Brompton Hospital, takes a shrewd and detached view of tuberculin. He believes that its value is still uncertain. In a chapter on *Tuberkulinthesen*, Sahli lays down that all tuberculins are essentially the same, being the protein of the bacillus; he thinks that the existence of an exotoxin is not proved. Litinski discusses the cases that can tolerate tuberculin, but its administration may have grave drawbacks for the patient. Calmette has a contribution on congenital tuberculosis, a subject certainly full of the deepest interest. The old question of bovine tubercle bacilli in human cases has become all important; the demonstration of its reality as a problem of tuberculosis, especially in children, is carefully pressed in a section by Dammann and Rabinowitsch. To read it is to realize the great part played by the bovine bacilli in the human disease. The chapters on the control of tuberculosis in cities are by Dr. Hermann Biggs and Dr. S. Adolphus Knopf. These should be carefully read; the points scored are practical and advanced. Samson devotes a chapter to artificial pneumothorax, which gives the impression that such an operation is an unpleasant alternative.

Obstetrics. Edited by Joseph B. De Lee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School, with the Collaboration of Herbert M. Stowe, M.D. Volume VII of the Practical Medicine Series for 1913. Chicago: The Year Book Publishers, 1913. Pp. 232. (Price, $1.25.)

This volume is one of ten, The Practical Medicine Series, issued at about monthly intervals, covering the entire field of medicine and surgery. While the series is published primarily for the general practitioner, the arrangement in serial volumes enables those interested in special subjects to purchase only the parts they desire, each volume being complete for the year prior to its publication on the subject of which it treats.

One who has not had the opportunity to study all the literature, and become familiar with the year's progress in obstetrics, including the most modern methods of research, technic, and treatment, will do well to invest in this book, every paragraph of which contains food for thought. There has been an awakening on the subject of obstetrics, and the value of a book like this, containing all the recent investigations, and new therapy, in condensed form, cannot be overestimated. The contents are divided into four parts, pregnancy, labor, the puerperium, and the newborn, with an index to authors, beside the general index.

Spezielle Pathologie und Therapie innerer Krankheiten. In 10 Bänden, herausgegeben von Friedrich Kraus und Theodor Brugsch in Berlin. Lieferung 1 to 4, Band I, 1. Teil, pp. 238, mit farbigen und 4 schwarzen. Tafeln. Inhalt: Diabetes Mellitus, von Prof. Dr. Ad. Magnus-Levy, Intermediäre Stoffwechsellstörungen, von Prof. Dr. Fr. Umber, und Gicht, von Prof. Dr. Th. Brugsch. Lieferung 5 to 8, Band II, 1. Hälfte, pp. 240, mit 3 farbigen Tafeln. Inhalt: Infektion und Immunität, Immunodiagnostik und Therapie, von Prof. Dr. R. Kraus, und Typhus und Paratyphus, von Prof. Dr. G. Jürgens. Berlin und Wien: Urban & Schwarzenberg, 1913. (Through Rebman Company, New York.)

In the first paper of the first volume, on diabetes mellitus, by Professor Ad. Magnus-Levy, the subject is reviewed thoroughly, the author having referred largely to the extensive literature bearing on all phases of the disease. Incidentally attention is called to some statistics and a quoted paper, both of which indicate that diabetes mellitus is no more common among the Jews than among other peoples. Professor Fr. Umber gives a résumé of the work done on the so called aminoacid diathesis, the physiology and pathology of water excretion, as in diabetes insipidus, and cachexia. The article on gout by Professor Th. Brugsch is complete, giving in detail the physiology, pathology, and treatment of the disease, and the changes found in the various organs of the body. The plates and illustrations of the gouty lesions are good and add to the value of the work. If the same high standing is maintained in the com-

ing volumes, and the names of the authors indicate as much, this series of publications will be valuable.

The first hundred and fifty pages of the second volume of this work are devoted to an article by Professor R. Kraus on infection and immunity, immunodiagnosis, and therapy. In this are taken up the various subjects of antibodies, lysins, anaphylaxis, etc., an extensive résumé being given of the important work done by many investigators. The present position of serum diagnosis in malignant disease is fully reviewed, the precipitin, miostagmin, cell reactions, and complement fixation being mentioned. Abderhalden's test for pregnancy is also discussed. The greater part of the paper is devoted to a review of the work done in relation to serum therapy. The second paper, by Professor G. Jürgens, is on typhoid and paratyphoid fever, some ninety pages being devoted to a thorough presentation of the subects. The volume is an able one and presents the most recent ideas.

Industrial Poisoning from Fumes, Gases, and Poisons of Manufacturing Processes. By Dr. J. RAMBOUSEK, Professor of Factory Hygiene and Chief State Health Officer, Prague. Translated and Edited by THOMAS M. LEGGE, M. D., D. P. H., H. M. Medical Inspector of Factories, etc. With Illustrations. New York: Longmans, Green & Co.; London: Edward Arnold, 1913. Pp. xi-360. (Price, $3.50.)

Doctor Rambousek's book is intended for all who are, or are obliged to be, or ought to be interested in industrial poisoning, as the author himself says. As a government official, a chemist, and a medical man having control of industrial matters, he is equipped with the special knowledge required to describe the manufacturing processes which give rise to injurious effects, the pathology of the lesions set up, and the preventive measures necessary. We should like to see the book contain more details upon the treatment of poisoning by the many substances enumerated, but with this exception it is a very complete and satisfactory work.

Sterilisation und Kastration. Als Hilfsmittel in Kampfe gegen das Verbrechen. Von Dr. FRIEDRICH LUDWIG GERNGROSS. München: J. F. Lehmann, 1913. Pp. 42. (Price, 1.20 Marks.)

The author in this small book cites the attitude of various countries, especially America, on castration and sterilization. He gives the methods and the indications for sterilization and ends with a discussion of the legal status of such persons and discusses under what conditions they may marry.

Interclinical Notes.

Puck for January 24th has a telling cartoon, showing a woman regarding unmoved the destruction by a grinning brute of a hunter, of egrets, foxes, and deer, necessarily involving the starving of the young, which in most instances are useless as far as their feathers or pelts are concerned. Below, Flexner, Carrel and Loeb are working in a laboratory of experimental physiology. We hope this and similar cartoons will reach a large public misled by sensational journals which ignore the great multitude of irresponsible and reckless pot hunters, yet dare to accuse of cruelty and worse, minds among the greatest in the medical profession.

* * *

Another team of mind readers or telepathic artists is busy in New York and has already enlisted the valuable advertising aid of college professors. This team duplicates a well worn trick of the magicians; one gets in a whisper the title of a piece of music from a member of the audience and the other, although blindfolded, at once begins to play it on a piano; the results are not only piffling beyond words, but they are suspiciously well adapted for stage presentation. It is a long time since physicians have been exploited by clever vaudeville performers —we presume this team will vouchsafe to exhibit on the stage—but professors in other faculties are nearly as valuable as press agents. Some of them couldn't see a two inch hawser running from one performer to the other unless it was very clumsily knotted.

A feature of great interest and importance in the January *Wide World Magazine* is the beginning of Dr. Wilfred T. Greenfell's Twenty Years in Labrador, a record of self sacrificing charity and medical and surgical skill probably unparalleled in history. Unchecked "business" has almost laid the land in waste. It is significant to read of the guns made by the Hudson Bay Company for sale to the natives; they were six feet in length and were sold for a pile of pelts of equal height. There are other good, true stories in this magazine. Mervyn G. Skipper describes a duel with rattan sticks among the Javanese that has many points of resemblance to the contests among German students.

* * *

Sublimation, by Jane Burr, is a story in *Young's* for January, 1914, about Doctor Kane, who told the heroine —name not given—to go out and be a cave woman; subsequently he was sorry, requested her to come back to civilization, and married her.

* * *

Very beautiful is the January *Century* with its legible type and exquisite illustrations. Doctors, as thinking men, must like H. G. Wells who has again embarked upon the sea of prophecy in his Trap to Catch the Sun, fascinatingly interesting in its idealism. Wells Hastings discusses Our Children, the new English poet, John Masefield, has The River, and there is much else to amuse and instruct.

* * *

The first January number of the *Popular* has a story by our eminent literary colleague, Dr. Henry C. Rowland, entitled Undercurrents; there are two Doctors Feldsburg, father and son, but we decline to tell more, save that the senior Feldsburg is like a black panther and walks with catlike stealth. The Scientific Gunman, by Arthur B. Reeve, is in our line too with its highly chemical and physical mysteries. There are likewise several capital stories without doctors or science, unless bloodshed is to be considered a science.

* * *

The *North American Review*, owing probably to its advanced age, now over ninety-nine years, is showing some new wrinkles. It has a handsome dress of large, beautiful type, such contributors as David Jayne Hill, George H. Blakeslee, Oswald Garrison Villard, and Margaret Sherwood, and the exclusive editorial services of the amiable and accomplished Colonel George Harvey, who has thirty pages all to himself.

Meetings of Local Medical Societies.

MONDAY, *February 2d.*—Clinical Society of New York Throat, Nose, and Lung Hospital; German Medical Society of the City of New York; Utica Medical Library Association; Niagara Falls Academy of Medicine; Brooklyn Hospital Club; Hornell Medical and Surgical Association; Clinical Society of the New York Polyclinic Medical School and Hospital.

TUESDAY, *February 3d.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Amsterdam City, N. Y., Medical Society; Lockport Academy of Medicine; Society of Alumni of Lebanon Hospital, New York; Syracuse Academy of Medicine; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh Medical Association; Oswego Academy of Medicine; Medical Association of Troy and Vicinity; Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Medical Society of the County of Yates, N. Y.; Medical Society of the County of Ulster, N. Y.; Medical Society of the County of Orleans, N. Y.

WEDNESDAY, *February 4th.*—New York Urological Society; Brooklyn Society for Neurology; Society of Alumni of Bellevue Hospital; Harlem Medical Association, New York; Bronx Medical Association; Elmira Academy of Medicine; Schenectady Academy of Medicine.

THURSDAY, *February 5th.*—New York Academy of Medicine (stated meeting); Brooklyn Surgical Society; Practitioners' Club, Buffalo; Geneva Medical Society; Glens Falls Medical and Surgical Society.

Friday, *February 6th.*—New York Academy of Medicine (Section in Surgery); New Utrecht Medical Society; New York Microscopical Society; Manhattan Dermatology Society; Gynecological Society, Brooklyn; Practitioners' Society of New York; Corning Medical Association; Saratoga Springs Medical Society; Society for Serology and Hematology, New York (annual).

Saturday, *February 7th.*—Benjamin Rush Medical Society, New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending January 21, 1914:

Creel, R. H., Passed Assistant Surgeon. Directed to proceed to Gulfport, Miss., and vicinity, in company with an inspector from the Bureau of Chemistry, Department of Agriculture, for the purpose of making a sanitary survey of the conditions under which oysters are grown and handled for shipment. **Currie**, Donald H., Surgeon. Granted four months' leave of absence with pay, from December 20, 1913, and eight months' leave of absence without pay, from April 20, 1914, for service as secretary of the State Board of Health of California. **Foster**, M. H., Surgeon. Directed to proceed to Saratoga Springs, N. Y., for the purpose of making an examination of an alien to observe the results of the grattage operation for the cure of trachoma. **Irwin**, Fairfax, Senior Surgeon. Authorized to proceed to Marcus Hook, Pa., when necessary, for inspection and supervision of quarantine operations. **Lavinder**, C. H., Surgeon. Detailed for temporary duty at the Hygienic Laboratory, effective January 12, 1914. **Long**, J. D., Surgeon. Directed to assume charge of Service Laboratory, in addition to his duties in plague suppressive measures in California. **Phelps**, E. B., Professor. Directed to proceed from New York, N. Y., to Boston, Mass., for the purpose of supervising the investigation of sanitary administration now being conducted in Massachusetts. **Pierce**, C. C., Surgeon. Detailed for temporary duty at the Hygienic Laboratory, effective January 12, 1914. **Schereschewsky**, J. W., Surgeon. Directed to proceed to Chicago, Ill., to attend the meeting of the National Council of Safety, January 20, 1914.

Boards Convened.

Board of medical officers convened to meet at Detroit, Mich., for the reexamination of alien John A. Peterson. Detail for the board: Senior Surgeon H. W. Austin, chairman; assistant Surgeon Joseph Bolten, member; Acting Assistant Surgeon K. L. Weber, recorder.

Board of commissioned medical officers convened to meet at the United States Marine Hospital, Stapleton, N. Y., Monday, February 23, 1914, for the purpose of making the physical examination and conducting the mental examination of Assistant Surgeon Carlisle P. Knight to determine his fitness for promotion to the grade of Passed Assistant Surgeon. Detail for the board: Senior Surgeon G. W. Stoner, chairman; Passed Assistant Surgeon W. M. Bryan, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending January 24, 1914:

Blanchard, R. M., Captain, Medical Corps. Leave of absence extended twenty days. **Bradley**, A. E., Lieutenant Colonel, Medical Corps. Ordered to Forts Carswell, Moultrie, Screven, Dade, and Key West Barracks to make inspection. **Crum**, W. H., Captain, Medical Corps. Arrived at Fort D. A. Russell, Wyo., for duty with Ambulance Company No. 1. **De Witt**, Wallace, Major, Medical Corps. Granted leave of absence for seven days. **Harris**, J. R., Captain, Medical Corps. Ordered to Fort Jay as witness before general court martial, January 21, 1914. **Huntington**, P. W., Captain, Medical Corps. Leave extended one month. **McBrayer**, C. E., First Lieutenant, Medical Corps. Granted three days' leave of absence. **Purnell**, H. S., Captain, Medical Corps. Granted three months' leave of absence effective April 1, 1914, with extension. **Ragan**, C. A., Major, Medical Corps. Granted four months' leave of absence, effective April 15, 1914. **Simpson**, J. A. Detailed to court martial at Fort Moultrie. **Von Schrader**, A., First Lieutenant, Medical Corps. Granted leave of absence for one month, effective January 19, 1914, with extension.

Births, Marriages, and Deaths.

Married.

Esposipo—Bunnell.—In Atlantic City, N. J., on Thursday, January 8th, Dr. Joseph V. Esposipo, of New Haven, Conn., and Miss Violet M. Bunnell. **Oyen—Johnson.**—In Chicago, Ill., on Thursday, January 15th, Dr. A. B. Oyen and Miss May Johnson. **Wachenfeld—Sauer.**—In Maplewood, Mo., on Tuesday, January 13th, Dr. C. H. Wachenfeld, of St. Louis, Mo., and Miss Lillian Sauer.

Died.

Anderson.—In Baltimore, Md., on Thursday, January 8th, Dr. Joseph L. Anderson. **Baer.**—In South Pasadena, Cal., on Monday, January 19th, Dr. J. S. Baer, of Camden, N. J., aged fifty-nine years. **Beason.**—In Manchula, Fla., on Friday, January 9th, Dr. J. M. Beason, aged thirty-five years. **Beck.**—In Toronto, Can., on Monday, January 12th, Dr. Geoffrey S. Beck, of Port Arthur, Ontario, aged fifty-four years. **Becker.**—In Altamont, N. Y., on Tuesday, January 13th, Dr. I. S. Becker, aged eighty-four years. **Broaddus.**—In Bowling Green, Va., on Sunday, January 4th, Dr. William L. Broaddus. **Clay.**—In Little Rock, Ark., on Thursday, January 15th, Dr. M. T. Clay, aged fifty-seven years. **Davis.**—In Washington, D. C., on Wednesday, January 14th, Dr. George W. Davis, aged thirty years. **Ewing.**—In Nashville, Tenn., on Wednesday, January 14th, Dr. William Green Ewing, aged sixty-five years. **Farrow.**—In Ashland, Pa., on Tuesday, January 13th, Dr. E. W. Farrow, aged sixty-seven years. **Hanford.**—In Brooklyn, N. Y., on Monday, January 19th, Dr. William H. Hanford, aged eighty-nine years. **Jewell.**—In Decorah, Ia., on Thursday, January 8th, Dr. P. M. Jewell, aged sixty-six years. **Knapp.**—In Binghamton, N. Y., on Monday, January 12th, Dr. Frank Knapp, aged fifty-five years. **Lamb.**—In the Bronx, N. Y., on Sunday, January 18th, Dr. Joseph T. Lamb. **Loos.**—In Trenton, N. J., on Monday, January 12th, Dr. Isaac B. Loos, aged fifty years. **Montgomery.**—In Frankfort, Ky., on Monday, January 12th, Dr. W. Len. Montgomery, aged sixty-one years. **Pearson.**—In Fort Worth, Texas, on Friday, January 9th, Dr. William Pearson, of Joshua. **Peddie.**—In New York, N. Y., on Tuesday, January 20th, Dr. Thomas Peddie, aged fifty-eight years. **Penny.**—In Brooklyn, N. Y., on Wednesday, January 21st, Dr. William Penny, aged eighty-three years. **Pulliam.**—In Richmond, Va., on Thursday, January 15th, Dr. John D. Pulliam, aged seventy-six years. **Reilly.**—In Chicago, Ill., on Thursday, January 15th, Dr. John L. Reilly, aged fifty-five years. **Reinhard.**—In Milwaukee, Wis., on Monday, January 12th, Dr. Carl Reinhard, aged sixty-six years. **Richardson.**—In Lebanon, Tenn., on Friday, January 9th, Dr. J. J. Richardson, aged sixty-six years. **Robson.**—In Tenino, Wash., on Tuesday, January 13th, Dr. C. E. Robson. **Spears.**—In Florala, Ala., on Tuesday, January 13th, Dr. P. B. Spears, aged fifty-eight years. **Strickland.**—In Cumming, Ga., on Wednesday, January 7th, Dr. Ansel Strickland, aged fifty-six years. **Thies.**—In Janesville, Wis., on Wednesday, January 14th, Dr. Wilhelm Thies, of Chicago, Ill., aged sixty-one years. **Thompson.**—In Poughkeepsie, N. Y., on Monday, January 19th, Dr. Von Beverhout Thompson, aged sixty-seven years. **Ulsh.**—In Selinsgrove, Pa., on Thursday, January 22d, Dr. William H. Ulsh, aged forty-five years. **Whatley.**—In Chillicothe, Texas, on Monday, January 12th, Dr. J. S. Whatley, aged fifty-nine years. **Wilson.**—In South Bethlehem, Pa., on Saturday, January 17th, Dr. Raymond W. Wilson, aged thirty-four years.

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Original Communications.

PERSONAL EXPERIENCE WITH TUMORS OF THE CAROTID BODY.

BY JOHN CHALMERS DACOSTA, M. D., LL. D.,
Philadelphia,

Samuel D. Gross Professor of Surgery, Jefferson Medical College.

A few days ago, after much procrastinating, I completed a communication upon tumors of the carotid body, discussed them at length, and presented a résumé of the reported cases. The very day that I was to deliver the sheets to the NEW YORK MEDICAL JOURNAL, I discovered in the December number of the *Annals of Surgery* an article on tumors of the carotid body, a communication complete in all respects and containing every reported case. This admirable study is by Dr. James G. Callison and Dr. Edmund MacKenty. There is now no possible reason for the existence of my article, and to that extent I owe a grudge to my New York confreres, but as their communication is more complete than mine, I, in common with all surgeons owe them thanks for their instructive work. I owe them particular thanks for having printed their communication in December and not in January and thus saved me from unfavorable comparison.

So my unused statistical article goes to the waste paper basket and I must remain content with the publication of the brief story of my personal experience. Case II has never been reported at any length (it was merely spoken of briefly before the Philadelphia Academy of Surgery; see *Annals of Surgery*, LVIII, 1913). Case III has never been reported at all.

I assisted my old master, Professor Keen, in the operation in his fatal case of carotid tumor. I also assisted Professor Hearn in the operation in his case. This patient perished of cerebral softening two months after the operation. In both of these patients it was necessary to tie the common carotid artery.

Having seen two cases of this then almost unknown condition, I was naturally on the lookout for others, and when a case did present itself I had the good fortune to make the diagnosis.

My first case was reported in full in the *Annals of Surgery* for September, 1906. During the operation, the hemorrhage was alarming and could be controlled only by ligation of the common, external, and internal carotid arteries and the internal jugular vein. Extirpated with the tumor were the termination of the common carotid artery, and considerable portions of the external and internal carotid vessels. The man presented complete hemiplegia on the eighth day after the operation. The superior laryngeal nerve had been injured and he had anesthesia of a portion of the larynx, paralysis of the cricothyroid muscle on the side operated upon (causing relaxed vocal cord of the same side and hoarse voice), and difficulty in swallowing (because of weakness of the inferior constrictor). Many weeks after the operation the man was a wreck with no prospect of cure. I lost track and do not know what became of him.

These few cases made me feel very conservative about operating for carotid tumor. One patient died from operation, two were left hopeless paralytics, and one of them died in a few weeks. The fate of the other, though unkown, is reasonably certain. In looking up the literature at that time (1906) I found that out of seventeen cases operated in, it had been necessary in fourteen to tie all of the carotids. That out of sixteen cases there were seven cases in which nerves had been injured (superior laryngeal, recurrent laryngeal, sympathetic, facial, pneumogastric, or hypoglossal). A study of the literature thus deepened my conservative convictions. Statistics showed an enormous mortality and many sequelæ of the greatest gravity. A little later I learned that there had been ten deaths among twenty-six cases operated in (seven from pneumonia following division of the pneumogastric nerve, one from hemorrhage, one from cerebral anemia, one from edema of the lungs). I read with sympathy the opinion of Reclus, that a carotid tumor should not be removed unless it caused obvious danger to life; and warmly seconded the view put forth by Keen. That view was as follows: "Every operation undertaken for tumor of the carotid gland may require resection of the vessels and nerves of the neck. Interference should be undertaken, therefore, only when serious functional trouble, or rapid evolution of an apparently malignant character is present, thus justifying an attempt the consequence of which may be very grave. Apart from this we believe that the surgeon should not operate" (Keen and Funke, *American Medicine*, VIII, 3). This became my surgical creed in regard to carotid tumors.

But, as the depression arising from a ghastly failure wore off, I began to question the wisdom of the policy of nonintervention unless there was functional trouble or danger to life. It seemed reasonable to hold that if the surgeon delays operation until there is serious functional trouble or until rapid growth has begun, he will be forced to

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operate at a time when vessels and nerves are certainly implicated. To operate early is to have an excellent chance of removing the growth without damaging vessels or nerves. Sooner or later these growths become malignant. Operation before malignancy will cure the case, and, if done before vascular or nerve involvement has occurred, will probably have no unfortunate sequelæ. If done after malignant change has begun, the patient may not be permanently cured and the operation will be very difficult and dangerous.

The tumor usually grows very slowly for some time, perhaps for two, five or more years, and may then begin to grow rapidly. We know by experience that a comparatively small tumor may be removed, with some difficulty it is true, but with good result. Why wait until the gland assumes such size and relations that ligature of the common carotid must necessarily be performed? The gland may suddenly undergo malignant change; why wait until such change occurs when by waiting our chance for removal of all diseased tissue is greatly minimized?

So I profoundly modified my surgical creed. I came to believe that when the carotid gland is either palpable or visible it is pathological, will grow larger, will eventually become malignant, and should be removed at once; that if the tumor has reached a size which indicates "functional trouble or evolution of apparently malignant character," the time is probably too late to obtain a cure, the operation is highly perilous, and the results often also most perilous. Arguing thus, and believing that the golden opportunity for surgery is early in the course of the disease, I was prepared to operate if another case appeared, and I waited six years for one to appear.

Case II. The patient was a woman aged twenty-five years, a native of Philadelphia, single, and a sewing machine operator by occupation. Her family history threw no light whatsoever upon the case. Her personal history was good. She stated that with the exception of having had "membranous croup" and pneumonia when a child, she had always been healthy until the present trouble. Menstrual history normal.

Present illness: She came to the hospital simply and solely because of a tumor of the right side of her neck. She had had this tumor for five years and first noticed it after an attack of "sore throat"; at that time the mass was very small. The growth of the mass had been gradual. It had caused her no pain. Six months before she came for consultation she noticed that the mass "pulsated." On admission to the hospital she was found to be well nourished. Pupils were equal and reacted to light and accommodated to distance.

On the right side of the neck there was a firm mass the size of a hen's egg under the sternomastoid muscle, extending from just below and beneath the angle of the jaw to opposite the cricoid cartilage. There was a distinct pulsation over the entire mass, but not expansile in type. The heart sounds could be heard over the mass, but less distinctly than directly over the great vessels of the neck. The mass was somewhat movable from side to side, but there was no up and down mobility. There were a few small palpable glands beneath the angle of the jaw on the opposite side and also along the border of the opposite sternomastoid muscle.

The thorax and abdomen were apparently normal. Blood count, hemoglobin 80 per cent., red cells 3,930,000, white 6,400, differential count polynuclears 68 per cent., small lymphocytes 27 per cent., hyalines 4 per cent., eosinophiles 1 per cent. The urine was normal with the exception of a faint trace of albumin. Wassermann reaction+4.

Diagnosis: Tumor, probably perithelioma, of the carotid gland.

The patient was operated on under ether. An incision four inches in length was made from the level of the angle of the jaw, extending downward along the anterior margin of the sternomastoid. The skin, superficial fascia, and deep fascia were divided and the sternomastoid muscle retracted backward. The carotid sheath was opened. The common carotid artery was separated and a silk ligature passed around it on an aneurysm needle. The ligature was not tied, but clamped with a hemostat. This is a wise precaution to take in all such cases, as severe and dangerous hemorrhage may be encountered at any moment and necessitate the rapid ligation of the common carotid artery.

The tumor was found to be at the bifurcation and back of the carotid artery, closely adherent to the common, the internal, and external carotid arteries. It was separated with great difficulty from the vessels. It was found necessary to tie the external carotid just beyond the bifurcation. All bleeding points were carefully ligated and the wound was lightly drained by iodoform gauze. The emergency ligature around the common carotid was left on during forty-eight hours for fear of secondary hemorrhage. Pathological examination showed the tumor to be a perithelioma.

Following the operation the right side of the mouth was drawn slightly to one side. There were hoarseness and inequality of the pupils. All of these sequelæ have entirely cleared up and the patient is perfectly well now fourteen months after the operation.

Case III. The patient was a woman, aged forty-eight years, who was referred to me by Dr. Earl E. Wagner, of Wilkesbarre, Pa.; married, and the mother of six children all of whom are healthy. She had lost no children and had had no miscarriages. Her mother died at the age of sixty-one years from Bright's disease. Her father died at the age of seventy-five years, the cause of death being apoplexy. She had no brothers and no sisters. As far as the patient was aware there was no history of tumors either in her mother's family or her father's. There had been no tuberculosis in the family. The patient had scarlet fever and measles when a child and had always had a "bad throat," causing repeated severe attacks of tonsillitis and quincy. She had rheumatism during the past winter.

Her trouble began eight months before admission, when she noticed that she had some difficulty in swallowing, and associated with this there was a change in her voice which appeared to become weaker. The difficulty in deglutition became somewhat better, but the weakness of her voice persisted. She had no headache, no deafness, no dyspnea. She had an irritating cough.

Two months before admission, she noticed a swelling on each side of her neck just above her "collar." These swellings had grown steadily larger. There had been no pain at any time. She believed that she had lost about 30 pounds in the past eight or ten months.

On physical examination, a tumor was found on each side of the neck, situated at the bifurcation of the carotid. Each tumor was the size of a hen's egg and lay under the upper third of the sternomastoid muscle. There was no inflammation nor adhesions of the overlying skin. The tumors were markedly pulsatile, but the pulsations were not expansile in character. The consistence of the tumors was hard. There was slight lateral mobility, but no mobility upward or downward; no surrounding glandular enlargement; some trouble in swallowing; examination of the throat revealed nothing abnormal except relaxation of the cords due to nerve pressure. Except the dysphagia and hoarseness, there were no other evidences of functional derangement.

A diagnosis of bilateral enlargement of the carotid glands was made, but operation was not ad-

vised, first, because both tumors were large and already had nerve and vascular involvement; secondly, it would have been practically useless to remove a tumor from one side and leave the growth on the other. Removal of both bodies would almost certainly demand ligation of both common carotids, for primary or possibly for secondary hemorrhage This patient died within a few months from advanced exhaustion and with severe dyspnœa. Doctor Wagner removed the growths post mortem. Examination of the tumors showed them to be peritheliomata of the carotid bodies, and the cellular infiltration indicated malignancy. This is, I believe, the only case on record of bilateral carotid tumor.

CONCLUSIONS.

We are justified today in concluding: First, that the carotid body exists more frequently than was formerly believed; that it is of unknown function; that it should undergo fibrous atrophy at or soon after puberty; that if such atrophy fails to occur the body will probably enlarge and such enlargement is to be regarded as a tumor.

Second, tumors of the carotid body are of the type of endotheliomata known as peritheliomata.

Third, these tumors, originally innocent, usually pursue a long course. Rapid growth is exceptional until years have passed. Sooner or later they tend to take on rapid growth and to cause functional involvement. Rapid growth signifies malignancy. A malignant change is sarcomatous in character. In only one of the sixty cases quoted by Dr. James G. Callison and Dr. John Edmund MacKenty (*Annals of Surgery*, LVIII, 6, December, 1913), was the malignant change epithelial in character. In Case III reported above, the growth was extremely rapid from the time the tumors were first noticed, and death occurred within a year. In all probability the tumors had existed for several or many years before they were discovered and were first noticed when quite large.

Fourth, the growth is almost invariably unilateral. Case III in this article is as far as I know the only instance on record of a bilateral growth.

Fifth, the carotid body is associated intimately with important vessels and nerves, its position being retrocarotid rather than intercarotid. It has a large blood supply which is carried by the ligament of Mayer. Any injury to the body produces profuse hemorrhage and if an operation is once started, it must be completed or the man will probably bleed to death. The relations of the carotid body render any operation difficult and dangerous and make postoperative complications probable.

Sixth, the carotid body is intimately associated with nerves, involvement of which will produce symptoms. Tumors are lifted by the pulsating carotid artery, and are movable laterally, but not up and down. I have seen no case which had expansile pulsation, but Doctor Lilienthal is of the opinion that his case exhibited it.

Seventh, operative interference is comparatively safe when the tumor is recent and small, but is fraught with grave peril when the tumor is old and with especial danger if it is large. The larger and older the tumor the more probable it is that ligation of the common carotid or of all the carotids will be necessary in the removal and that injury to important nerve structures will be almost inevitable. Early operation may enable us to dissect the tumor from the carotids, or to get off with tying the external carotid alone. As these growths tend strongly to become malignant eventually, as early operation is reasonably easy and comparatively safe, as late operation is difficult and highly dangerous, and as sooner or later the tumor, if let alone, will kill the patient, early operation is imperative.

2045 WALNUT STREET.

NEOPLASM OF THE BLADDER.*

Clinical Reports of Three Cases of Treatment with the High Frequency Current of Oudin.

BY VICTOR COX PEDERSEN, A. M., M. D.,
New York.

The following clinical report includes three cases of neoplasm of the bladder treated with the high frequency current of Oudin. The first case is that of malignant neoplasm whose papillary growths were so distinct and long that they led to the tentative diagnosis of benign papilloma. When the pathological report of this case was in hand, primary papillary adenocarcinoma of the bladder was diagnosed. This lesion is so very rare in the bladder that this single example is perhaps worthy of publication, especially when combined with the fact of infiltration around the base, of more or less misleading character, as described, and with the fact of immediate and rather definite benefit from the application of the current in removing the papillary outgrowths.

The two benign cases are now about four months from their last treatment and have remained absolutely well with the bladder so healed at the point of their attachments as to make a definite scar almost impossible to see. These findings are the common experience, but inasmuch as the larger the number of careful case records the better the final conclusions, these cases should be reported also.

CASE I. M. C., Russian, aged fifty years, married, furrier. (No. 12,781.) First seen in April, 1913, at the Clinic for Urology in Men, Women, and Children at St. Mark's Hospital, O. P. D., referred by Dr. Benjamin T. Tilton. Diagnosis, papillary adenocarcinoma of bladder. *Family history:* Father died of age, mother of unknown causes, five brothers living and in good health. Wife had no female disease and had had several children. No record of syphilis, tuberculosis, nor cancer in the family. *Personal history:* General health good, weight had been at constant up to the present sickness. Appetite and bowels normal. The former venereal history included an attack of gonorrhea about thirty years before, treated by a physician for a year with internal and injection methods. Discharged cured after examination by the physician. All other venereal history denied. The present urological history gave a normal sexual life up to the onset of the present sickness which began a short time prior to his visit with an attack of blood in the urine and symptoms of vesical disturbance. As the patient did not speak English very well, it was not possible to get details of early or prolonged subjective vesical signs, beyond *ardor urinæ* beginning in August, 1912, and bleeding after massage of

*Read [illegible] the New York Surgical Society, the American Urological Association, December [illegible] the Section [illegible] Medical Society, December [illegible]

prostate in April, 1913, and frequency of urination during cold weather.

General physical examination showed a thin, spare man, suggesting intestinal absorption, although difficulty with the bowels was denied. No tumor mass was apparent on abdominal examination.

Cystoscopy was readily performed under alypin as local anesthetic and revealed, in the subperitoneal segment of the bladder just behind the air bubble and slightly to its right, a papillary growth requiring about one and one half field for full inspection. The papillary outgrowths of this tumor were distinct and long, although not absolutely as long and broad as those of the ordinary papilloma of the bladder. It was not possible to say whether its attachment was pediculated or sessile, as the papillary outgrowths overshadowed the base in all directions. Extending from the base toward the patient's right in the subperitoneal quadrant was a fairly distinct condition in the mucous membrane, so that on changing the amount of fluid in the bladder this area did not behave like the remainder of the wall. Two cystoscopists in three would have noticed this condition, while the third might have passed it over, in other words, it was not absolutely unmistakable. On this account I stated to Doctor Tilton, who saw the cystoscopic picture at this time, that I felt it might indicate cancer and that the prognosis should be guarded.

Treatment of the mass with the high frequency current of Oudin was decided on as a tentative measure, with the statement that if it did not benefit within one or two weeks open operation should be done, which the patient had at the outset vigorously refused. The record was not absolutely fixed in the number of applications made, but memory was certain that it did not exceed ten, each being rather vigorous. According to the specifications suggested by Beer, I used a quarter inch spark gap, with the switch at times half and at times fully open, buried the electrode into the mass, and continued the current until definite blanching or blackening appeared, using about two, occasionally three minutes. The immediate results of this treatment were definitely beneficial. The papillary outgrowths dropped off; unfortunately all of them were too much changed by the current to make examination worth while, until the last which was secured just before I left for a short vacation in July.

The base of the mass now remaining had all the appearances of the bases of the other two papillomata reported in this paper. There was a round, raw surface surrounded by a traumatic edema which I supposed would have disappeared by the time I returned from vacation.

To my great surprise, however, during the few days of my absence the hard everted edges of cancer were unmistakable. The Department of Pathology, Cornell University Medical College, under date of July 9, 1913, reported that the papilloma of the bladder proved to be papillary adenocarcinoma.

Inasmuch as primary adenocarcinoma in the bladder is very rare, I wrote to Professor James Ewing, who had meanwhile returned from Europe, for an opinion of this rather curious condition and received the following opinion: "Primary adenocarcinoma of the bladder occurs, but is rare. It arises from glands sometimes found in the trigone, possibly misplaced from the urethra. Cases are described by Albarran and Fenwick and other systematic writers on this subject. The tumor in the case of C—— was received in my absence by Doctor L'Espérance, with a letter stating that it was a tumor of the bladder. Her diagnosis, adenocarcinoma, is correct. But it is probably not a tumor of the bladder, but arises in the rectum. At any rate, the structure I find to be rather typical of the peculiar adenoma destruens of the rectum. A positive diagnosis is impossible without an autopsy, but your findings at operation strongly suggest a primary rectal tumor."

The findings at the time of the operation are described hereafter. I therefore wrote Doctor Ewing, pointing out that this growth could not possibly be rectal, to which he has replied that he intended to use "intestinal" rather than "rectal" in his report.

Resection of the bladder was decided on and performed by Dr. Benjamin T. Tilton and myself at St. Mark's Hospital. When the patient was under ether, it was easy to find the mass of the tumor which had since his first visit grown to considerable size. When the bladder was exposed by a long median incision, we were amazed to find that, adherent to the region of the tumor with inseparable density were the omentum and the cecum, which also was invaded by a tumor mass fully as large as that in the bladder. I have always regretted that we did not open the cecum to study the characteristics of this mass. It was then determined to resect both the bowel and the bladder, but in preparing the peritoneum for this step, a group of metastases in lymphatic glands and vessels was found running more or less parallel with the ureter, but turning toward the middle line, as it should to reach the main trunks to the left of the vertebral column. The unusually rapid progress of these secondary deposits decided the case to be inoperable, and the wound was closed without drainage. On the supposition that the patient's life would not last long and that the abdominal wall would need support, a buried silk suture was used for the sheath of the rectus. Unfortunately this suppurated out, leaving four small sinuses. The top and bottom of these closed after the stitch had been removed, whereas the middle two remained open and became painful, seemingly through retention of exudate. On this account I connected them by superficial incision which secured drainage and freedom from pain, but has, as I suspected, opened the path for the neoplasm so that its foul discharges are now apparent. This whole sloughing process of the stitch did not appear for many weeks after the wound had healed by primary intention.

The connecting wound between the two sinuses mentioned remained open to its full extent for only a short time. The increased drainage which relieved much of the man's pain, continues, though the wound decreased by perhaps half its extent. Through this sinus the patient states that urine is now being discharged, so that much of the bladder contents reach the external dressing. This is another feature which tends to show that the tumor was perhaps primarily vesical and not intestinal.

The present condition of the patient is that he has lost weight, strength, and good health. His bladder condition is pitiable. External palpation reveals a mass outlined as shown in the present photograph with a distinct prolongation upward of which the upper limits are not shown in the photograph which is taken lower than it should have been. The penis might have better been excluded and the extent of this secondary deposit included.

Granulations around the sinuses from the silk grew with such very great rapidity that I thought perhaps they might even have taken on cancerous change. I therefore sent a specimen from the largest mass to the Department of Pathology at Cornell University and learned that the diagnosis was simple granuloma.

A cystoscopy was performed recently, a few days after the photograph was taken, using the size 18 F.

subcalibre close vision cystoscope. The picture was really very satisfactory considering all conditions, namely, that of a very extensive, sloughing papillary carcinoma occupying practically all the subperitoneal and urachal segments of the bladder. The characteristic secondary cystitis is well established.

December 13, 1913, he complained of beginning difficulty in defecation, perhaps because the earliest stage of obstruction is beginning to appear.

This case is reported not as a success, but as a partial failure in diagnosis, which is usually more instructive and interesting than success, although it

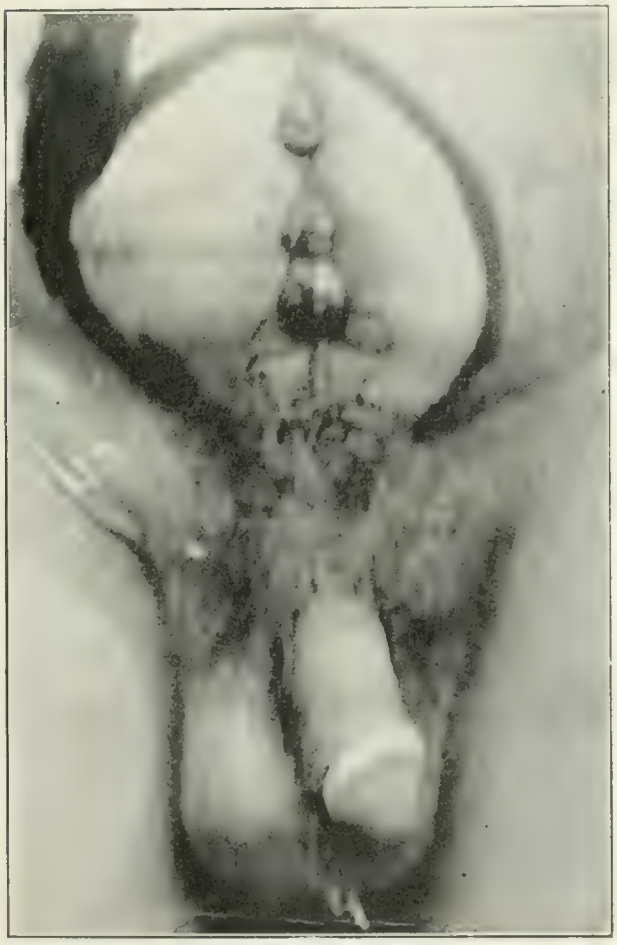


Fig. The outline of the tumor is represented by the circle and that of the lymphatic secondary deposit by the heavy prolongation upward on the patient's right. The photograph was taken too low to include all the secondary involvement palpable on examination. The three stitch hole sinuses, which appeared about a month after primary union, are also shown within the limits of the tumor.

requires a respect for ethics to report failures. The lesson that I have learned is that the cystoscopic picture of infiltration means a radical operation at once, although in this case the change in the bladder wall was very far removed from nodulation and other unmistakable signs of cancer. An interesting clinical question is whether the bladder cancer was primary, and later by direct contiguity reached the intestine, or vice versa. In favor of the former are the facts that the mass was small and papillary, its infiltration moderate and misleading, a tumor on external manipulation not made out at first, and the possibility that the wire of the electrode may have penetrated sufficiently to produce a localized peritonitis with the adhesion of omentum and bowel. The absence of intestinal symptoms in the presence of such a mass is at least suggestive, as the man has had no difficulty, until long after the operation, when diarrhea and pain, but absolutely no obstruction, have been present. Seemingly, bleeding from the bowel is still to occur, if at all.

In discussing the rather remarkable condition revealed at operation with my colleague, Doctor Martin W. Ware, he offered what seems to me a very probable explanation, namely, that the electrode when buried deep into the base of the tumor had provoked a distinct local peritonitis, which had been followed by the adhesion of the omentum and the cecum and this in turn by a purely inflammatory deposit of rather large proportion in the latter. It would have been interesting to have opened the cecum in order to clear up this point. I am not certain that it occurred to me definitely at the time of the operation. Later, in discussing this point with Doctor Tilton, he felt that it would hardly have been justifiable on the ground of the patient's unfavorable condition.

Against the supposition that a vesical tumor has invaded the cecum is the fact that adenocarcinoma is common in the intestine, and extremely rare in the bladder. Moreover, the character and situation of secondary deposits might be regarded as intestinal rather than vesical. On the other hand, there is, up to the present, no fecal fistula into the bladder or upon the surface, whereas a urinary fistula through the sinuses has appeared.

The following case is one of benign papilloma of the bladder and urethra removed by treatment with the high frequency current of Oudin. The peculiarity of this case is that at the initial diagnosis, it was stated that the two papillomata were situated in the ureterotrigonal segment of the bladder, the large one at and near the left ureteral meatus, and the small one close to the sphincter on the right side. After the field was cleared by the removal of the large one, it was found that the second papilloma was of considerable size, but in the urethra, just outside the sphincter in the patient's upper right quadrant of the urethroscopic field. What had occurred to make the error in diagnosis was, that some of the papillæ of this growth had caught in the cystoscope and been dragged into the bladder with it, which accounts for the great difficulty experienced in getting a focus upon the growth and in preventing it from rapidly obscuring the field.

After the larger papilloma was removed, cystoscopy with the laterovision and retrovision telescopes and the Buerger urethrocystoscope failed to locate a second vesical growth which was found only on doing a urethroscopy.

Case II. H. C. U., United States, white, aged forty years, married, salesman. (No. 12,754.) First seen April 21, 1913, referred by Dr. Browne Morgan, of Bloomfield, N. J. *Family history:* Death of father by accident, of one brother as an infant, and one sister in childhood. Mother living and well. Wife without venereal, female disease, children, or miscarriages. Former venereal history of all kinds denied. Present urological history stated that intercourse had been only once in two weeks on account of bleeding during the past four years. This began without known causes, emaciation, fever, or pyuria. Seemed to be excited by constipation, catharsis, or diarrhea. Urine colored with blood and at the end of urination nearly pure

blood. No gravel or stones. Pain in the penis was sharp and only occasional. Diurnal urination was nearly every four hours and nocturnal about every eight hours. Urgency occasional and moderate with and without bleeding, likewise tenesmus. The bleeding through the previous two years had been a more or less chronic symptom so that out of each month he would have six or seven days with blood in definite quantity, at other times none. The amount was commonly a few drops at the end of urination, never a glassful; persisted for one day, rarely more. Sometimes intermitted during a day of its presence. Efforts to evacuate all the urine from the bladder brought blood. Constipation acted similarly. As a suburbanite, traveling in the railroad and automobile did not affect the bleeding. Frequent uranalyses negative except for a few pus and blood cells.

"Cystoscopy done in June, 1912, was said to have been negative, but cystoscopy done by the writer recently showed a large papilloma back of the right ureter slightly near the middle line, and another larger papilloma on the left side completely hiding the left ureter and encroaching upon the trigonum and neck. This patient should have been cystoscoped four years ago when the bleeding first began. The cystoscopy of June, 1912, must have for some reason failed of thoroughness and final diagnosis."[1] Frequent uranalyses were negative, except for occasional pus and blood cells during the interval of respite from bleeding.

Treatment with the high frequency current of Oudin was applied to the papilloma about the left ureter at nine sittings from April 30 to July 17, 1913, each sitting followed closely the directions of Bier, namely, a quarter inch spark gap, switch open, usually half way, occasionally fully, electrode buried into the papilloma and current applied often two, sometimes three, minutes, until effects shown by deep blanching or blackening appeared. The tumor disappeared slightly between each treatment, but never in masses enough to permit of pathological examination. Fragments presented by the patient were to the naked eye too much altered for this purpose. Applications were discontinued, July 17th, and the most careful cystoscopy at this time revealed a nearly healed wound, which later closed without perceptible scar or any change in the mucous membrane around the attachment of the growth.

The urethral papilloma was now attacked in the same manner. August 7th, five applications of the high frequency current were made, and on the 21st the Buerger rongeur was used to pick up little fragments. September 12th, the patient complained of pain in the left thoracic region, which was negative on physical examination as was the left kidney region. During the interval between two treatments, about the middle of the course, the patient complained of severe pain in the left kidney region and it was feared either that a stricture of this ureter had been induced or that a pyelitis was imminent. All these symptoms cleared up, however, and after the scar had healed, no change in the left ureteric mouth could be demonstrated. The patient was discharged, cured, September 25, 1913, and subsequent examination revealed no return of the mass.

The following is another example of benign papilloma of the bladder situated in the urachal segment on the patient's left side. In this case fragments unchanged by the treatment and large enough for a pathological examination, were obtained and submitted to the Department of Pathology, Cornell University Medical College with the report of simple papilloma of the bladder (July 24, 1913).

[1] This case was reported by the author in a paper on Hematuria, New York Medical Journal, May 3, 1913, from which the quotation is taken.

Case III. F. H. L., German, aged forty-seven years, barkeeper (No. 12,769), first seen May 15, 1913, referred by Dr. R. W. Gelbach, of Hoboken, N. J. Diagnosis, benign papilloma of the bladder. *Former history:* Negative, moderate alcoholic and tobacco habit. *Family history:* Father died of unknown cause, mother of old age, one healthy living brother, three deceased of infants' diseases, and four living healthy sisters. There was no history of cancer, tuberculosis, nor syphilis in the family. Wife had had one or two miscarriages of unknown cause and two healthy children. *Personal history:* Always had good health, but acquired typhoid fever twenty-five years before without renal complications. He had lost no weight from his average of 165 pounds; appetite and bowels were normal. Former venereal history admitted; urethritis once twenty years before, diagnosed and treated by a physician for about one month with internal methods. Syphilis and other lesions denied. Present urological history began with blood in the urine about fourteen months before, no cause known, rather copious with a few clots, no terminal bleeding. Second attack about seven months later. There had been altogether perhaps six attacks, and none had been violent. The last attack was five days previous to his call, when blood just showed and no more. The bleeding was without reference to intercourse, defecation, or any other known factor. Uranalysis negative, except for albumin due to pus cells. Flat vesical cells were noted.

Application of the high frequency current of Oudin was begun, May 19th, with the usual details of method and repeated briefly until June 17th, thereafter at biweekly intervals. In all only six applications were made, none during the month of July. August 4th, the wound in the bladder wall was nearly healed and, August 28th, only a small scar was left. November 1st, the patient reported no subjective nor objective urinary nor vesical symptoms. I desired to make a cystoscopy at this time, but the patient declined, preferring to wait until he, himself, finds a reason for it.

These three case reports may serve to illustrate the rule which should no longer be doubted, that every patient with blood or pus in the urine, whether only a microscopical factor or of marked degree, should at the earliest moment be taken to a cystoscopist for careful diagnosis, because the earlier the source of the blood or pus is known, the more adequate the treatment is likely to be.

45 West Ninth Street.

AN INFLATING GASTROSCOPE AND DUODENOSCOPE.*

For Inspection of the Organs through the Gastric Incision.

By Robert Coleman Kemp, M. D.,
New York,
Professor of Gastrointestinal Diseases, Fordham University Medical School,
and Albert Vander Veer, Jr., M. D.,
New York,
Lecturer in Gastrointestinal Diseases, Fordham University Medical School.

It has always been my endeavor, when possible, to be present at all operations on the gastrointestinal tract of my patients. As a result of this experience, as a spectator, extending over a number of years, it has been impressed upon me that the surgeon is often largely dependent upon his

*Experimental Researches from the Physiological and Anatomical Departments of the Fordham University Medical School, read before the Medical Association of the Greater City of New York, January 19, 1914.

sense of touch for the determination of the location of the existing lesion or lesions. For example, the induration of an ulcer is distinguished by this means. It is unquestionable that one may at times fail to detect an indurated ulcer on the posterior surface of the stomach by the method of palpation, while a nonindurated ulcer usually will not be detected at all.

In one patient suffering from severe gastric disturbances, hyperchlorhydria with vomiting, the surgeon and I agreed that the gallbladder was responsible. At operation, it was found to be infected and was removed. The stomach was carefully examined by external inspection and palpation, with negative results. The outcome of the operation was a temporary improvement in the symptoms. Subsequently the patient suffered from the symptoms of gastric ulcer, which ultimately was shown to be present.

On several occasions in cases with severe gastric disturbances, I have seen the abdomen opened with the result that no lesions were discovered. The abdomen was closed without further procedure. The operators were inclined to consider these conditions as "neuroses." Subsequently, these patients became much worse, and in several, gastric ulcer with hypersecretion was ultimately determined. Pure gastric neuroses I believe to be very rare, and I am becoming the more inclined to this view the longer I practise medicine.

After numerous experiences, such as just described, it occurred to me that a *practical method of internal inspection of the stomach at the time of abdominal section* would be of value; especially as incision into the stomach is performed either for gastroenterostomy or for partial gastrectomy, and the exploring instrument could be passed through that incision, or through one in another part of the organ, if necessary. The advocates of gastroscopy will advise examination by that method previous to operation. Though some have performed gastroscopy under local anesthesia, this procedure is undoubtedly unsafe, will impress you by its brutality, and does not allow free manipulation of the instrument. It seems only a question of time when some serious accident will occur. Chevalier Jackson, undoubtedly the most skillful manipulator of the gastroscope in this country, is strongly insistent on the necessity of general anesthesia for this procedure. An additional complete anesthesia before a capital operation, is objectionable in many cases, as is also prolonged anesthesia with gastroscopy, preliminary to laparotomy. There is always danger of damage to the esophagus and stomach, particularly to the latter, if there is ulcer or cancer. Moreover, the field of vision is comparatively limited, and it is possible to explore only a relatively small portion of the organ. The extension telescopic instrument, with rectangular handle, is safer for introduction, but the other objections hold good. While conducting these experiments, I noted that some foreign observer refers to the possible value of direct vision through a gastric incision and stated that he had tried an esophagoscope[1] or similar instrument. We can find no literature on any instrument or experiments such as we describe in this article.

It is scarcely necessary to state that the writers of this paper invariably resort to the x ray examination by a competent radiologist, before operation. Unquestionably, much information can be thus secured, but the interpretations of our most eminent radiologists are not invariably correct, nor will the radiograph always show the lesion. The diagnosis is at best made from the clinical symptoms plus the x rays. The old saying, *Humanum est errare,* is true for us all. Pfahler once remarked: "Next in accuracy to exploratory operation for the diagnosis of cancer of the stomach is the x ray."

During the course of our experimental investigations my associate, Doctor Vander Veer, and myself discovered a particularly important fact, that *an ulcer of considerable size may be present in the stomach, so covered by the folds of the mucosa that it cannot be seen through the gastroscope, unless the organ is inflated.*

Incising the stomach of a living dog, we resected a piece of the mucosa and submucosa to the extent of a diameter of half an inch, staining the raw surface green with fluorescein. We then inserted through the incision a pneumatic gastroscope, of the diameter of one inch, and though we placed it directly over the damaged region, with a brilliant light shining upon it, we could not pick out the artificial ulcer. After applying the special clamp and inflating the stomach, the folds of the mucosa flattened out and the raw surface could be readily detected.

Unless, therefore, an ulcer is well indurated and in a palpable location, it is perfectly possible for it to lie concealed within the folds of the mucosa, and to be even of considerable size, yet it will be impossible to locate it except by direct vision, combined with inflation of the stomach. This probably explains cases in which from the clinical symptoms we believe gastric ulcer to be present, and yet no occult blood can be determined in the gastric contents, nor has the radiograph given us any assistance. I have even known the fluoroscopic interpretations of disturbances of motility to be erroneous. Moreover, the x ray shows a definite picture, which at times may admit of more than a single explanation. For example, in a patient of mine there was a bismuth deposit six hours after its ingestion, covering a considerable area in the fundus of the stomach. We have seen such deposit on the surface of a gastric ulcer. There was no ulcer in this case, nor even would ulcer possibly suggest itself from the clinical symptoms. There were probably some small weblike adhesions causing local interference with motility, with the resulting retention of bismuth in this area. In my belief, severe hyperchlorhydria with no ulcer, or hyperchlorhydria of marked type secondary to disease of the gallbladder or appendix, may produce pyloric spasm, or motor disturbances of the first part of the duodenum, which cannot be differentiated from those caused by ulcer, so that the x ray, or *rather its interpretation,* cannot invariably settle the diagnosis.

Bassler, in an excellent article, has recently impressed upon us the necessity of careful considera-

[1] We learn that Roosing reported before the American Medical Association experiments with inspection of the stomach with a cystoscope and that Gallant used the cystoscope for the same purpose.

tion of the clinical symptoms and the possibility of error from x ray diagnosis alone.

There is as yet no "prophet Daniel" to interpret the x rays, even though there seem to be some aspirants for that position.

You will doubtless remember that in superficial ulceration of the stomach, described by Dieulafoy, it has been demonstrated that even on autopsy, it has proved difficult to detect the ulceration, as it may be concealed in some of the folds of the mucous membrane.

This would further suggest the value of the inflating gastroscope, to locate a hemorrhagic lesion requiring suture. The rugæ of the mucosa of the stomach of the dog were well marked toward the pyloric end, and the pyloric opening was larger, in proportion, than in the human subject. In the cadaver, the mucosa of the stomach showed few rugæ, due to the *absence* of turgescence from the circulating blood, and the loss of muscular action. The mucosa of the stomach in the living subject differs in appearance from that of the cadaver.

Having thus indicated the causes leading to our investigations, let us first refer to certain facts which explain the possibility of artificial inflation of the stomach and duodenum. When air is pumped through an artificially produced gastric fistula into the stomach of an anesthetized dog, there is spasmodic valvular closure of the cardiac orifice and the stomach gradually dilates; the pylorus finally opens and distention of the duodenum occurs up to the point crossed by the mesenteric vessels, so called acute dilatation of the stomach and duodenum. The some occurrence takes place in the fresh dead dog and in the cadaver. These facts have been demonstrated by Albrecht, Kelling, Lewis A. Conner,[2] Braun, and myself,[3] associated with Dr. A. T. Weston in experiments studying the production of acute dilatation of the stomach. In the living human being, acute dilatation of the stomach occurs to a marked degree before the cardiac orifice opens and vomiting ensues.

The closure of the transverse duodenum, which took place during the experiments, I believe to be due to pressure from the distended stomach, torsion by the muscle of Treitz, and the downward pull of the mesenteric vessels combined. Complete distention of the stomach and duodenum, therefore, occurs before the cardiac orifice of the stomach opens. These facts explain the possibility of artificial gastric distention.

INFLATING GASTROSCOPE.

It became necessary, therefore, to devise a gastroscope of such a type that inflation of the stomach could be carried out. The instrument must be passed through an incision into that organ and a circular clamp devised, which, grasping the incised wall, will hold it tightly against the tube and prevent the escape of air.

An instrument based on the principle of Tuttle's inflating proctoscope best fulfills these indications. The light carrier, however, must lie inside the tube, so as not to interfere with the spherical clamp. There are six projecting rims on the instrument, each one sixteenth of an inch in diameter, which completely encircle the tube, one at the entering tip and each in succession an inch apart. They prevent the circular clamp from slipping down. The rim acts as a plug or washer, so that when the edges of the incision are drawn up above it and the circular clamp is applied, no air can escape. The circular clamp extends into a beak further to prevent leakage.

We found, however, that if any escape of air occurred, it could be readily checked by the application of an ordinary artery clamp. One will note the projecting rim at the tip of the instrument, thus enabling it to be clamped in at this point and so explore the mucosa adjacent to the incision. By means of the rims at various intervals, one can insert the tube to different distances and thus explore the entire stomach from the fundus to the gastric side of the pyloric ring. The spherical clamp is covered with rubber, to prevent injury to the musculature of the stomach. The handles are straight, as a rule, though the rectangular handle, suggested by Dr. William P. Healy, may sometimes prove more useful.

We found, by experiments, that a light at the tip of the instrument near the mucosa, was preferable to a light reflected from near the eyepiece. The

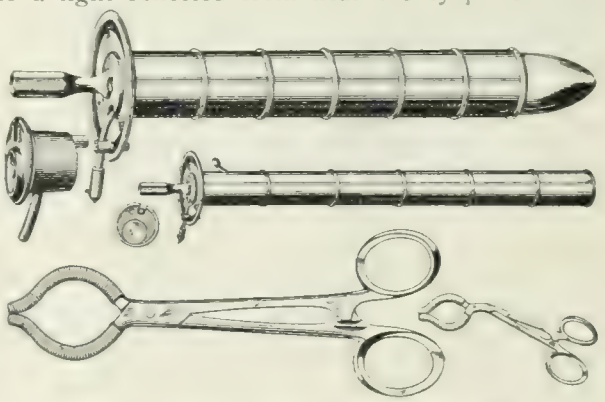


Fig. 1.—Inflating gastroscope and duodenoscope.

eyepiece fits snugly and has a short side tube for attachment of the inflating bulb. The best bulb for the purpose, is that employed for the Tycos sphygmomanometer, since the small side valve enables one to allow the escape of moderate amounts of air, if the inflation is excessive. The dimensions of the instrument are as follows:

Length	6 inches
Number of rims	6
Diameter of tube (inside)	29/32 inch
Diameter of tube (outside)	31/32 inch
Diameter of tube, with rims	1 1/32 inch
Rim projects	1/16 inch

There is an introducer for the tube, which is subsequently removed and the eyepiece and light placed in position. There is a detachable metal handle. Fig. 2.

THE INFLATING DUODENOSCOPE.

This instrument is twelve inches long; of a diameter of one half an inch; the first projecting rim lies three and one half inches from the tip; each succeeding rim is separated by an inch. The instrument is introduced by direct vision, preferably through an initial small opening in the stomach, the duodenum being first explored. The opening then

[illegible] March, 1900.
[illegible] November-December, 1900.

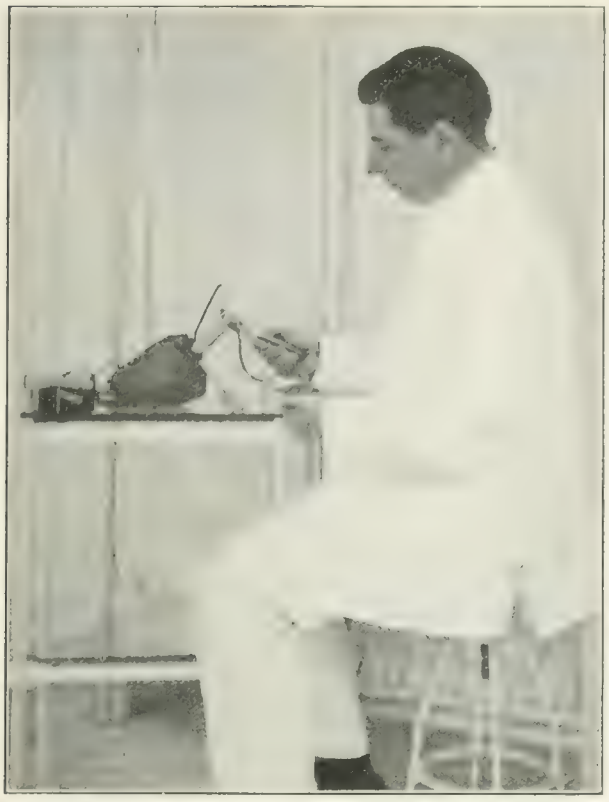


FIG. 2.—Inflation of a rubber bag with the pneumatic gastroscope, demonstrated by Dr. H. Day, of the Manhattan State Hospital staff. Through the courtesy of Dr. William H. Mabon, medical director, we were able to secure the services of Mr. E. K. Hill, who is responsible for these excellent photographs.

can be enlarged for the introduction of the gastroscope. The inflating tube in this small instrument is directly attached by a branch to the main tube, thus giving more space for the eyepiece. The duodenoscope cannot be employed when there is marked pyloric stenosis, and its field of usefulness is therefore limited.

We are all familiar with the principle of the operating cystoscope. This is simplified in our instruments. Eyepieces are made in which there is a small short tube, through which thin forceps, or a curette which fits snugly can be passed and the necessary procedures carried out while the organs are inflated. This special eyepiece is usually unnecessary, however, as is demonstrated by our last experiment (No. 8). These instruments are shown in Fig. 1.

My patient is always prepared for operation upon the stomach as follows:

1. Hexamethylenamine, grains five, three times a day, to disinfect the genitourinary tract.
2. Sodium bicarbonate, grains twenty, three times daily, to prevent acidosis.
3. No solid food, *no milk*, for twenty-four hours previous to operation. All food liquid, strained and sterile; water sterile; mouth washed with acetozone one to 1,000, or a good mouth wash before and after food; also a gargle.
4. Half an hour before operation (before starting the anesthetic) thorough lavage of the stomach with acetozone one to 1,000, or with sterile normal saline solution. All fluid is completely aspirated from the organ, so the surgeon has a clean and dry field.

By this method the stomach is certainly freed from some of the bacteria, and nourishment can be given up to nearly the hour of operation, often an important factor. Moreover, there will be the retention of food from the nervous element alone, even if none has been given for twelve hours, and most of these cases also suffer from motor insufficiency; hence lavage preliminary to operation is imperative.[4]

STERILIZATION OF THE INSTRUMENT.

Moist sterilization is apt to cause the damp instrument to short circuit the light, and also to break the glass light protector at the tip, from the unequal expansion of the metal and glass. Dry heat may be used on the metal tube, but may crack the glass. Others employ formaldehyde as a disinfectant, but this is at times inconvenient and is apt to stain the metal. Some of my friends merely thoroughly sponge their cystoscopes with ninety-five per cent. alcohol. We should advise a little more active method than merely wiping an instrument which is to be used within the abdomen.

The following experiments were carried out by Dr. E. E. Smith. The inflating gastroscope was inoculated with Bacillus coli and staphylococcus. Sterilization was attempted by various methods, with the following results:

1. Painted by iodine, rinsed in eighty per cent. alcohol and air dried. Sterilization incomplete. Iodine eroded the instrument slightly.
2. Same, wiped with sterile gauze. Sterilization incomplete.
3. Five minutes in eighty per cent. alcohol. Sterilization complete.
4. Dipped in a mixture of three parts of ninety-five per cent. alcohol and one part pure carbolic acid, wiped with sterile gauze. Sterilization complete.
5. Five minutes in four per cent. carbolic acid and wiped with sterile gauze. Sterilization incomplete.

In all instances when incomplete, the persisting organism was Bacillus coli.

The light carrier should only be wiped with eighty per cent. alcohol, or with the alcohol-carbolic solution and then dried with sterile gauze. The clamp forceps and introducer can be boiled; the eyepiece wiped in one of these solutions. The conducting wires, inflating bulb, and battery (Wappler portable six cell is convenient) should be covered with sterile towels. The gastroscope and duodenoscope can be suspended in alcohol (eighty per cent.) for four or five minutes, or for one minute in alcohol-carbolic solution.[5] The lower two thirds should be disinfected, the instrument being suspended vertically, then the upper inch of the instrument, the latter suspended by its tip. The rest of the instrument should be wiped in the solution carefully. *No fluid should be allowed to enter the containing sheath of the light carrier,* which lies inside the instrument. The instrument can then be wiped with sterile water and dried with sterile gauze and wrapped up in it. All these preparations should be completed before operation, so as to have the gastroscope ready for use. The Tungsten light is employed. It is brilliant, but readily burns out. Three or four extra lamps should always be at hand. Though an instrument with illumination at the detachable eyepiece could be more easily sterilized (i. e., boiled), the light from such is very unsatisfactory, compared with

[illegible] inserting the gastroscope, even through a posterior gastric incision.
[illegible]

apex illumination. As already noted, we have experimented with the different types.

The following series of experiments were conducted by us at the Fordham University Medical School, in the departments of physiology and anatomy, to whose chiefs we are indebted for numerous courtesies.

Experiment I. Dog, about seventy-five pounds, ether anesthesia. Laparotomy at external border of left rectus; incision 1.5 inch long into the anterior surface of stomach, the lower angle of which lies just above the lower border of the organ.

The inflating gastroscope in the first experiment secured its illumination from an electric light placed in a short oblique arm near the eyepiece. The illumination furnished was unsatisfactory, compared with that from the instrument with the light at the apex. The circular clamp, a model with spherical jaws, allowed slight escape of air at the tip, but this was readily prevented by clamping this point with a pair of ordinary artery forceps. In this improvised instrument, the eyepiece screwed on. To a short branch, the tube with the inflating bulb was attached, together with a Y tube and a manometer to determine the pressure used during inflation. An inflating bulb, such as is employed with the Tycos manometer, was found preferable, as by means of the screw thread escape valve, it was possible gradually to lessen the degree of gastric distention, when too great inflation was employed.

In this particular animal, with distention of the stomach under a pressure of 40 mm. of mercury, there was no escape of air from the cardiac orifice and the stomach became so markedly dilated and so much pressure on the diaphragm resulted, that the anesthetist noted respiratory disturbances. However, on allowing the escape of some air through the valve of the inflating bulb, the respiratory symptoms immediately ceased. The stomach, moreover, was even then sufficiently distended for the purpose of examination. An ordinary Tuttle inflating proctoscope was then fastened in the stomach, a circular ligature preventing the escape of air. It was thereby demonstrated that the light at the apex of the instrument gave excellent illumination, so that the stomach could be perfectly explored, and that *this type of instrument is preferable* to that with *the illumination near the eyepiece.*

We should state that, though there was perfect valvular action at the cardia and no escape of air through the esophagus, with the endogastric pressure already noted, undoubtedly some air escaped into the duodenum, with resulting distention of the latter up to the point crossed by the mesenteric vessels. Extreme distention of the stomach produced cardiorespiratory irregularity, but this could be readily avoided. Moreover, it ceased immediately, when the volume of air was slightly diminished.

Elevation of the shoulders and chest, so as to remove the pressure of the distended stomach on the diaphragm and lungs, is indicated when considerable distention is necessary for exploration.



Fig. 3.—Semi-Fowler posture for pneumatic gastroscopy (Manhattan State Hospital). Dr. F. R. Haviland and Dr. H. Day, of the Manhattan State Hospital staff, show the proper position of the patient and operator.

Experiment II. Dog, ether anesthesia. Similar methods were carried out in this experiment. An improved gastroscope was employed in this case, the light lying inside and at the tip of the instrument. This gave better illumination. The stomach of the animal contained considerable foreign material, and we determined the presence of several small bits of gravel, a minute piece of bone, and a small erosion, evidently traumatic, by means of illumination with inflation.

The stomach was perforated at numerous points by a hat pin; the point of the pin with a small section of the same could be readily observed through the instrument. The flange at the tip of the tube enabled us to clamp the tube directly at its entrance into the organ, so one could explore the mucosa adjacent to the incision. The additional rings at various distances rendered it possible to insert the exploring tube to various depths, and to place the tube in the inflated stomach directly over a foreign body. The air could then be evacuated and the body removed through the tube.

By the same method a scraping from an ulcerated surface can be removed for bacterial examination, or a small section for examination under the microscope.

Experiment III. Dog, ether anesthesia. The usual technic was carried out. A small traumatic erosion, not larger than the head of a large black pin was readily determined, as it lay in a portion of the stomach where there were few folds in the mucosa. An interesting experiment was then carried out.

On the posterior surface of the stomach near the pylorus, a section of the mucosa and the submucosa was removed, one half an inch in diameter, and the raw surface stained green with fluorescein. The fluorescein stain method is at times used to determine a small ulceration of the cornea.

This artificial ulcer lay amid the deep folds of the mucosa. Direct vision through the gastroscope failed to detect the ulcer. After inflation, the folds separated and the separation could be easily seen. We have already referred to this fact, that an ulcer may be present, as shown by the clinical symptoms, and yet on account of its being covered by folds of the mucosa, direct vision gastroscopy may fail to detect it, and no bismuth deposit may occur, so the x ray may not locate the ulcer, and numerous examinations may fail to determine occult blood, though the clinical symptoms of ulcer are present. Even on autopsy, a superficial ulcer (Dieulafoy) may be hard to detect until all the folds of the mucosa are separated. The value of inflation gastroscopy is therefore evident in some cases. In recurrent hemorrhage, for example, from a superficial ulcer (Dieulafoy), when operative procedure may be necessary, the usefulness of pneumatic gastroscopy to locate the lesion is undoubted.

Five experiments on the cadaver were then conducted at Fordham University and at the morgue.

Experiment IV. This experiment was performed on a cadaver in the anatomical department of Fordham University. The body had been injected and the stomach wall was extremely stiff. We were able, however, to demonstrate on this subect that the clamp was efficient in sealing the stomach, so that gastric inflation was a possibility.

The subsequent experiments on cadavers were conducted on subjects who had recently died and who had not been injected for dissection.

Experiments V and VI. These were performed on fresh cadavers, dead twenty-four hours. Dr. Albert T. Weston, who was associated with me in his experiments on acute dilatation of the stomach, to which we have referred, was of valuable assistance in these experiments.

In experiment v, incision was made along the left rectus border, and the stomach was opened to the extent of one and one quarter inch on the anterior surface just above the greater curvature. The gastroscope was inserted and clamped in, and then inflation of the organ was carried out and the light turned on. The stomach was first distended and then the pylorus opened and the duodenum distended up to the point of crossing of the mesenteric vessels. The entire organ could be readily explored, the pyloric ring appearing as a circular opening. It was subsequently found easily to admit the tip of the index finger and could be somewhat stretched.

Doctor Weston then removed the sternum and incised the diaphragm, also extending the abdominal incision, so

that the entire thorax and abdominal cavities lay open. He grasped the stomach at its cardiac orifice and manipulated it with his fingers. These movements could be observed through the inflating gastroscope. In Experiment VI, on the fresh cadaver, a small abdominal incision was made also a small exploratory incision through the anterior wall of the stomach. The pneumatic gastroscope was then inserted and clamped. On inflation the pyloric ring could readily be explored as well as other portions of the stomach. The patient was a fat subject and distention was a little more difficult.

Experiment VII. On a fresh cadaver; usual incision through the abdominal wall. *An incision through the posterior wall of the stomach* was then made, such as in posterior gastroenterostomy. The pneumatic gastroscope was inserted and clamped in and the organ inflated. It was possible even through this incision to explore the pyloric end of the stomach, the pyloric opening showing up very clearly, as did the fundus, the lesser curvature, and the posterior wall of the stomach.

On account of the position of the tube, the anterior wall could not be quite so completely explored. In this case it was evident that forceps somewhat rectangular in shape, such as suggested to me by Dr. William P. Healy, would be preferable, so the handles would not interfere.

Two safety pins (closed) were then dropped into the stomach. There was some fluid in the fundus and only the tip of one of the pins could be observed through the gastroscope. No attempt was made to remove them. This shows the necessity of a perfectly clean organ at operation, i. e., by lavage and complete aspiration of the fluid just before anesthesia.

Weston suggested that in some cases the purse string suture may be employed, instead of the circular clamp forceps. It could be readily tied in a bow knot around the instrument above one of the projecting rims.

Experiment VIII. On a fresh cadaver. The usual incision and anterior opening were made into the stomach. The organ was thoroughly swabbed out and a closed safety pin dropped into the stomach through the incision. The pneumatic gastroscope was then introduced and clamped and the stomach was partially inflated. In less than a minute the organ was explored and the pin located. The instrument was pointed directly at the foreign body, the clamp was loosened sufficiently to allow the wall of the stomach and clamp to slip over the successive rings of the tube, and the tube was pushed in gradually until the illuminated end lay directly over and contiguous to the pin, the latter being partially embraced by the circumference of the tube. Though there was leakage on account of releasing the clamp pressure, by frequently compressing the bulb the stomach was kept partially inflated.

As soon as the pin lay against the tip of the gastroscope, the window and light were removed and the light immediately replaced. Most of the contained air naturally escaped, the stomach to a great extent collapsed. The pin, however, could be seen perfectly, lying at the tip of the instrument. We had no long narrow forceps, the only instrument at hand being a large pedicle clamp, with the tip slightly curved. The gastroscope would hardly allow separation of the clamp, on account of the bulk of the latter. On the third attempt the safety pin was firmly grasped and the pin, together with the gastroscope, was removed. About two minutes were occupied by this procedure. No effort was made to draw the pin through the gastroscope. With proper forceps, it could readily be done, but it seems unnecessary.

Even after the foreign body is located by the x ray, it is often difficult to locate the object after laparotomy, as it may not remain in the same position. The value of direct inspection is self evident, and this enables one to remove at once the foreign body through the incision. We believe that, though a single gastric ulcer may be diagnosed fairly frequently, one or two small ulcers may also be present, which can only be determined by direct inspection. A posterior gastric ulcer, out of reach of palpation, may also be observed through the instrument.

As the writer believes that sixty to seventy-five per cent. of gastric cancers result from chronic indurated gastric ulcer, or form on the old scar of such, the importance of determining the extent of the ulcer and whether more than one is present, is evident, particularly as resection of the ulcer as a preventive of subsequent carcinoma should be performed. Removal of a considerable section of the stomach might be necessary, if several ulcers are present.

Several years ago a patient of mine had a simple gastroenterostomy performed for gastric ulcer. Three years later she died from carcinoma, which developed at the site of the former lesion.

To recapitulate, the direct pneumatic gastroscope may aid in determining:

1. Character and position of an ulcer.
2. Number of ulcers or erosions, and hence the degree of resection of the stomach required.
3. Position of a foreign body facilitating its rapid removal.
4. Study of the pylorus.
5. Point of endogastric hemorrhage. Its rapid ligature is thus possible.
6. Removal of a polypus.

Moreover, a scraping of an ulcerated surface may be secured and a study made of the bacterial types found in gastric or duodenal ulcers, and hence aid in determination of the etiology. A small section could also be obtained for examination. The instruments and technic described save considerable time and increase the thoroughness of abdominal exploration.

We believe that these procedures have a scientific basis and are of practical value, and if we have succeeded in impressing this upon the reader, we feel that we are well repaid.

103 East Fifty-seventh Street.
116 East Fifty-eighth Street.

THE ETIOLOGY OF ORIENTAL BERIBERI.*

Character of the Rice Which Causes Polyneuritis in Man and Fowls.

By Weston P. Chamberlain, M. D.,
Plattsburg Barracks, N. Y.,
Major, Medical Corps, U. S. Army.

Beriberi is usually defined as a serious, epidemic or endemic, peripheral polyneuritis, associated in many cases, with a marked degree of edema. It may be acute or chronic. The nerve degeneration affects particularly the vagi, the phrenics, and the motor and sensory neurons of the limbs, causing thereby cardiac irritability and weakness, gastrointestinal disturbances, and paralysis or paresis of the legs, combined with more or less anesthesia. In the so called "wet beriberi" there is a varying amount of edema, and frequently effusions into the pericardial, pleural, and peritoneal cavities. In the "dry" or "atrophic" type there is no dropsy and the legs are usually shrunken as a result of muscular atrophy. Between the wet and the dry forms there is every gradation, and frequently one type gradually merges into the other. The mortality in beriberi is con-

*Read, with permission of the Surgeon General, United States Army, before the Medical Society County of Clinton, N. Y., November 5, 1913.

siderable, usually resulting from cardiac paralysis or from intercurrent disease.

The symptom complex to which the name beriberi has been given is a very common cause of disability in many tropical and subtropical countries, particularly among the native populations of the far East. The same disease, however, or one closely resembling it in symptomatology, may be found under certain conditions in temperate climates. It has been reported among New England fishermen and elsewhere on shipboard, in asylums in Ireland, France, and Alabama, and among the inhabitants of Labrador and Newfoundland (40, 44, 50). Prior to the year 1907, the causation of beriberi was quite unknown, though the theories in regard to it were numerous. As a result of the earlier work of Eijkman, Grijns, and Sakaki, and the more recent investigations of Braddon, Fraser, and Stanton, and many other observers, the etiology of beriberi, *as seen in the Orient,* has been set upon an almost unassailable basis (1, 3, 24, 45, 46, 47). It must be admitted, however, that the facts so far brought forward in the far East do not explain as yet with perfect satisfaction the incidence of the disease in some other parts of the world (25, 50). This difficulty may best be surmounted by the assumption that the term beriberi has been made to cover two or more diseases quite similar in symptomatology, but due to dissimilar etiological factors. In a subsequent paragraph more will be said on this phase of the subject.

From 1910 to 1912 the Board for the Study of Tropical Diseases as they Exist in the Philippine Islands, of which I was then president, directed a large part of its attention to the study of beriberi, as seen in the Orient, and the following remarks as to the etiology of the disease are based upon the experience gained during that period.[1]

If a fowl is confined in a cage and fed on an exclusive diet of the ordinary commercial rice sold in the United States, the muscles of its legs will become paralyzed after a period of about one month.



Fig. 1.—Profile view of Fowl No. 6, showing well developed neuritis resulting from a diet of polished rice continued for 26 days.

This condition is the so called polyneuritis gallinarum. It is a degenerative process occurring in the cord and in the peripheral nerves, but generally most manifest in the motor neurons of the legs. Usually there is some involvement of the pneumogastric nerve, and this lesion, if well marked, probably causes the cardiac and pulmonary symptoms which simulate the pernicious attacks of beriberi seen in man. The degeneration is undoubtedly due to the absence from the diet of some substance essential to nerve nutrition (1, 2, 3, 4, 37, 42)

[1]The investigations in question were inaugurated by me, and at first were carried out in association with Captain E. D. Kilbourne, Medical Corps, U. S. Army, a member of the board. Subsequently Captain Kilbourne was relieved by Captain E. B. Vedder, Medical Corps, U. S. Army. Captain Vedder continued on this work after I ceased to be connected with the board, and his contributions are shown in references 26 and 42.

Identical results can be obtained by feeding fowls on certain other restricted and deficient diets (51).

If a man subsists on a diet consisting mainly of the same kind of rice referred to, beriberi will develop after a lapse of about eighty days. The symptoms manifested will closely resemble those seen in the fowl, and the lesions in the nervous system are identical.[2] The similarity in the etiology, in the pathology, and in the symptomatology of the two conditions, leaves little room for doubt that in beriberi and in polyneuritis gallinarum we are dealing with essentially the same pathological process (6, 61).



Fig. 2.—Front view of Fowl No. 6, showing well developed neuritis resulting from a diet of polished rice continued for 28 days.

If a woman eating this same kind of rice diet gives birth to a child, and continues to suckle it, the infant in a large number of instances will manifest a disease which is extremely common in the Philippines under the name of *taon,* and which is believed to be infantile beriberi. This malady is the most prolific cause of the frightfully high mortality among breastfed Filipino babies. The disease is generally fatal if nursing is continued, but recovery is nearly always prompt when the child is placed on a diet of canned milk or fresh cow's milk. In many instances the mother manifests early or rather advanced signs of beriberi. In other cases she appears healthy (8, 9, 10, 11, 12, 13, 15, 16, 23, 52).

Instead of using the commercial snowy white article familiar to us in the United States, we may employ a grade of rice having a part of the inner skin, or pericarp, left on the kernel. Subsisting on such a grain the chicken and the man remain well. If to the chicken, which is being fed on the snowy

[2]It should be stated that edema has not been reported in fowls suffering from polyneuritis gallinarum. Edema, however, is not an essential feature in beriberi since many cases of the so called dry type never show any dropsy. It is natural to expect that some variation in their reactions to a defective dietary would be manifested by two organisms which differ as widely anatomically and physiologically as do man and the domestic fowl. The surprising thing, therefore, is not that there are discrepancies between the symptomatology of beriberi and that of polyneuritis gallinarum, but rather that the similarity proves to be as great as it is.

white commercial rice, there is administered a daily dose of the pulverized skin ("polishings") which had been milled off its rice, then the fowl remains in perfect health indefinitely. An alcoholic or an aqueous extract of this skin exerts the same protective influence on fowls. If the baby with infantile beriberi is given this same extract of rice polishings, while continuing to be nursed by the mother, its recovery is as prompt and marvelous as that seen when fruit juice is administered for the cure of infantile scorbutus (1, 3, 4, 5, 6, 15, 23, 37, 38, 60).

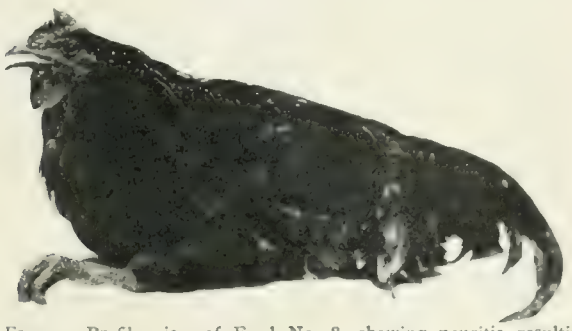


FIG. 3.—Profile view of Fowl No. 8, showing neuritis resulting from polished rice diet continued for 28 days.

The use of this rice with the skin or pericarp remaining on the kernel has led to a great reduction or to a complete disappearance of beriberi in many places in the Orient where it has been tried[3] (17, 19, 20, 21, 22, 31, 48, 54). The most conclusive evidence has recently been submitted by Heiser (53). At the Philippine Leper Colony at Culion beriberi was rife until unpolished rice was substituted for the polished grain which formerly constituted the bulk of the ration. The disease then disappeared and remained absent for two years. As a result of economic factors it then became necessary to sustain the patients on polished rice. Beriberi began to appear in about two months thereafter, and a total of 111 deaths occurred from this cause. About three months later unpolished rice was again put into use and new cases of beriberi ceased to appear. An exactly similar incident has been described in an asylum in Siam, beriberi reappearing in seventy-four days after a diet of polished rice was resumed (54). Its occurrence was checked by the use of polishings and undermilled rice.

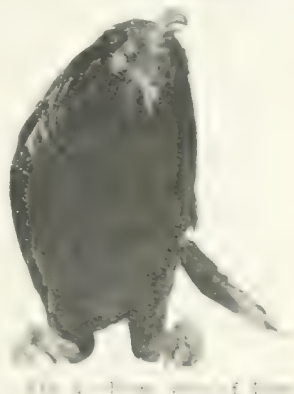
In view of the foregoing facts it becomes important for the tropical practitioner to have some knowledge of rice and its preparation for the market, so I will briefly touch on the matter. The methods of milling described are those practised in one of the largest of the English mills in the Philippines.

The endosperm of rice consists almost entirely of starch granules, except for a thin outer portion, termed the *aleurone layer,* which contains the albuminous material of the seed together with most of the fat. Outside of the aleurone layer, and adhering to it, is the *inner skin* or *pericarp.* The color of the pericarp varies in different species of rice from white to nearly black. In the Philippines it is usually yellowish white or red. Outside the pericarp is the grayish *husk* or *outer skin.* Rice with the husk still on is called by the English *padi* and in the Philippines *palay.* The husk can readily be taken off without damaging the pericarp, but when the pericarp is removed more or less of the aleurone layer comes off with it, and in very complete milling practically nothing remains of the kernel except a lump of starch (24).

Palay is husked between large disks of artificial stone, revolving in a horizontal plane. The disks are separated by a distance about equal to the length of a rice grain. The chaff is winnowed out, and the husked grains are separated as far as possible from the unhusked by screening. At this stage little or none of the pericarp has been chipped off and the rice as it comes from the screen is called in Tagalog *pinaoa* or *pinawa.* This grain will prevent beriberi, but has rather too much pericarp left on it to be an attractive article of diet.

The next process, called *milling,* is carried out by means of a revolving cone made of artificial stone and having its axis vertical. Around it is a close fitting case of metal gauze. Friction between the cone and the case rubs off the pericarp and the aleurone layer, the degree of removal depending upon the distance between stone and netting, the speed of revolution, and the time spent in the process. The dust escaping through the net consists of pulverized pericarp and aleurone, together with some starch. It is commonly spoken of as *rice polishings* or *rice bran,* but its native name in the Philippines is *tiqui-tiqui.* Polishings contain a neuritis-preventing substance which can be extracted by water or alcohol. In highly milled white rices, like those universally seen in the United States[4], and very commonly in the Orient, all of the pericarp, and all or most of the aleurone layer, have been removed, leaving only a grain of starch behind.

The last process of treatment in the Philippine rice mill is the *polishing* which is carried out between a fixed wire screen and a conical buffer, revolving on a vertical axis and covered with sheepskin. The process is not applied to all rices. It cleans off the adherent *tiqui-tiqui* dust from the grain, but does not remove any appreciable amount of pericarp which may have been left when the preceding process of milling had been carried out to a limited degree only. Consequently the polishing process may be applied to undermilled rice without depriving it of pericarp, and this step will tend to free it from adherent *tiqui-tiqui* dust which probably makes the



No. 8, showing neuritis resulting from polished rice diet continued [illegible].

[3] Beriberi was extremely prevalent among the Philippine Native Scouts up to the end of the calendar year 1909. There was an average of 600 admissions a year from an enlisted force of about 5,000 men. Based on the assumption that beriberi was due to a ration in which polished rice bulked largely, certain changes of diet were made early in 1910, the most important being a reduction in the quantity of rice consumed, the use of undermilled rice, and the addition of a legumin component. As a result beriberi practically disappeared (18, 29). In 1910 there were forty-nine cases; in 1911, three cases; in 1912, two cases; in 1913 to June 30, no cases (a part of the records for this period of six months are not yet available).

[4] I am informed that an undermilled rice can be obtained in Boston, under the name of "natural yellow rice" (43).

grain more susceptible to the development of weevils.

At various stages in the process of preparation for the market the rice is winnowed and screened to remove dirt, dust, and broken grains, the commercial grade depending in part upon the thoroughness of these steps, and in part upon the original quality of the *palay*. In the United States we usually find only superior grades of highly milled rice, but in the Philippines many qualities of rice are on the market, the cheaper ones containing numerous broken and unhusked kernels, as well as dirt and dust.

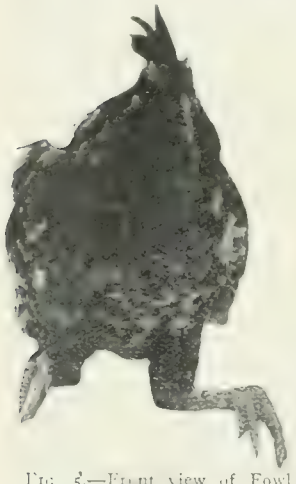


Fig. 5.—Front view of Fowl No. 2, in which developed neuritis after a diet of polished rice had been continued for 32 days.

As stated above, many of the Philippine rices have a red pericarp, but if this is completely removed by thorough milling the product is as white as if a kernel with a light colored pericarp had been treated in the same way.

In discussing the etiology of beriberi, many terms have been employed in a somewhat confusing manner to describe the rices experimented with. "Polished rice," "highly milled rice," "scoured rice," "white rice," "uncured rice," "steam mill rice," and "machine rice" have been used by various writers as synonyms for the decorticated rice which has been deprived of practically all of its pericarp and aleurone layer. The use of the term "white rice" in this sense is objectionable in that it may lead to confusion between color of pericarp and completeness of the milling process. "Polished rice" and "highly milled rice" are the most satisfactory descriptive terms to employ.

"Whole rice," "undermilled rice," "medium milled rice," "cured rice," "red rice," and "hand pounded rice" are terms which have been applied by different authors to rice with a considerable part of the pericarp and aleurone layer remaining adherent to the kernel. If sufficient of these two layers is left during the milling process, then the rice will not cause neuritis when used as an exclusive article of diet for man or fowl. If the pericarp is red, the grain in bulk will show various shadings from brick red to pink, depending upon the amount of the colored layer which has been removed. Rice with yellowish white pericarp which has been undermilled can be seen on careful inspection to be rougher and less pearly white than the highly milled grade. When an undermilled rice is soaked for a few minutes in Gram's iodine solution, and then washed and dried, the pericarp will be observed to be grayish, while the parts denuded of pericarp will be a deep blue or black. Highly milled rice treated in like manner will be stained so darkly blue throughout that it appears almost black when viewed *en masse*.

As far as presence of adherent pericarp is concerned, undermilled rice corresponds with the "cured rice" of India (24). Cured rice has been parboiled or steamed before milling, with the result that the pericarp is less easily removed from the kernel. Cured rice is never eaten by the Filipinos, nor, I believe, by the Chinese or Japanese. The Tamils in India make use of it and are said to be free from beriberi (24).

In the more isolated sections of the Orient much of the *padi* is still decorticated at home by means of a heavy pestle and a large wooden mortar. Unless this process of hand pounding is pushed beyond the usual limit, a large part of the pericarp is left on the grain. It is asserted that in natives using such hand pounded rice beriberi does not develop (20, 21).

In the United States and many other places polished rice is usually coated with a thin layer of talc and glucose for the purpose of imparting to it a more glossy appearance, and to increase its keeping qualities. As used by the trade in the United States the term, polished, appears to presuppose the presence of this coating, irrespective of the degree of milling of the rice. It has been shown by Wellman and Bass that the presence of talc and glucose is entirely without significance in the production of polyneuritis (51). On the other hand, if the coating of glucose and talc should be omitted the grain would be "unpolished," in the trade sense, even though it was highly milled and contained a dangerously low percentage of the neuritis-preventing element. At this point it may be stated that any legislation directed against the sale of polished rice in this country, such as is enacted or pending in certain States, is to be deprecated; first, because of the trade significance of the terms "polished" or "unpolished" as used in America;



Fig. 6.—Profile view of Fowl No. 2, in which developed neuritis after a diet of polished rice had been continued 32 days.

secondly, because the rarity or complete absence of beriberi in the United States renders such legislation unnecessary; and thirdly, because rice is such

a small factor in the dietary of our people.[5] As a matter of fact, many articles familiar to our table are as deficient as rice, or even more deficient, in neuritis-preventing substances.[6]

From what has gone before, it appears obvious that highly milled rice lacks some substance necessary for proper nerve nutrition, and that this substance is contained in the polishings obtained during the process of milling. In other words, the neuritis-preventing substance is in the outer coatings of the rice kernel. Only a very small amount of the neuritis-preventing principle is necessary to maintain health.[7] The same or a similar neuritis-preventing substance appears to reside in many common articles of diet, such as egg yolk, barley, peas, beans, and Phaseolus radiatus (called *katjang idjo* by the Dutch and *mongo* in the Philippines). It is also present in yeast. This element, so essential for nerve nutrition, is destroyed by a temperature of 120°C., and also by prolonged boiling.[8] Therefore a safe undermilled rice may be rendered beriberi-producing if cooked by steam under pressure (18, 22, 23, 26, 29, 34, 35, 37, 41).

The ultimate chemical nature of the neuritis-preventing substance has probably not yet been determined, though a vast amount of labor has been expended in efforts to isolate it. Schauman considered that it was a phosphorus compound, but it has been proved beyond reasonable doubt that this supposition is not correct (5, 27, 36, 39). A large number of substances have been shown by ourselves to be of no value in the prevention of that form of polyneuritis which is seen among fowls[9] (4, 5, 6, 26, 32). There is considerable reason to believe that this important principle is an organic base (28). Funk calls the substance he isolated a "vitamine" and has since shown that it consists of three fractions.[10] He considers that we are still in complete ignorance as to how it brings about a cure in neuritis (58). The identification of the neuritis-preventing element, and the study of its mode of action, is of great scientific interest, but the practical sanitary problem was solved when it was found that undermilled rice would prevent Oriental beriberi. All that remains is for the proper governmental authorities to compel the use, *among rice eating Orientals,* of a suitable undermilled rice. This can be accomplished by placing proper restrictions on the importation and milling of rice. It may be mentioned, however, in passing, that such a step is attended with some practical difficulties because of the ignorance, prejudice, and racial customs of many native populations (20). It can probably be effected more easily in the Christianized Philippines than in any other far Eastern country. When undermilled rice was first introduced into the native army and the civil institutions in the Philippines, there was much opposition to its use because the product was less carefully cleaned than polished rice, and also because it contained many red grains which rendered it unsightly. Subsequently the undermilled rice purchased for the army was prepared from *padi* with white pericarp, and was carefully screened and winnowed. Though not as snowy white as polished rice, it is by no means unattractive in appearance. It has a pleasant, slightly nutty flavor, being less insipid than the highly milled grain. This grade has given rise to no dissatisfaction among the Philippine scouts (31).

It remains to decide on a standard of milling to which a beriberi-preventing rice should conform. For some time it has been considered that a rice containing 0.4 per cent. of phosphorus pentoxide was a safe article of diet for Oriental peoples. Recently it has been suggested by Strong and others that this is perhaps a shade too low, and doubtless 0.5 per cent. of phosphorus would be a safer standard (7, 54). There is no difficulty in producing a satisfactory rice containing over 0.5 per cent. of phosphorus pentoxide. When the phosphorus content is adopted as a basis for classifying rices, it does not follow that one accepts Schauman's view that a phosphorus compound prevents multiple neuritis. It has been found that most of the phosphorus is contained in the pericarp of the kernel. Consequently the determination of the phosphorus content of the rice indicates the amount of pericarp left on the grain, and so gives a chemical method of estimating the degree of milling. The determination of any other element which was chiefly contained in the pericarp, such as potassium, would be an equally good index of the safety of a rice (4, 30). For practical purposes I believe that, after a little experience, the quality of a rice can readily be determined by mere inspection of the grain, either in its natural state or after staining with methylene blue or with Gram's iodine solution in the manner above described.

In conclusion, it should be stated that not all au-

[5] At the tenth annual meeting of the American Society of Tropical Medicine, held in Washington, D. C., May 6, 7, 8, 1913, the following resolution was adopted unanimously: ". . . Resolved: This society deprecates legislation in this country against milled or polished rice as a food. . . ." A full discussion of this subject will be found in references 51 and 56.

[6] Wellman showed by experiment that polyneuritis developed when fowls were fed on an *exclusive* diet of corn starch, Louisiana molasses, corn grits, cream of wheat, boiled sweet or Irish potato, sago, macaroni, wheat flour, and puffed rice (51). In the case of sago, Irish potatoes, and corn starch the symptoms of paralysis occurred, on the average, sooner than when fowls were fed on raw highly milled rice. The articles above named which were least deficient in neuritis-preventing substances, required for the production of neuritis an average of but forty days, a period which is only about ten days in excess of the average time found by Wellman and others to be necessary for the onset of polyneuritis among fowls subsisting on highly milled rice. In view of these facts it is absurd to legislate in the United States against rice unless action is also taken against these other articles, many of which are used more freely than rice in the diet of the American family.

Wellman's findings in regard to wheat flour are of special interest in connection with Little's report regarding the occurrence of beriberi in Labrador among people who at certain seasons live almost exclusively on wheat flour bread (40).

[7] Owing to a frequent misapprehension of the subject, even by some tropical practitioners, it is necessary to emphasize the fact that there is now little if any evidence to support the view that rice contains a harmful or toxic element which causes beriberi. The disease being due to a *deficiency* of a necessary nutritive principle, the fact is sometimes overlooked that the disease will not occur where rice forms only a small component in a mixed dietary, since sufficient of the neuritis preventing element is supplied from the other food substances in the ration. Beriberi, as dealt with in this paper, occurs only when the individual subsists *almost exclusively* on highly milled rice. This is a condition which obtains among hundreds of millions of Oriental natives.

[8] Possibly overheating, together with the facts brought out by Wellman (footnote 6), may account for some or all of the cases of beriberi reported among nonrice eating peoples, and which have discredited in the minds of certain persons the polished rice theory of beriberi production in the Orient.

[9] Among these may be mentioned potassium chloride and phosphoric acid, either singly or combined; potassium phosphate, acetate, or carbonate; magnesium phosphate; phytin; sucrose; extract of onions; lipoids of the lecithin group, and cholin; nitrogenous compounds such as arginin, histidin, asparagin, and various aminoacids. More recently Vedder has shown that polyneuritis gallinarum is not prevented by potassium iodide, thyroid extract, Rohmann's salt mixture, cotton seed oil, egg albumin, or a combination of several of these (50).

[10] This is of interest in connection with Vedder's suggestion that the wet and the dry forms of beriberi [illegible] food of a distinct substance for each type of the disease, the absence of one fraction leading to neuritis while the absence of the other causes prostration, cardiac failure, and dropsy [illegible]

thorities accept the polished rice theory of beriberi production (25, 49, 57). As a result of clinical and experimental evidence obtained in the Philippines I am personally fully convinced of the correctness of the theory as regards the beriberi *commonly seen in the Orient.* In some instances, particularly in certain asylums, on ships, and in South America, a disease called beriberi is reported to occur among persons who eat little or no rice (25, 33, 50, 57, 59). Three explanations of these facts may be offered: First, the dietary may be an unbalanced one, lacking the neuritis-preventing substance, even though it is not a rice diet (11, 40, 51). This phase of the question has already been discussed. Secondly, the neuritis-preventing principle originally present in the food may have been destroyed by excessive heat, for instance by cooking with steam under pressure. This possibility appears to have received no investigation. Thirdly, the term "beriberi" may include several varieties of peripheral neuritis caused by different factors. Instances of neuritis due to poisons, such as lead, arsenic, and alcohol, and to toxins produced by bacteria, such as the typhoid and the Klebs-Loeffler bacillus, are well known. That a diet of rice deprived of its pericarp will produce one type of neuritis in man, as well as in fowls, seems fully established. But it by no means follows that there may not be still other types of endemic tropical neuritis, each presenting a symptom complex not readily to be distinguished from that of Orinetal beriberi, and each having a distinct etiological factor which still awaits discovery.

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FIG. 7.—Chart showing decline of weight which occurs when a fowl is subsisting exclusively on polished rice

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Erratum: In article shown in reference 29, Table VI for month of December should show 0 admission instead of 10 admissions.

PLATTSBURG BARRACKS.

A CASE OF AURICULAR FIBRILLATION IN A CHILD.*

BY SAMUEL G. EHRENREICH, M. D.,
New York,
House Physician, Montefiore Home.

A certain type of irregularity is so common in childhood that it has been designated as the physiological, or, as Mackenzie calls it, the youthful type; that is, the sinus form of arrythmia. Premature beats or extrasystoles are also found in childhood and are not extremely rare; they may be auricular or ventricular in origin and are especially apt to occur after rheumatic fever, diphtheria, and influenza. Heart block, although comparatively rare in young individuals, has been described repeatedly during the course of diphtheria and acute articular rheumatism, and certain cases of heart block have been attributed to a previous diphtheria.

Perpetual arrythmia, or as it has now been proved to be, fibrillation of the auricle, is so rare in childhood that up to the present time I know of no published case occurring in a child under thirteen years of age. The characteristics of this condition are the absolute irregularity of the heart action and of the pulse, the absence of any "a" or auricular wave in the jugular portion of a polygraphic tracing, the absence of the "P" or auricular wave in the electrocardiogram, and the presence in the electrocardiographic curve of undulatory waves at the rate of several hundred a minute preceding the "R" or ventricular curve. Most of the cases of auricular fibrillation in younger adults occur on a basis of an old rheumatic endocarditis, usually of the mitral valve, and it is in these instances that digitalis preparations have their best and almost specific action; there is another large group of cases of adults and older individuals in which the fibrillation occurs in hearts which are sclerotic and in which permanent fibrotic and interstitial changes have taken place in the myocardium, and where, therefore digitalis can exert only a temporary and not a full therapeutic action.

The case I wish to report in this paper is a typical example of auricular fibrillation which was first observed in this child when she was nine years of age. She was admitted to the Montefiore Home three and one half years ago and is now ten and one half years of age. Her family history reveals nothing of importance and the only salient features in her previous history are the facts that she had measles when about two years of age, two or three attacks of pneumonia later, and an attack of influenza when six years of age. For a week or so following she gives an indefinite history of acute articular rheumatism; this lasted eight days and was followed by recovery; she then felt absolutely well for five months, when cardiac palpitation and precordial pain appeared, followed, one year later, by dyspnea. Since then she has had a few attacks of cardiac decompensation, manifested by extreme dyspnea, palpitation, precordial pain, edema of the feet, and congestion of the viscera; she always recovered from these after complete rest in bed, restricted diet, and large doses of digitalis, preferably of the freshly prepared infusion.



Fig. Showing marked enlargement of both sides of the heart, comparatively greater to the right.

On admission to the home, her heart action was regular, there was a dilatation of both sides of the

*Read at the Academy of Medicine, Section in Medicine, October 21, 1913.

heart, comparatively more pronounced upon the right side, and a double mitral murmur with marked accentuation of the second pulmonic sound. May 25, 1912, patient had one of her decompensated attacks, when she was put on digitalis and given complete rest in bed; at this time pulse and heart action were still regular; but, two days later, without any apparent cause, an arrythmia was first noticed, and on taking a polygraphic tracing typical curves of auricular fibrillation were observed. These together, with the electrocardiographic curves, make the diagnosis absolutely conclusive.

I desire to express my sincerest thanks to Dr. S. Wachsmann and Dr. B. S. Oppenheimer for their kindness in permitting me to publish this case.

510 West 144th Street.

LESIONS PRODUCED BY VARIOUS STREPTOCOCCI; ENDOCARDITIS AND RHEUMATISM.*

By E. C. Rosenow, M. D.,
Chicago.
(*From the Memorial Institute for Infectious Diseases.*)

The fact that certain strains of streptococci change more or less in their cultural and other properties under various conditions, is quite well known and has been emphasized especially by Walker, Davis, Buerger, and others, and I have shown that the organism from chronic septic endocarditis, Streptococcus viridans, can by animal passage be converted into pneumococcus. It is generally considered that Streptococcus viridans is an intermediate organism between pneumococcus and Streptococcus hæmolyticus. No one, as far as I can determine, has converted typical hemolytic streptococci into typical pneumococci. The necessary proof of complete transformation and the factors which make for changes in these microorganisms has not been brought forward.

During a study of this question during the past year it has been possible to transform typical, encapsulated pneumococci into hemolytic streptococci and vice versa. The transformation has been so complete that I have no hesitation in saying that if bacteriologists can differentiate a typical pneumococcus from a typical hemolytic streptococcus, then it is possible to transform one into the other. The pneumococci formed from streptococci have capsules, are indistinguishable from the former in morphology, correspond to all the differential tests known, have a pathogenicity more or less characteristic of pneumococci, producing hemorrhages in lungs and exudative pneumonia of a certain range in virulence, and pneumococcemia when still more virulent; are agglutinated specifically by antipneumococcus sera, and give rise to the formation of antibodies specific for pneumococci. Hemolytic streptococci formed from pneumococci behave exactly as do streptococci from the usual sources. During the transition of pneumococci into streptococci, and vice versa, there are intermediate forms which correspond to those strains, of which Streptococcus viridans is the most typical example, and to the streptococci from rheumatism. The apparent correct position of the various streptococci may best be illustrated by a partially flexed hand in which hemolytic streptococcus occupies the position of the little finger, the pneumococcus the place of the index finger (the opposite extreme), Streptococcus viridans (representing the group of more or less saprophytic, nonhemolyzing streptococci) the middle finger, Streptococcus "rheumaticus" the fourth finger, and Streptococcus mucosus, partaking some of the properties of both pneumococci and streptococci, the position of the thumb. In this grouping there is in general an increase in parasitism and virulence as we approach the thumb (Streptococcus mucosus). The fact that they are members of the same family is illustrated by their being members of the same hand.

The sign of reversible chemical reaction ($\rightleftharpoons$) between each member might be used to illustrate their transmutability.[1]

Owing largely to the work of Davis and Billings, Koch, Cole, Meakins, and others, we know that hemolytic streptococci have a marked affinity for the joints of animals and man. A hemolytic streptococcus was converted into Streptococcus viridans by growing it in symbiosis with Bacillus subtilis on the surface of blood agar plates. When it had acquired the morphology and the cultural features of the usual Streptococcus viridans, it lost the affinity for the joints and acquired a marked affinity for the heart valves, producing hemorrhages in the heart valves and endocarditis repeatedly without arthritis.

The affinity for the heart valves of Streptococcus viridans and for the joints of hemolytic streptococci was shown strikingly in a series of experiments which I performed some time ago, in which mixed cultures of these and mass cultures from tonsils were injected. The endocarditis which developed was proved to be due to the former and the arthritis due to the latter in the same animal.

The endocarditis following injections of Streptococcus viridans is embolic in origin, producing first subendothelial hemorrhages in the valves, and from this relatively avascular and protected region, the vegetations often attain a size large enough to be seen easily in forty-eight hours, sections showing many bacteria in clumps with only a few or no leucocytes present. The vegetations remain covered with endothelium for a variable time and then ulcerate, first along the line of closure, suggesting implantation endocarditis; they then often grow large enough to obstruct the valve orifice and produce death in part from this mechanical effect. This is undoubtedly a factor in some cases of endocarditis in man, especially where this form of endocarditis is implanted on a previously sclerosed and narrowed mitral valve. Sections of the larger vegetations produced experimentally, just as do those in man, show the presence of the organisms in large clumps and masses surrounded by leucocytic infiltration and deposition of fibrinous material. This peculiar manner of growth in the large vegetations serves to protect the organisms and leads to malignant endocarditis.

The same organism becomes transformed into a typical, lanceolate, encapsulated, highly virulent

*Presented to the Medical Section of the New York Academy of Medicine November 13, 1913.

[1]The paper giving the details of this work will appear in the February number of the *Journal of Infectious Diseases.*

pneumococcus producing now, neither endocarditis nor arthritis, but a rapidly fatal pneumococcemia instead. After I had transformed hemolytic streptococci, Streptococcus viridans, and pneumococcus one into the other, I felt that if there is such a thing as a "streptococcus rheumaticus" we must find it if possible and determine its relation to the other members of the streptococcus group. By the use of shake cultures in test tubes containing a large amount (approximately twelve c. c.) of ascites-dextrose-agar, thus affording a wide range of oxygen pressure, I have been able to isolate the organisms corresponding closely to those described by Poynton and Paine and others, from the joint exudate in fourteen out of sixteen cases of acute rheumatic fever. The negative results were obtained in two patients who were convalescing at the time the cultures were made. By a similar technic, in which the sediment of the blood, after hemolysis had taken place in distilled water, was planted, the organism was isolated from the blood in four out of seven cases, in two cases from the stools, and in one from the tonsils. The strain was isolated from the joint in a case of articular rheumatism without muscle involvement. This strain, together with others, formed very long chains and clumps in broth, produced relatively nonadherent large moist colonies surrounded by a zone of green on blood agar plates, and when injected into animals, reproduced the picture of rheumatic fever very closely indeed, producing transient nonsuppurative arthritis, the exudate showing few or no organisms, and a subendothelial nodular endocarditis in the same animal repeatedly, together with pericarditis in a number of animals. Ulcerative appendicitis, iritis, and conjunctivitis occurred not infrequently after intravenous injection of these strains.

These strains consist of diplococci and short chains and produce from the beginning a slight hazy and indefinite hemolysis. When these strains, together with other strains of streptococci which are made to resemble these, are injected into animals, they produce an embolic nonsuppurative myositis involving chiefly the flat muscles and more tendinous portion of the muscles of the extremities, a severe myocarditis involving chiefly the right ventricle, and arthritis and endocarditis similar to the strains from the cases in which the muscles were not involved. It must not be supposed that the lesions in the muscles are accidental. They occur only at a certain grade of virulence, and at this point the affinity for the muscles is so marked that the number of lesions obtained is in proportion to the size of the dose injected. After one or two animal passages it is again completely lost, and it is now impossible again to produce the muscle lesion.

A third type resembles those described as Micrococcus rheumaticus. They were obtained from cases without muscle involvement, produced small grayish colonies without a green or hemolytic zone, and simple endocarditis and arthritis without myositis and myocarditis when injected intravenously in animals.

The endocarditis following injections of the strains from rheumatism has been proved to be embolic in origin just as Streptococcus viridans endocarditis, but instead of producing large vegetations there appeared small vegetative nodules which nearly always remained subendothelial and showed a marked tendency toward healing, thus simulating the endocarditis of rheumatism in man.

The three types of organisms from rheumatism have been converted one into the other; all the strains have lost the more or less characteristic pathogenic and cultural properties. The first group now resembles Streptococcus viridans producing vegetative endocarditis without arthritis, the second hemolytic streptococci producing arthritis without endocarditis.

Owing to the kindness of Dr. Rufus Cole, I have been able to subject this idea of the transmutation of various streptococci to a supreme test. He was kind enough to send me his pneumococcus strains 1 and 2, and antipneumococcus sera 1 and 2. He and Dochez classify pneumococci into four classes, by their agglutination and protective reactions. His strain No. 1, a strain isolated about eight years ago by Neufeld, has been kept virulent ever since, and has always remained a typical pneumococcus. Cole has described it as a pneumococcus with fixed properties, even retaining a definite standard of virulence for months on ordinary media.

By appropriate means I have been able to convert both of these strains into hemolytic streptococci, no longer agglutinated by the antipneumococcus serums; when injected into animals both are found to have lost a large part of their virulence, and instead of producing death by pneumococcemia, both produced arthritis in rabbits and in one instance cholecystitis.

There is an affinity of streptococci for the mucous membrane of the stomach and duodenum in rabbits, dogs, and monkeys, which, while not so striking as that for the muscles, is nevertheless definite and is shown usually at a grade of virulence a little higher than when the affinity for the muscles is greatest. The ulcers are deep and infiltrated. Three of the dogs died from hemorrhage, two and four weeks after a single intravenous injection of streptococci. Sections, and as illustrated under one of the microscopes, prove the presence of streptococci in the depths of the ulcers as early as twenty-four hours, and as late as one month, after injection.

The fact that the grade of virulence is such as not to give the picture of a generalized infection, that the type and localization of the ulcer is strikingly like the ulcer of the stomach in man, together with certain clinical observations, suggest strongly that this may be a cause of ulcer of the stomach in man.

Owing to the cooperation of Doctor Mayo, Doctor Bevan, and Doctor Ochsner, I have been able, in conjunction with Doctor Sanford, to study the bacterial flora of four chronic indurated (duodenal and gastric) ulcers together with regional lymph glands in one. The number of kinds of organisms are very few, staphylococci being the predominant organism. In two, however, we obtained streptococci, and one of these strains showed an affinity for the stomach mucous membrane of rabbits and one dog, which was very striking. The results are suggestive and we hope will give us and others the cooperation of surgeons, who are in a position to supply the material for cultures.

At about the grade of virulence when streptococci show the affinity for muscles and stomach mucous membrane, they show an affinity for the gallbladder,

having produced cholecystitis repeatedly associated with beginning formation of gallstones in three instances, and in many instances the picture of an "ascending" pyelonephritis in both dogs and rabbits.

People's Gas Building.

HERPES ZOSTER OTICUS.

A Critical Review, with Report of a Case.

By Virginius Dabney, M. D., F. C. S.,
Washington, D. C.

Definition. By the terms herpes zoster auris, auricularis, oticus is meant that acute specific disease of the nervous system with a localization in the ganglia of the posterior root, exhibiting herpetic vesicles or inflammation somewhere along the external, middle or internal acoustic paths. Moreover, in the light of J. Ramsay Hunt's series of illuminating monographs, the last of which is a masterly exposition of his theories touching the neurology of herpes, it could well be defined as "acute posterior poliomyelitis of the geniculate and auditory ganglia" accompanied by vesicles, pain, palsy, or all of these in the distribution of the nerves from these centres. Gaudu quotes Landouzy as considering herpes zoster itself as a determination upon the nervous system of a general disease, having for its apparent (i. e., visible) manifestation a vesicular eruption. *Mutatis mutandis* this follows the preceding belief of Hunt and myself.

Etiology. As is frequent where no specific cause is definitely known in the study of a disease, many coincidences invest themselves in the garb of etiological factors; at least, the many alleged causative elements in the appearance of herpes zoster of the ear appear but groping in the dark. Thus, the French and Germans of twenty years ago, thought they saw in cold and sudden chilling of the body a definite cause, though this theory is not without its supporters now, as Dench mentions it as among one of several causes. Vail's case lends considerable color to it as well. His patient was exposed to a high, very cold wind after undergoing heavy manual work, so that his body, especially his face, became wet with perspiration. That night he was attacked with pain in the face, and suffered a severe attack of herpes of the ear. Achard inclines to the infectious theory, but refers to Hammerschlag's belief in a rheumatismal origin, which is the same thing, as we now accept rheumatism, as an acute infectious disorder. Voigt asserts, on the other hand, that zoster is not necessarily due to a lesion of the spinal ganglia. Thus none of these three observers seems able to decide on any one cause, hesitating in the selection of cold, sudden chilling, and infection. However, Klippel and Aynaud in a joint paper see more reason for accepting the infectious theory than any other, though they believe that climatic changes may predispose, just as Dench thinks dietetic errors may precipitate an attack. Closier concludes a thorough review of all the beliefs by the statement that it seems reasonable to assign an infectious cause, though Pollitzer uses the word "rheumatic," by which he either consciously or unconsciously means this. Extreme caution is exhibited by Stelwagon when he states that it must be accepted as probable that sometimes the disease is of infectious origin, adding the further observation that it is common to all ages, both sexes, and more often seen in damp, changeable weather. In giving traumatism and peripheral nerve irritation as causes, I feel that he has in mind simple zoster, as I do not concede that they are causes of the zoster herein discussed, though he gives as references Weir Mitchell, Keen, Picaud, Janin, Bulkley, Liveing, Kobner, and Touton. According to Radcliffe-Crocker the weight of opinion seems to incline toward chills, or as we say in America, "chilling," as a cause, though he cites Erb, Landouzy and Kaposi as enthusiastic advocates of the belief that it is an acute infectious disease. In an unusually interesting thesis Gaudu cites two cases that would seem to establish firmly the infectious origin. They are as follows: A Parisian suffering from the disease in question visited a small town in which it was known that no case was at that time existent, but after his arrival within the first six weeks seven cases were observed. The second observation was that of a medical student who evidently contracted the disorder from the examination of a patient in the clinic, as he was not in contact with any other disease, and this attacked him in a few days after contact with the case. Hay sums up his own views and those of the other investigators named as to the infectious nature of the disease by giving the following reasons pointing to an acute infectious origin. 1. Herpes zoster may be sporadic, but more frequently epidemic, e. g., in America in autumn and spring (Weis, Barthélemy, Kaposi). 2. Endemic in certain regions, e.g., in California in valleys as distinguished from mountains, relatively speaking (Keables). 3. Course of the disease precisely similar to that of the infectious exanthemata (Gerne). 4. Immunity apparently conferred by one attack, though this is not absolute; Kaposi reports one case with nine relapses (Hartzell). This does not weaken the argument at all, as measles frequently repeats itself in the same patient. 5. Jamieson has collected a few cases occurring in the same family in quick succession. 6. Graham's fatal case, whose autopsy showed softening of the brain, inflammation of the Gasserian ganglion and around the fifth nerve. Leptothrix threads and bacteria were found in the arterioles of these structures. He gives other reasons for his convictions, but these are sufficiently compelling. Walther states that three students who occupied the same room in succession, singly that is, were stricken with herpes, each of them, after a short occupancy. Head, while declining to speculate at any length on the causes of herpes zoster, says that the ages most likely to experience it are those between three and twenty, and that "cold has been invoked to explain its otherwise mysterious origin." Although it seems to be his belief that in a majority of cases a definite cause will escape discovery, yet many features of it point to an essentially infectious origin. The modern consensus and the conclusion of most competent observers and clear thinkers, are that herpes zoster is an acute infection, and while "the specific infectious agent is unknown it seems to possess

definite and special affinity for certain ganglionic structures, of which the posterior root ganglia of spinal nerves and the Gasserian ganglion are types" (Hunt). Inasmuch as those factors which produce herpes zoster of the costal, brachial, and cephalic regions would similarly, or might similarly produce zoster of the ear, their description and enumeration are given as authorized by recognized dermatologists in their treatises on the subject of simple zoster, supplemented by my own observation and that of other otologists, as noted throughout this paper. However, there is a symptomatic herpes accompanying or following caries (Dubler), arsenical and other chemical poisoning (Hutchinson), and in certain brain diseases, which is quite aside from true herpes, hence these causes are not operative in herpes zoster oticus. Nor is the herpes associated with suppurative disease of the ear, such as Blake's case, deemed pertinent here. While they are interesting cases the reports of herpes zoster oticus of Meyjes, Chatellier and Reismann must be excluded as they were connected with an acute or chronic middle ear discharge, and thus become symptomatic or incidental herpes.

Morbid anatomy.—If further evidence of the infectious nature of the cause of zona were needed, it could be supplied almost alone by the morbid changes in the ganglia and the regions affected following this change. Osler says that the posterior root ganglia show hemorrhagic changes and inflammatory foci, and even destruction of some of the single cells, while Hunt shows clearly that the ganglia and the nerve routes affected control the symptoms and determine the region in which the vesicles must be formed. In fact, he has classified his case reports on this basis, and consistently gives them thus: herpes oticus, herpes pharyngis, herpes linguæ and facial palsy, herpes of the cephalic extremity with seventh nerve palsy and auditory symptoms; endeavoring to show that the presence and extent of the pain, paralysis, vesiculation or deafness are in proportion, and limited to the nerve supply of any given ganglion and peripheral ending. Claude and Schaeffer throughout a substantial contribution to the study of this subject agree with Hunt's theories, and report a case showing an infection of the third, fifth, sixth, seventh, eighth, ninth, and tenth nerves, with symptoms to be expected from such an involvement. Despite the almost universal belief that zoster was due to cold, chilling, rheumatism, and various other vague and unsatisfying causes, von Bärensprung, in 1862 or 1863, first suggested that the causative lesion lay in the ganglion of the posterior root, and considered that he had verified his theory by his findings in one autopsy, though, as Head significantly remarks, his microscopical methods and apparatus must of necessity have been limited and crude, viewed in the light of our exceptional present opportunities and knowledge. Injection, hemorrhage, infiltration, or degenerative change were severally found by Charcot, Cotard, Wyss, Sattler and Dubler, but it is to Head and Campbell acting together that we have to look for the most complete and scientific inquiry into the morbid changes. These two, with extraordinary zeal and equal energy, combined with a rare scientific accuracy, undertook to define the central representation of the areas of skin affected in zoster. This they accomplished by close study of twenty-one autopsies in subjects who had shown an herpetic eruption from a few days to a year and a half before death. They found, among numerous other things, that there were hemorrhages into the ganglion, destroying it in part, with inflammatory exudation about it. The ganglion cells were sometimes destroyed or even sclerosed. To quote Head: "Secondary to this destruction of the ganglion cells there was more or less degeneration of the peripheral afferent nerves, and considerable change in that posterior spinal root in connection with the affected ganglion. . . . Zoster thus enabled us to determine definitely the supply of the posterior root ganglia; for in the acute stage the area affected on the skin was mapped out, and after death we determined the posterior root to which this area belonged by the degeneration that it showed when stained. . . . Thus, it seems certain that herpes zoster is associated with an acute inflammation of or hemorrhage into the posterior root ganglion, followed by more or less secondary degeneration in the posterior root and peripheral nerves connected with that ganglion." Accordingly, Hunt seems justified in his theory of the geniculate ganglion infection, and all the symptom complex ensuing, by an authority not easily to be set aside. The symptoms, to be dwelt on later at some length, carry out his tenets consistently.

From the preceding epitome of opinions it will be seen that most dermatologists accept in the main this theory of nerve infection, though Stelwagon and Radcliffe-Crocker modify it somewhat by their belief that the ganglion is not always affected nor the root always, but these apparent exceptions are found in symptomatic and not true herpes zoster, as it is treated here; hence the position taken as to ganglion infection is not thereby weakened.

Prodromata. There are no definite premonitory feelings, as the attacks are nearly always sudden and without anything other than a malaise to indicate a departure from the normal. Rarely, fever introduces the disease, and indigestion has been known to occur for a day, or a few hours before, of a peculiarly marked, insistent type.

Symptoms. 1. Pain. Of all the symptoms the only constant one and the most distressing is pain, deep seated in the depths of the ear, or over the mastoid region. It has been described variously as boring, lancinating and pulsating, but whatever its exact nature it is so severe and prostrating as frequently to leave the patient a neurotic individual for months following the convalescence. After beginning in the ear, it soon radiates to adjoining parts, even where the peripheral terminals are not involved, due to the neurosis which is a marked symptom of herpes.

2. Deafness. Escat's explanation of this symptom is ingenious, and does not lack scientific basis as well, though he does not carry out to the full his beliefs as applied to other cases than his own three, study of which, he believes, justifies him in these conclusions: 1. That zoster of the fifth nerve can produce otitis media similar to the otitis of tropho-

neurotic origin, experimentally produced by section of that nerve, and demonstrated by Duval, Laborde, Gellé, and Baratoux. 2. Auditory trouble can come from zoster of the fifth nerve by paralysis of the tensor tympani muscle. 3. Vertigo, as well as deafness, can be due to trophoneurotic perilabyrinthitis, without the existence of neuritis of the auditory nerve. Chavanne thinks that labyrinthine infection accounts for hypacusis where there is a coincident facial paralysis; at least in his own case, which showed tinnitus as well. When deafness is present it usually is not an early symptom, though it was the first of all the indications in my own case that there was an infection about the ear. It varies from slightly impaired sound perception to absolute deafness on the affected side, and is especially apt to occur in those cases complicated by facial paralysis. The limiting of the disease to the auditory apparatus without any manifestation elsewhere seemed to be so close an analogue to herpes zoster ophthalmicus as to constitute a condition worthy of a nomenclature suggesting its entity; hence, Körner, and later Gradenigo are credited with the introduction of the term, herpes zoster oticus. The former especially writes clearly of the symptoms and his reasons for this separate treatment. By the term "deafness" is meant any lowered acoustic perception; at least, I wish to be so understood in this discussion.

3. Tinnitus. This is present often without any deafness, but it is likely to be the precursor of it, unless the herpetic process rapidly abates. Escat's explanation of this abnormality is probably correct, in part at least. It is never an early symptom, save in those rare cases of profound infection, simulating meningitis (Buys).

4. Fever. Elevation of temperature is not the rule, though occasional instances of it are on record, when the attack may be ushered in by fever, nausea, vomiting, and the full train of symptoms of Ménière's disease, emphasizing the infectious nature of the disease. Such was Lannois's case, secondary to herpes of the shoulder and face, and complicated by facial palsy, tinnitus, and vertigo. Buys records a striking case of a girl, seventeen years of age, who had had headache and vomiting for a day or two, when photophobia and other meningeal symptoms ensued for three days. On the fourth day the pain centred over the mastoid, and on the fifth a group of vesicles made their appearance on the antitragus and lobule; on the sixth day there were more vesicles in the same region, but in fifteen days all the signs and symptoms had gone. Fever is more apt to appear after the vesicles have formed and broken, just as is the case in eruptive diseases generally, but, as before stated, it is only an occasional symptom and of no especial importance.

5. Eruption. After the disease has been established for a period varying from two to five days, the characteristic eruption appears in the form of grayish or bluish gray blisters, with whose advent the pain generally lessens, though unfortunately not always. These lesions may be situated anywhere on the pinna, canal, membrana tympani, mastoid region, and, it is reasonable to suppose, even on the mucosa of the middle ear, though this last named site has not been demonstrated to my knowledge as actually occupied by any herpetic vesicle. As it does invade other mucosæ, this supposition is not unreasonable, as suggested also by Hall, Gruber, and others. The drum is not usually inflamed in its entirety, when a vesicle is situated there, merely the base supporting it. This location is rather rare for the eruption, though it is perhaps not actually so unusual as supposed, as these cases are generally treated by the internist, who could hardly be expected to see the vesicles so deeply placed, especially when they were minute. However, Gruber, Hartmann, Bonnier, Orbison, and Chauveau each report a case, and my own had a well defined, grayish pink vesicle in Schrapnell's membrane, which disappeared twice and another appeared, each time lower down, of different shape, and of different size. Scars do not follow these vesicles unless the process is deep, as in the gangrenous type (Pollitzer, Kaufmann). Dermatologists all seem to agree that this eruption is so characteristic that after its appearance no physician is excusable who does not at once make a diagnosis, and I am inclined to agree with them where the vesicles are elsewhere than on the drum alone.

6. Paralysis of facial nerve and other nerves. Facial paralysis, paralysis of the soft palate, loss of sense of taste, with or without herpetic vesicles on the buccal mucosa or base of the tongue are all occasional complications of which facial paralysis is the most frequent. Hennebert reports a hitherto unpublished case of his own in which the vesicles in the concha and on the mastoid process preceded a facial palsy by five days. This sequence is usual, as it is only an extension of the original infection that will produce this effect; hence, the palsies are never the first symptoms, though in severe cases they may follow quickly the primary pathological appearances. Hennebert's paper is a distinctly valuable contribution to the literature, as he reports one case of Buys' and two of his own, none of the three having been published before. The various nerve infections and consequent loss of function are referred to, and pertinent cases cited by Chauveau, Orbison, Klippel and Aynaud, Hunt, Halphen, Chatellier, Closier, Körner, and Gradenigo.

7. Adenopathy. Dermatologists generally and Barthélemy, Winfield, Howard, and Hay all mention gland infection as occurring not infrequently, and generally prior to the eruption. My own impression, based on the examination of the reports of over fifty observers, is that it is either exceedingly rare, or that it frequently escapes observation. Some of the writers give Baudoin and Strümpell as corroborative reporters, but the references they give make no mention of this feature of the disease, and I myself do not quote them for this reason.

Diagnosis. Dermatologists seem to regard the determination of herpes zoster as simple, which may be the case after the appearance of the eruption, if it is one they regard as typical and easy of recognition. With herpes of the ear, however, the clinical picture is different, markedly so before the eruption, when the only guides are likely to be an excruciating otalgia and, perhaps, slight fever, with the confusing element of no abnormality of the drum, teeth, or throat, to explain a pain almost *sui generis*.

In fact, Kaufmann gives an interesting account of a case in which the diagnosis of acute mastoiditis was made and a mastoidectomy done; likewise, Halphen reports a case where the conclusion that the case was one of grave mastoid disease was irresistible, as it appeared to present acute catarrhal otitis media, acute mastoiditis, deafness, and possibly thrombosis of the lateral sinus, all due to the great mastoid pain, inflamed drum, swelling of the neck and facial palsy. Surely, in the absence of the eruption, no other diagnosis than that first arrived at was possible. In his investigation of the auditory prodromata, Hammerschlag frequently found difficulty in his diagnoses, and Vail in his case was much perplexed till the eruption dispelled the uncertainty in what developed into a typical case, impossible of wrong diagnosis, with vesicles in the canal, and later a generous crop below and posterior to the mastoid region. Bonnier faced a problem in diagnosis when he encountered in Dieulafoy's clinic a tuberculous syphilitic who exhibited ophthalmic and auricular herpes, with vesicles along the temperoauricular distribution, and six on the membrana tympani. In the light of the protean manifestations of lues, this picture would baffle many of us for a time, if not for all time.

Bearing in mind the rarity of true herpes zoster oticus, as previously defined, and the necessarily limited opportunity afforded most otologists for its observation, its recognition does not offer the difficulty one might expect, speaking relatively. Haug, for instance, collected statistics of ten thousand ear cases of all sorts, and out of this great number only nine were reported as true herpes of the ear. This astounding disproportion is, perhaps, partly explained by the fact that, as before remarked, those who encounter the disease may, for various reasons, not recognize it in some of its forms; in fact, this explanation occurred to Chauveau as well as to myself. Hennebert believes that, among other reasons for its seeming rarity, inaccessibility of the eruption to the eye of the attendant physician, or its suppression (to use his own expression) contribute to the idea that it is infrequent. The pain is so general over the side of the head, and is so benumbing to the powers of the patient's accurate estimate of location, that its determination in the ear alone is rarely suggested as the chief pain point. Here again is room for error despite the most constant symptom.

Prognosis. Auricular herpes is not a fatal affection, though some of its complications, notably deafness, may persist for weeks and even months. Kaposi's historic case had nine relapses, and Pollitzer had under observation one patient who experienced three relapses during this time. To fortify his belief that relapses as generally reported were not carefully studied, Grindon collected reports covering sixty-one cases of so called recurrent zoster, but by scrutiny of the histories satisfied himself that in the vast majority they were not true zoster, or true recurrences. Where there already exists a predisposition to it, deafness complicating zona will linger the longer for that reason, and a neuritis of the eighth nerve will resist longer than other nerve infections in this disease. Postherpetic neuralgia is the most troublesome symptom to treat, as it involves a neurosis induced by the long and intense suffering, and obscures the prognosis by an element of hysteria that is apt to lead the physician into errors of judgment. The vesicles generally dry up in a week, with the exceptions noted, and leave scars only where the vesiculation has struck deep, as in the gangrenous form or in the severe infections. No permanent damage has been recorded where the drum bore vesicles, nor has any case on record shown permanent palsy of any of the affected nerves, though as long a period as nine months has elapsed before a total disappearance of the facial paralysis in some cases. Lannois was unable to follow his case further than nine months, when the facial paralysis was not much improved; hence this must stand as a possible exception to my statement of ultimate cure in all cases (case cited by Achard in his thesis). Two weeks is the average time of convalescence from the pain and other acute, unpleasant symptoms, with occasional cases where the neurosis induced by the attack renders it longer.

Treatment.—There is no specific for herpes of the ear, and the palliative measures adopted to meet the symptoms as they arise, are but futile attempts at best, always saving the use of opiates of course. Heat is comforting in most cases, though cold is at times grateful where there is fever. Opening the vesicles is idle, and does not relieve either the pain or the deafness (Vail's case and my own). Ordinary dietetic precautions should be taken, the bowels kept open, and quiet enjoined. I am skeptical as to the curative or abortive effect of any and all local applications, as herpes in its resistance to treatment exhibits its selflimited feature, which is incidentally, another reason for considering it as an acute infectious disorder. It is sufficient to recall that local treatment cannot reach the ganglion or the posterior root. In prolonged convalescence the dermatologists seem to attach importance to the exhibition of zinc phosphide (Thomson, Bulkley, quoted by Stelwagon), large doses of quinine and strychnine, arsenic, zinc phosphide and quinine together (Stelwagon), and numerous coal tar products. The mere multiplicity of the remedies would excite suspicions of the efficacy of any one or two, or all of them. Of course, if the pain appears insupportable, as it does not infrequently, morphine or some other anodyne is to be used, though with the utmost caution, as these patients are peculiarly susceptible to addictions. In my own case codeine, in half grain doses sufficed, though it had to be given three times a day at first. This was reduced without the patient's knowledge, till she was getting sterile water twice and codeine once a day. For insomnia, a prominent symptom in many cases, veronal is useful. Galvanic, or, better still, high frequency electricity is most useful for the relief of the postherpetic [illegible] repeated from time to time. Protection against drafts and cold by enveloping the side of the head in wraps is worthy of trial, but the local application of ointments and dusting powders is useful, if at all, merely in aiding desquamation, and softening the skin where it is over a mobile surface, as the lower part of the mastoid. Head speaks well of the painting of the vesicles to prevent untimely

rupture and infection, and that ichthyol is similarly useful at times.

Case. On January 30, 1913, a woman, aged sixty-eight years, but of great vitality and seemingly not over fifty years old, complained of sudden deafness and tinnitus in her left ear, which showed no abnormality in any way. She heard the watch only on contact, and conversation at three feet. During the preceding four years I had had occasion to relieve by the ordinary methods an occasional stoppage of the Eustachian tube, and she was rather susceptible, under pressure of lowered vitality or of rhinopharyngeal congestion, to mild catarrhal disturbance of the middle ear. At this time the drum seemed normal in color, position, and mobility, and no difficulty was experienced in passing air into the middle ear with the Dench apparatus. Thus far the deafness lacked explanation, though there appeared some evidence of labyrinthine irritation. Several days later she returned with the additional complaint of pain in the ear, but nothing was found in the sinuses, teeth, throat, or ear itself to account for the pain. While I knew the patient had had a severe attack of herpes zoster of the eye, brow, and scalp some months before, which had caused her to lose twenty pounds in weight and left her much depressed in mind and body, yet as she had no lesions at that time and had not had any for two months, I was, perhaps, excusable in not seeing any connection between the two conditions, especially as there were no vesicles anywhere to suggest the causation. I treated her on general principles for a month when, at last, I was assisted to a diagnosis by the appearance on March 6th of a small reddish gray vesicle on that part of Schrapnell's membrane which merges into the tympanic ring. For diagnostic purposes I inflated the middle ear very gently and found no fluid in it, but the vesicle at the first jet of air elongated into a teat and at the second burst, exuding two or three drops of a bloody serum, strangely enough without any pain. This healed in two days under warm boric acid irrigation, but two days later there appeared a slight bulging in the middle portion of the posterior half, without any inflammatory appearance. This, which I now believe to have been an immature vesicle, was incised, yielding no discharge at all, and healed in three days. At this period the mastoid region and the sternomastoid muscle became very painful, and the patient expressed constant fear of a mastoid abscess. Treatment was continued once or twice a week till April 13th, when an immense, sausage shaped vesicle made its appearance, extending along the posterior margin of the drum from the inferior edge of the membrana flaccida to the inferior edge of the drum itself, a crescent of pinkish gray. On opening this the next day, only a slight ooze of discharge was visible, and the wound healed in four days. Meanwhile the pain and auditory annoyance were but little altered, and the patient left town for the summer much worn by the pain, though certainly better than a month before. After two months' absence she reported that she was much better, and, from her somewhat reluctant admission, I ascertained that the hearing was normal, and the pain rarely present.

The treatment for the deafness has been stated with its discouraging results, but the pain yielded temporarily to the various measures adopted, one of which, codeine, has already been mentioned. A strong galvanic current was effectual for a while in relieving the paroxysms of ear and temporal pain, but later this lost its potency, and high frequency electricity was substituted with the happiest effect, though it had to be repeated frequently. There existed a diversity of opinion as to the presence of lesions on one of the eyelids, where there had been vesicles during the active course of the disease, but there were certainly none when the vesicles appeared on the drum. Strychnine was injected, however, into the temporal region and tonics were administered, but no appreciable result was obtained by this therapy.

CONCLUSIONS.

Chavanne remarks that primary herpes zoster of the ear is exceedingly rare, but gives a case of his own, in which he attributes the deafness and tinnitus to labyrinthine invasion by the specific herpetic poison. Hunt seems to think that those cases similar to mine, in which there is a long interval between the auditory disturbance and the eruption or other manifestation of the disease, are properly classed as herpes zoster oticus, and that the hypacusis is most likely due to involvement of the eighth nerve somewhere in its course, perhaps most often in its internal ear distribution.

While my case could not strictly be classed as primary, clinically it was such, as there was no manifestation of herpes at the time, nor had there been for nearly two months. The points of interest are not altogether similar to those reported, and the cases are chiefly as follows:

1. Long period (month) between deafness and any definite herpetic manifestation. The pain could not be classed as such, as it was merely an unexplained otalgia.

2. The severity and persistence of the postherpetic otalgia—four months after healing of the last vesicle.

3. Futility of any treatment directed to a cure.

4. Success of high frequency electricity in temporary alleviation of pain.

5. Marked neurosis, which at one time exaggerated the symptoms, and yet at another allowed the substitution of sterile water for codeine, producing relief from pain, as much from one as from the other.

6. Successive crops of vesicles, or more properly, successive vesicles, as they appeared singly, and not in crops as is usual in other cases.

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1633 Connecticut Avenue.

PSYCHANALYSIS.

A Reply to Some Objections.

By Samuel A. Tannenbaum, M. D.,
New York.

In the New York Medical Journal for November 8, 1913, there appeared a communication from Dr. Meyer Solomon, of Chicago, bearing the title Review of Conclusions Drawn from the Freudian School, and differing from most English criticisms of the Freudian teachings in several notable respects. It was well written and free from the slurs, sarcasms, vituperation, misrepresentation, etc., that are so characteristic of the writings of our critics; it was fair, manly, and scientific in spirit and intention; it gave credit where credit was due; it was broad minded in its outlook, and this above all, it bespoke an earnest desire on the part of its author for knowledge and enlightenment. I have only two faults to find with this otherwise excellent paper; the author has only little knowledge of the subject and seems to have permitted a lethargy to overpower his logical faculty. In the following pages I shall take up seriatim the points raised by Doctor Solomon and attempt to answer them, but it must be understood that I speak only for myself. The Freudian school is in no way bound to any single individual's conceptions or theories:

1. "The Freudian school makes its great mistake in making each psychanalysis a sexual analysis. Psychanalysis should not mean sexual analysis alone." Psychanalysis is not exclusively a sexual analysis. Numerous cases have been reported in German and English periodicals in which nonsexual factors, e. g., desire for revenge, a vain ambition, disappointment, a sense of inferiority, etc., played the most important role in precipitating a person into a pyschoneurosis. The analysis of such phenomena as slips of the tongue, errors of speech, mishearing, misreading, mislaying objects, mistaken recognition, forgetting particular details, etc., has revealed a large number of other than sexual motives in the psychopathology of everyday life. We agree with Doctor Solomon that psychology and sexology are not synonymous.

2. "Because so many of their ideas are untrue, and hence most pernicious, Freudism, as it stands today, must in the end fall into disrepute." What is untrue is not necessarily pernicious, and may even be decidedly beneficial. What is untrue in the Freudian teachings will be rejected as soon as we are shown we are in error. Freud's departures from the current teachings of neurologists and psychologists are the result of careful clinical investigations and inductive reasoning, not the products of speculation. We are all well aware that the new science of psychanalysis is in a state of flux and evolution, that there is much more to be learned, that we are only on the outskirts of a vast and wondrous domain in which we must tread cautiously, and we are only too desirous of safeguards to help us retrace our steps if we have gone astray. Freud has been only too willing to modify his teachings in the light of additional facts. Whether we have overemphasized the sexual remains to be seen. Doctor Solomon says "he is certain that the Freudians are seriously in error in many of their ideas." To be certain is one thing, to prove is another.

3. "Many of the Freudians have been extravagant and rash in their dogmatic assertions." If so each one must answer for himself. The statements of every investigator and discoverer are apt to appear rash and dogmatic to one who does not or cannot verify them for himself. If some of Freud's disciples make bold to generalize and speculate on the results of their investigations that is their privilege; all that we can demand, if they want to convert us, is that their facts be facts and that their thinking be logical.

4. "Freudians believe that dreams practically always have a sexual meaning." This is true, although I should prefer to say that Freudians *find*, not believe. At the same time it must not be forgotten that a dream has many meanings, that is, that it fulfills many wishes, not only sexual ones.

5. "The difference between a normal and a neuropathic individual is one of degree only. Consequently, if the dreams of neurotics are fundamentally based on sexuality, then all the dreams that any of us have are dependent on sexuality." Be it noted that Doctor Solomon here speaks of "all the dreams," although, in paragraph 4, he was content with "practically always." Furthermore, it is not true that "a normal and a neuropathic individual" differ in degree only; they differ in kind too. Besides, what does Doctor Solomon mean by a "neuropathic individual"? Does he mean every departure from the normal? Moreover, to say that a dream has "a sexual meaning" is quite different from saying that dreams are "dependent on sexuality." Doctor Solomon's premises are false and consequently his conclusion is so too.

6. "The difference between the sleeping state, the waking state, and other states of consciousness is essentially quantitative. It therefore follows that the trend and content of the mental processes of every possible mental state are centred about sex-

uality. In other words, not a thought we have but what is ultimately dependent on sexuality for its origin." The fallacies here are almost too patent for serious refutation. The difference between the sleeping state and the waking state is not essentially quantitative. What sleep is, is one of the most difficult problems in modern psychology. The hypnoid state and the hypnotic state differ from each other and from other states of consciousness in other and more important respects than degree. Our thinking during the waking state is guided and influenced by the will, by ethical, moral, legal, and religious motives, by the knowledge of our relationship to persons and events, by concepts of time and space, etc. This is not so in dreams. In dreams we permit ourselves to desire things and to do things that we would not acknowledge to ourselves or attempt during the waking state, for there no one's censure can follow us, except our own. There we are not bound by the laws of reason; logic is defied and desire has the reins. Again, therefore, Doctor Solomon's conclusion is false. It is as if Doctor Solomon were to say that the difference between health and disease is essentially quantitative; but disease is dependent upon infection, trauma, etc., consequently health is dependent upon infection, trauma, etc. Consequently everything we do in health is the result of infection or trauma.

7. "If, as Jones asserts, morbid anxiety means unsatisfied love (and Jones uses 'love' in a purely sexual sense), since the difference between common, ordinary, everyday anxiety and so called anxiety is absolutely one of degree alone, then one must conclude that every possible state of anxiety, expectation, however slight in degree or brief in duration, springs from sexuality." The errors and absurdities in this paragraph are too numerous for detailed analysis. In his excellent essay, *Morbid Anxiety*, Ernest Jones was careful to distinguish between anxiety and morbid anxiety. By morbid anxiety he means what the Germans call *Angst*, the chief characteristic of which is a disproportion between the intensity of the emotion and its cause. It is in this sense that he uses the word anxiety, and when he says that "anxiety means unsatisfied love," he means that morbid apprehensiveness is the result of repressed sexual desires. The term "anxiety" as used in everyday speech implies no distress of mind, refers to some future event and always suggests a hopeful possibility. Anxiety is no more the meaning of *Angst* than "cure" is the meaning of the German *Kur*, therefore I always employ the word "apprehension." To replace *Angst* by "expectation," as Doctor Solomon does, is too utterly ridiculous. The statement that the difference between ordinary anxiety and morbid anxiety (morbid apprehension) is "absolutely one of degree alone" is simply not true. A parody of Doctor Solomon's argument will be the best answer to it: The difference between growth and morbid growth is one of degree only; but morbid growth means disease; consequently normal growth or bodily development springs from disease.

8. "Jones says that the method by which suggestion acts in therapeutics is as follows: 'The repressed sexual affects are withdrawn from their previous expression in various symptoms, and be[illegible] to a more suitable object, namely, the person of the physician.' This, to me, means but one thing. All dependence is sexual. I am prompted here to ask: Is all authority sexual? Do we value or worship nothing for other than its sexual significance? Does man sexualize the universe?" The paragraph quoted from Jones is Ferenczi's theoretical attempt to explain the therapeutic effects of suggestion. Whether it is true or not remains to be seen. How Doctor Solomon deduces from it that "all dependence is sexual" I do not know; his logic is so peculiar that I dare not attempt to speculate on the subject. His first question, "Is all authority sexual?" admits of a very simple answer; it is not. The authority of the police, of the church, of school teachers, etc., is conferred upon them or assumed by them. As to the second question, we do value and worship things for other than their sexual significance, and no Freudian ever said otherwise. That man does at times sexualize the universe, so prolific a reader of English poetry as Doctor Solomon is (he quotes Coleridge and Lowell) ought to know. May I remind him of the expressions, Mother Earth and Father Time?

9. "I think you will agree with me that hypnotic states, hypnoidal states, day dreaming, the mental condition of a patient who is giving free associations, etc., are all gradation steps differing in degree of consciousness. If, then, sexuality is the mainspring of hypnosis, it is the fountain head from which all these other mental states also spring." It would be insulting to any trained physician's intelligence to attempt to answer such an "argument."

10. "Freudians tell us that neuroses are the negative of sexual perversions; all neuroses are the outgrowth of sexuality. It must (!) be generally acknowledged that the real difference between neurotics and the rest of us is one of degree. Consequently (!), if neuroses are the negative of sexual perversions, then all other psychic states are the negative of sexual perversions." Anything more illogical and more absurd I have never read. The bound from "neuroses" to "all other psychic states" is admissible—coming from a neurologist. It will be news to most physicians that the difference between neurotics (including "all psychic states") and the rest of us (neurologists?) is one of degree. What the Freudians maintain is that the symptoms of the psychoneuroses are *partially* formed at the cost of abnormal sexuality and that the fantasies of perverts, the delusional fears of paranoiacs, and the unconscious fantasies of hysterics agree in content even to the minutest detail. But this is quite a different matter from saying that all neuroses are the outgrowth of sexuality. Without a psychic conflict there would be no psychoneuroses—a statement from which Doctor Solomon might conclude that morality or religion is the cause of "all psychic states," even sleep.

11. "If, as Freud and his school have agreed, hysteria is based primarily on sexuality alone, then every possible dissociated state, e. g., a state of distraction, dementia præcox, etc., is dependent on sexuality." If Doctor Solomon means that sexuality supplies the motive power for the psychoneuroses and that a psychosexual conflict lies at the basis, he understands us correctly. But what has dementia præcox, etc., especially the "etc." to do

with hysteria? A parody of Doctor Solomon's argument will show how illogically he reasons; if pulmonary tuberculosis is due to the tubercle bacillus, then every possible pulmonary condition, e. g., whooping cough, foreign body in the lung, etc., is dependent on the tubercle bacillus. Q. E. D.

12. "If the root of alcoholism is to be traced to sexuality (homosexuality), then all drug and drinking habits must be dependent on sexuality; then all nourishment, all gastrointestinal activities and yearnings, all habits, and all of our instincts are sexual." Fatuity and unreason can no further go. By this time the reader must be painfully aware that the logic centre (if there is one) is the blind spot in Doctor Solomon's brain, and I shall therefore refrain from quoting any more of his arguments and shall content myself with answering his questions.

13. "Is thumbsucking always a sexual manifestation?" All *obsessive, unconsciously begun or unconsciously continued* thumbsucking is a sexual manifestation.

14. Is true bronchial asthma a sexual symptom?" When bronchial asthma is not due to an organic lesion, i. e., when it is a "functional disease," it is the symptom of a psychoneurosis and is the expression of repressed psychosexual complexes.

15. "Is bedwetting, when not due to epilepsy, always of sexual significance?" When it is not due to an organic lesion or foreign body or to epilepsy or an act of the will, it is the equivalent of, or substitute, for a pollution.

16. "Is all bodily yearning, all bodily gratification, all feeling of satisfaction of sexual makeup?" No, and no Freudian has ever said they were. But Doctor Solomon is again making a try at being logical.

17. "Freudians must believe that all psychic attraction and repulsion, all mental processes, flow from the will of sexuality." If Doctor Solomon means all spontaneous attraction or repulsion between human beings, he is almost right; but he must omit the words "all mental processes" if he does not want to be guilty of as bad a *non sequitur* as we have ever encountered.

18. "Is all mental normality and aberration (abnormality) centred about sexuality?" No.

19. "Is all sublimation sexual? Don't we ever sublimate from any of our other instincts?" To answer these questions I shall say a few words about "sublimation." Sublimation, as employed by Freudians, is a technical term meaning the conversion of libido into lofty, artistic, cultural, religious, humanitarian, and otherwise praiseworthy activities instead of being expended in unworthy, harmful, and socially useless sexual activities. The artistic, scientific, religious, and cultural impulses are augmented, not created, by the energy emanating from the unconscious libidinous complexes. The person with a "natural bent" for music, mathematics, etc., applies some of his libido to the satisfaction of that "bent"; very often this is done at the expense of the individual's sensuousness and sexuality. It is obviously not denied that the realization of the facts of life plays its role as well as the individual bent or genius.

20. "Freud and his school limit the term, neurasthenia, to a condition which is the result of certain physical sexual causes, and they call this "true neurasthenia." Why is neurasthenia of sexual origin any truer a neurasthenia than neurasthenia from any other causes?" Freud found that neurologists had ignorantly and carelessly given the name "neurasthenia" to a large number of different ailments which differed from one another as to etiology, pathogenesis, and symptomatology, and he therefore proposed that these different conditions should be recognized as different entities. Just as Graves had rescued a group of "neurasthenia cases," and called them exophthalmic goitre, so Freud selected a group of cases to which he gave the name "true neurasthenia," because in these cases there is a real exhaustion of nervous energy in the wake of excessive masturbation or too frequent pollutions. Doctor Solomon's "neurasthenias from other causes" are not neurasthenias but, more probably, cases of apprehension neurosis, apprehension hysteria, obsessions, etc.

21. Doctor Solomon is perplexed in the extreme as to the meaning Freudians attach to the word libido, and as to its relationship to the "vital impulse" or "life force" (Shaw), or *élan vital* (Bergson), or *Wille zur Macht* (Schopenhauer). He says "libido smacks of sexuality—and libido means sexual impulse," and that, according to the Freudians, "the very flow of life and the energy which pervades the universe is sexual." *Libido*, literally translated, means "desire," but inasmuch as this is felt to be too vague, Professor Putnam has proposed to translate it by "craving." I like to think of it as "yearning" or "sensuous desire." It is the impulse which makes us reach out and strive for what is pleasurable, good, true, beautiful, ideal. Sexual love, the furor which makes Romeo seek his Juliet; that passion which comes nearest to making man sublime, and woman, too—is only one phase of this yearning. Its source? The energy, emanating from the sun and through it, from God. There ought to be no difficulty in understanding this. In a single building light, heat, power, chemical action, and magnetism may be derived from an electric dynamo situated at a considerable distance; all these different manifestations of energy are really only conversions of the primary electric energy which in turn is derived from the potential energy stored in the coal. Life is only the sum total of certain manifestations of the universal energy, one of whose phases is libido.

As to Doctor Solomon's other questions, let him and doubters like him devote themselves to the study of the Freudian writings and to the clinical investigation of their findings—and many stupid and meaningless questions will remain unasked.

243 Seventh Street.

CUTANEOUS EPITHELIOMATA CURED BY SUNLIGHT.

By Hiram H. Seelye, A. M., M. D.,
Daytona, Fla.

While the public interest in the medical and lay reports of the successful treatment of cancer by radium is so absorbing, the time seems opportune to recall the attention of the profession to an older,

inexpensive, and not less efficient method of treatment of small superficial epitheliomatous growths, that may be employed by those who are not equipped with x ray apparatus or the prohibitively costly element, radium. I refer to the use of concentrated sunlight, focused on the growth by means of an ordinary magnifying glass, such as may be purchased under the name of a "reading glass" for half a dollar or less.

For a number of years I have found this treatment invariably successful, chiefly in those obstinate ulcerative patches on the face or nose that repeatedly shed their scabs only to leave a raw and bleeding base, which never heals under ointments, powders, or other local treatment, and which recurs with ever increasing extent of growth, year after year, producing great disfigurement of features and worry to the mind. These growths are usually of moderate size, and always malignant.

The technic I use is, to focus the clear sunlight directly on the sore for ten or fifteen minutes at a sitting. If a scab is present, I concentrate the rays on it till the patient complains of the burning, then quickly lengthen the focus so as to cover with the rays an area an eighth of an inch or more beyond the scab. Every few minutes I induce the burning again for a second, not to the degree of cauterization, and then apply more mildly. After about ten minutes' treatment, the scab will look darker, and during the next few days will become more prominent and loosened. Treatment should be given every day or two till the scab may be easily removed, leaving a raw bleeding ulcer. Then is the time for a powerful application of the rays. First apply a few granules of cocaine in powder directly to the raw sore, and, after three or four minutes, a treatment so strong as almost to cauterize the base of the ulcer may be borne, to be alternated with continued milder applications for about fifteen minutes. This will either kill the irritating germs responsible for the growth, or destroy the low-grade cells whose vitality can not resist the intense heat or the immensely rapid ethereal vibrations set up by the chemical light rays. Milder treatments thereafter, at intervals of three to seven days, through the scabs or immediately after their shedding, will usually complete the cure within three to six weeks. The scabs gradually become thinner and more superficial, and the sore bleeds less after their removal. At last a healthy, permanently normal skin is left with scarcely a faint scar to show its former location. Rarely are more than eight to fifteen treatments required to get these satisfactory results. Any ordinary dusting powder such as talcum, boric acid, or bismuth may be sprinkled over the scab at any time for cosmetic purposes or to dry a moist surface.

A brief record of a few undoubtedly malignant ulcers so treated by me in the course of the last ten years will give the evidence for my confidence in this simple method of treatment.

Case I. Mr. P., about eighty years of age, had a sore on right cheek three eights of an inch in diameter, which had been treated by several physicians unsuccessfully for a number of years. Scabs fell or were picked off at intervals, always leaving an angry ulcer. After three weeks' use of the direct sun's rays, focused as described, a healthy skin formed over the ulcer, and a month after treatment began, no sign of the sore and no scar remained. After the lapse of several years there has been no recurrence.

Case II. Mrs. H., aged eighty years, had an epithelioma on the forehead over the left eyebrow, three quarters of an inch in diameter. Had been treated for seven or eight years by "specialists" and others with cancer plasters and various other local measures. The sore always failed to heal and was gradually increasing in size. She was averse to trying anything else as she had given up all hope of ever getting rid of it. After two weeks' treatment, as described, the ulcer was smaller and shallow and healthy looking, and in two more weeks was completely cured. It never returned and left no scar. My reputation was augmented and my patient delighted with the unexpected success of my treatment.

Case III. Mr. W. R., aged fifty-five years, a farmer, had a never healing ulcerous growth, nearly an inch in diameter, with ragged borders, between the upper end of the nose and the inner canthus of the right eye, involving the lower lid. Had for eight or ten years been to numerous doctors, who had used ointments, caustics, cancer plasters, and every known kind of local treatment. The sore never showed the least sign of healing and was constantly enlarging in area. Living far out in the country, he was able to come to me only at irregular intervals, often delaying one or two weeks between treatments. The lesion was so sensitive that cocaine frequently had to be used to make the application endurable. Improvement was soon marked, and at the end of two months healing was complete, scar hardly noticeable, and results permanent.

Case IV. Mrs. B., aged seventy years, sore about three eighths of an inch in diameter on right side of nose for three years. Had been treated by several irregular and regular doctors, with powders, ointments, high frequency electric effluve, etc., with no improvement. After seven sun ray applications, in three weeks healing was established, and two more sittings resulted in entire and permanent disappearance of the disfigurement.

Case V. Mrs. C., about seventy years of age, had, for a number of years, a scabby growth on left cheek, three quarters of an inch in diameter, and a smaller one close by. They were constantly spreading and never showed any tendency to heal. As she was unable to come to me for treatment by reason of distance, and too poor to pay, I visited her irregularly for five or six weeks when in the neighborhood. After six or eight applications of the sun's rays through a small glass, the sore had disappeared and a healthy skin had taken its place. Never saw patient again, so cannot report as to permanency of results.

Case VI. Mr. R., aged about fifty years, had an ulcerative, angry red patch, involving both sides of the nose and covering nearly its whole extent. It had been growing for twelve or more years and was covered by numerous small scales, always desquamating and leaving an inflamed, ulcerating, and bleeding surface. Had been diagnosed as lupus, rodent ulcer, and epithelioma. Was extremely disfiguring and resistant to all methods of treatment for years by cancer specialists and doctors in hospitals and institutions, at much expense. He began coming to me with great lack of confidence and hopeless of cure. I relied chiefly on the sun rays, but once or twice, during long periods of cloudy weather, I substituted the x ray from a weak tube. Improvement was steady, and in six weeks, after about twenty treatments, the whole nose was covered with a pale, healthy looking skin, free from exudation and scales, and scarcely noticeable from a cosmetic point of view. The cure was brilliant and permanent.

Case VII. The only failure of this method I have experienced was in the case of a pauper, too old and feeble to come long enough for treatment. He had the whole of one cheek eaten away by a deep, angry, irregular, ulcerous growth, the size of a hand, that was bleeding, sloughing, and eating its way down so as to expose the teeth of the upper jaw and much of the superior maxillary and molar bones. It was extremely painful, and cocaine and morphine were freely used. After half a dozen treatments by sunlight there was a gradual filling up of the deep ulcer, a lessening of the secretion, and a pronounced tendency to heal. But his failing strength necessitated a cessation of his visits, and he retired permanently to bed, awaiting death, which came in a few weeks. This growth had been spreading for many years, and I feel sure that if

it could have been treated by the sunlight a few months earlier it might have been cured.

All the foregoing cases had been previously treated unavailingly by the older approved methods, and I have merely reported them in order to show what may be done with such obstinate and malignant growths where the more recently recommended x rays and radium are not available. Though the theorist may say that the shortest and most active chemical or actinic rays of the sun are very sparingly or not at all transmitted through ordinary glass, yet the photographic plate becomes sensitive when the rays are thus filtered and focused, and experience shows that a healthy, reparative reaction is likewise set up in morbid bodily tissues when thus exposed. Such exceedingly short and rapid vibrations of the ether are probably allied in nature and healing power to the better known violet rays, x rays, and emanations from radium, and, when properly controlled and used in selected cases, seem to serve to a degree the same therapeutic purposes as the less available measures.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXLII.—How do you treat chronic constipation (Closed.)

CXLIII.—How do you treat gallstone colic? (Answers due not later than February 16, 1914.)

CXLIV.—How do you treat diphtheria? (Answers due not later than March 16, 1914.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The Prize of $25 for the best essay submitted in answer to Question CXLI was awarded to Dr. U. L. Houston, of Washington, D. C., whose article appears below:

PRIZE QUESTION NO. CXLI.

THE TREATMENT OF FROSTBITE.

By Ulysses L. Houston, M. D.,
Washington, D. C.

Frostbite is a pathological condition due to the local effects of cold and characterized by numbness or tingling with loss of power. Finally sensation is lost and the affected parts are white and cold to the touch. In considering the treatment of this condition, it is of great importance to determine whether only the superficial layers are involved or whether the condition has extended into the deeper layers.

If the superficial layers only are involved the patient should be placed immediately in a room, the temperature of which is only a little warmer than the outside air. The recumbent position, with affected part elevated, is to be preferred. The first thing is to attempt to restore to its normal function the heat producing power of the part, and this procedure must be carried out with the utmost care, since too rapid restoration is productive of bad results. The restoration is accomplished by gently rubbing the part with snow or submerging it in ice water and massaging gently.

Too much stress canot be laid on the gradual raising of temperature, as otherwise an inflammation may be set up and moist gangrene follow, which is indeed an unfavorable sequel. Then, too, it must be remembered that in case of a frostbitten ear injudicious treatment often results in great harm, as the frozen auricle may actually be broken by too vigorous massage and the individual likely be disfigured for life.

When the temperature of the part has returned to about normal, the air of the room may be gradually warmed and the force of the friction increased, but if the reaction is greater than deemed advisable evaporating lotions should be used.

The congestion having disappeared, the part may be wrapped in cotton wool. Ichthyol ointment on the wool surrounding the part will relieve the distress often associated with the condition. This should be followed with some form of stimulant, as hot tea or coffee, and a little brandy will be found to be of service.

In some cases, where the individual has been exposed to severe cold for a considerable length of time, he may be in a state of coma, and it is here that friction all over the body with a flannel is indicated, and *when the patient is sufficiently revived to swallow,* he should be given some hot milk with brandy. In all these latter cases the bladder should receive attention, if necessary being emptied with a catheter.

As a rule, any member of the body having been frostbitten is likely to suffer permanently from impairment of nutrition on account of the trophic nerves and bloodvessels being interfered with, and should be shielded in every possible way from such exposure as would lead to a subsequent attack.

After a time there may be superficial sloughing, which should be treated with antiseptic dressings till completely healed.

When the patient has recovered from the immediate effects he should be given good systemic tonics to raise his vitality, and this should be maintained by nourishing food.

So much for superficial frostbite. We come now to that form which involves the deeper layers. When these layers become the seat of inflammation resulting from frostbite, we must begin to look for gangrene, and this obviously suggests an operation. It is here we display our knowledge by waiting for a decisive line of demarcation. I say we should wait for this line, for the reason that adjacent parts often remain in a depressed vital condition for a long time, and if they should be cut through, the chances are there will be unsatisfactory healing; indeed, sloughing often occurs after an apparently successful operation.

After operating, dress the part with antiseptics till completely healed.

The admonition concerning protection against possibility of subsequent attacks and the same constitutional treatment as before referred to, should be given.

Dr. Harry Falk Friedmann, of New York, writes:

The treatment of the first stage resolves itself into bringing the part back to its normal temperature; this is done by the application of snow or cold water, gently rubbing the parts. Gradually the temperature of the water is increased until the normal temperature of the part is restored. A soothing ointment such as zinc oxide ointment may be applied and the part wrapped with cotton wool to prevent the radiation of heat. If the itching and burning be severe carbolic acid, two per cent., added to the ointment, acts splendidly. It should not be used over a long period of time, as carbolic gangrene or necrosis may ensue.

In the treatment of second degree frostbite the same preliminary measures of gradually bringing the part back to its normal temperature should be instituted. The subsequent vesicles and blebs are to be opened with a sterile needle and soothing ointments applied. Ointments of zinc oxide and boric acid, to which may be added ichthyol up to five or ten per cent., acts well. The parts are enclosed in cotton wool. Sometimes wet dressings make the patient feel more comfortable, and for this purpose a one to 5,000 solution of bichloride of mercury or potassium permanganate at the temperature of the body should be used.

In third degree cases where there is extensive involvement with necrosis and gangrene the line of demarcation should be allowed to form and then amputation above this should be instituted. If small areas become necrotic, they should be allowed to separate; in the meantime wet antiseptic dressings, as the bichloride of mercury or permanganate solutions, should be applied. Absolute rest in bed is essential in the second and third degree cases, and the septicemia, if it should develop, is combated by free elimination. The bowels should be kept open by means of a saline purge; magnesium sulphate being the one preferred, one ounce given in warm water at night. A diuretic composed of the following mixture should be given three times a day and the patient receive plenty of water at regular intervals:

℞ [illegible] āā grs. xx.

M. et adde aquæ q. s.

For the high temperature, alcohol sponges or the warm bath, cold water added gradually will often suffice. For the toxemia, nothing is better than normal saline given slowly under the skin, one pint every eight or twelve hours. Stimulants of strychnine sulphate, grain one thirtieth, or camphorated oil, minims five to twenty hypodermically, every four hours, are useful to combat a weakening heart.

Dr. C. E. Lowrey, of Centerville, Iowa, remarks:

I desire to state in the beginning that too much emphasis cannot be placed upon the word cleanliness in the successful handling of these cases, as far as results are concerned. Frostbite may be regarded as an acute affection due to the prolonged action of cold. Let us therefore consider the treatment, regarding the different degrees of tissue involvement. In the slighter forms, or when a small portion of the body is affected, the disturbed circulation must be restored gradually. The patient should lie down in a cold room, but should be kept well covered to protect from further effects of cold. He should be given hot tea or coffee; the affected parts should be rubbed with snow or cloths wrung out of cold water. Too rapid restoration of the altered blood corpuscles is dangerous to the general circulation. If there are blisters, care should be taken to treat them with the most minute attention to the details of aseptic and antiseptic procedures. Cleanse the part thoroughly with cold water, using at the same time green soap, rinse with ninety per cent alcohol, next with sterile water (cold). Place a sterile dressing on the part. In all cases of frostbite, especially in the more severe ones, conditions are very favorable for infection and inflammation. If grave constitutional symptoms with coma or threatened coma are present when the patient is first seen, he should be kept in the recumbent position wrapped in blankets in a cold room. Warm stimulating drinks should be administered. The affected parts should be rubbed gently and continuously with ice water. Artificial respiration should be employed, if needed, and the efforts at resuscitation and restoration should be continued for a long time if necessary. If the affected parts become gangrenous, amputation is necessary. It should be delayed, however, until reaction has occurred, but should not be postponed until secondary debility has made the result of an operation doubtful.

In the treatment of frostbite, it has been my practice to keep the parts affected in as nearly aseptic a condition as possible from the very beginning, thus assuring, to a great extent, a minimum loss of tissue and a much earlier recovery.

Dr. A. L. Rhoads, of Scranton, Pa., observes:

The treatment consists, first, in bringing the patient into a cold room; if brought suddenly into a warm room, moist gangrene is likely to develop, owing to sudden thawing of the surface, while the bloodvessels remain blocked. There is also severe pain when brought into a warm room too suddenly. Rub the affected part with snow or cold water until the circulation is reestablished, meanwhile administering restoratives and stimulants if indicated. Warm drinks are valuable. Then paint the affected part with tincture of iodine, a five per cent. solution of silver nitrate, or:

℞ [illegible] āā gr. x-xv;
Glycerini . . . . . ℥ss.

Sig.: Rub in affected part and follow with a dusting powder of salicylate of bismuth.

or other stimulating applications such as oil of turpentine, ichthyol ointment, carbolized ointment, etc., after which wrap the part in cotton wool.

If the condition becomes of a pustular or bullous character, soothing applications are required, such as carbolic acid lotion, two drams to the pint; oxide of zinc ointment, diachylon ointment, salicylic acid

paste, often adding to the latter carbolic acid, ten grains to the ounce.

In the exceedingly rebellious ulcers, the ointment of balsam of Peru is often of value, or equal parts of resin cerate and spirits of turpentine, or wet dressings of one per cent. solution of silver nitrate.

In case of gangrene, if it occurs only in small areas, the dead part should be allowed to come away spontaneously, applying in the meantime hot antiseptic fomentations. If larger areas are involved, always await a line of demarcation before operation, as it is never possible to tell how far up the devitalization extends, and to amputate through parts in that condition would be worse than useless.

In many cases the patient is a weak, anemic individual, and in this class of cases particularly the administration of some form of iron is of very great service, although it is indicated in all cases.

In the condition known as chilblains, efforts must be made to harden the skin, and disturbance of circulation should be treated with massage, washing with alcohol, hot baths, or painting with alcohol or collodion.

Therapeutic Notes.

Treatment of Obesity Accompanied by Dyspepsia.—Plicque, in *Bulletin médical* for July 30, 1913, emphasizes the fact that while dyspepsia is, in general, a cause of loss of body weight, it also frequently results in a particularly marked form of obesity. Many of these obese dyspeptics err rather in eating rapidly and consuming coarse, heavy, and irritating articles of food than in eating to excess; in fact, a few even ingest considerably less than the average amount of food taken by healthy individuals. A case recently reported by Pron was that of a man aged forty-three years, leading a physically active life in the country and rising early, who had been obese and dyspeptic for ten years. The diet prescribed was that customarily ordered for mild cases of digestive weakness, viz., a light breakfast; at other meals, dry or green vegetables mashed with milk, macaroni, rice, eggs, lean fish, brain, ham containing but little salt, fresh cheese, cooked fruits, and compotes; meat twice a week, at the midday meal; bread sparingly, and a small cupful of some simple infusion after meals. Nothing was allowed between meals except a glassful of water in the afternoon if desired, but the patient was given permission completely to satisfy his hunger at mealtime. The hour of rising in the morning was changed from 5 to 8 o'clock, an hour of complete rest after the midday meal ordered, frequent short periods of rest during the working hours prescribed, and the patient required to retire after supper. No cathartic or laxative was given, yet in a month the patient's weight fell from 90 to 83 kilograms, his dyspepsia improved, and his endurance increased. Similar results were obtained in a girl fifteen years old, weighing 83.5 kilograms, suffering from poor digestion owing to excessive mental work. Upon being placed on a diet of light and easily digested food, unlimited, however, as to quantity, this patient lost sixteen kilograms in a year—four of these in the first few weeks of treatment. Such a mode of treatment, directed to overcoming dyspepsia in particular, does not yield as marked a reduction in weight as other more severe and systematic "cures," but entails much less risk of compromising the patient's general health.

Treatment of Gonococcal Infection in the Female.—Swithin Chandler, in the *Monthly Cyclopedia and Medical Bulletin* for September, 1913, states that when infected glands are found in this condition on the external skin surface, presenting the appearance of infected pimples, they should be cut into, thoroughly washed out with a one in 2,000 mercury bichloride solution, painted with strong tincture of iodine, and then smeared over with a 5 per cent. iodine ointment. It is well to paint the surrounding parts, including both labia majora, with the tincture. This treatment will eradicate the local trouble in a few days, and renewed painting of the parts as described will prevent reinfection.

Where, upon separating the labia, evidences of acute gonorrhea are seen, it is best to keep the parts bathed with boric acid solution:

℞ Acidi borici, ... gr. c (6.5 grams);
Aquæ sterilisatæ, ... ʒv (150 grams).
Fiat solutio.

When the acute condition has exhausted itself, potassium permanganate or silver nitrate solutions are the agents required:

℞ Potassi permanganatis, ...gr. v (0.3 gram);
Aquæ sterilisatæ, ... ʒv (150 grams).
Fiat solutio.

℞ Argenti nitratis, ...gr. i (0.06 gram);
Aquæ sterilisatæ, ...ʒiv (120 grams).
Fiat solutio.

Care should still be taken to keep the parts clean with boric acid solution, as they are subject to reinfection.

For infected Bartholin's glands the only good method of treatment is to incise freely, wash out with bichloride or other antiseptic solution, and paint the cavity, after cleansing, with iodine tincture. Where Skene's glands are involved, relief is possible only by their removal. As for Morgagni's lacunæ and Littré's glands, dilatation, massage, and the energetic use of sounds, with the boric acid and silver nitrate solutions already mentioned, constitute the only rational treatment.

In vaginitis and endocervicitis, first potassium permanganate and later silver nitrate solutions are indicated. Douching is usless except for cleansing purposes. When the cervical glands are diseased they often have to be destroyed. Pure lactic acid, carefully injected with a hypodermic syringe, gives excellent results. If the glands are infected too deeply, however, amputation or removal of the cervix is the only recourse.

Gonorrhea of the uterus, unless complicated by abscess deep in the muscle, surrounding parts, or annexa, does not demand any local treatment; the curette should not be used. In cases with tubal distention or abscess, rest in bed, sedatives, and proper treatment of the other parts are very advisable in the acute phase. Later, in case of destruction or chronic abscess, removal is indicated. Similar considerations apply to the infected ovary.

Vaccines have yielded, in Chandler's experience, but little result, except in a few cases where gonorrheal inflammation was renewed by irritation and abortion.

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EDITORS

CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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NEW YORK, SATURDAY, FEBRUARY 7, 1914

AN EXPRESSION OF GRATITUDE.

Two years ago, all the scientific departments of the New York Medical Journal were considerably amplified. A close study of the needs of the profession having shown that the practising physicians could be afforded still greater aid by increasing the matter concerned with the diagnosis, pathogenesis, and treatment of disease, the number of original communications bearing upon these phases of practice, as well as the therapeutic notes were materially augmented. A complete transformation of the department of pith of progressive literature necessitating a considerable increase of the editorial work, the staff was more than doubled through the addition of practitioners of high standing in their special fields. That all these improvements imposed considerable additional expense upon the management is selfevident.

It is the purpose of this editorial note to express to our readers our deep appreciation of the encouragement they have afforded us. We had evidently struck the keynote of their professional needs; they have shown their approval of our efforts in ways which inspire the profoundest desire, as an expression of our gratitude, to continue the good work. To aid tens of thousands of physicians in their daily humane work is in itself an inspiration for labor untold which the future will reveal.

A GERMAN TRIBUTE TO MARION SIMS.

Some of the best appreciations of Marion Sims have come from Germany, notably the discriminating eulogy of Professor Robert Olshausen, delivered at the Kaiser Wilhelm's Akademie (Berlin) in 1896. On the eve of the one hundredth anniversary of Sims's birthday, January 24, 1913, Dr. August Martin delivered a short address in Berlin, a free translation of which may appeal to admirers of the founder of operative gynecology. Doctor Martin spoke somewhat as follows:

One hundred years ago tomorrow Marion Sims was born. His name is familiar to you all because every day you use his speculum; but Sims is not immortal merely through the invention of this simple and ingeniously thought out instrument; he was a man of singularly great personality and it is no more than his right that we should devote this day to his memory. There are probably few alive today who can pride themselves on the good fortune of having known him personally. He left upon all who came in contact with him, to an extraordinary degree, the impression of a deep, lovable, fascinating nature.

He was born in a southern State of America and in his sentiments was always an ardent Southerner. Soon after he acquired his medical education in Philadelphia, he settled in Alabama. Noting the extraordinary frequency of vesicovaginal fistula in the negro women of the South, he hit upon the idea of attempting to remedy the condition. The old experience of the utter hopelessness of all efforts in this direction, which we know from Dieffenbach's pessimistic account of it, was his also. Only after he had used silver wire sutures did he succeed, his results making a great impression in America and afterward on this side of the Atlantic. In 1882, he settled in New York. As the awkward condition of affairs between the Northern and the Southern States destroyed all the relations to which he had adjusted himself, he came to Europe. Here his skill and success in operating made a great impression in England, and later in France. From time to time Sims would again return to America, leading a restless, nomadic life, and wherever he settled he drew patients to him in swarms, as if with magnetic power. Among physicians, too, he won golden opinions. He was a selfmade man, a great man, but he never disdained, in any important situation, to learn from and to work by the side of his fellow men. He was an ardent pioneer in the vaginal operations which he first made possible everywhere by his speculum; then he became an equally enthusiastic laparotomist, and like his countrymen, Atlee, Peaslee, Emmet, Bozeman, like the Englishman, Thomas Keith, the Frenchmen, Koeberlé, Péan, and like us

Germans, he operated for myoma. He came to Germany in time and was eager to learn from Germans. His book, *Clinical Notes on Uterine Surgery*, which appeared in 1857, is indeed the cornerstone of the literature of operative gynecology. At that time, vaginal operations were mostly performed; but Sims went far beyond this and has left his mark in every direction. Among other things, it is worth while to remember that he was the first to achieve success with artificial fecundation. There are probably few persons alive today who knew him intimately; to know him was my great good fortune! I recall with heartfelt pleasure and gratitude the day he spent with me here in Berlin, following up my work, sitting beside me at the fireside in the evening, and discussing my operations, indeed all scientific questions, in the most cordial, generous, and appreciative spirit. Marion Sims indeed deserves that this society should hold his birthday in faithful and grateful remembrance.

IODINE IN THE THYROID GLAND.

Is iodine a normal constituent of the thyroid? Baumann, we believe, held that it is generally, though not always, present. Many negative finds have been reported by Roos, Mendel, Charrin and Bourcet, Reid Hunt and Seidell, and the question arises whether iodine is a necessary constituent of the thyroid, or the product of some special chemical change. In a work before us by A. T. Cameron, *Journal of Biological Chemistry*, January, 1914, we have this problem treated from a rigidly chemical point of view. A curious feature is that the thyroids of children are so often free from iodine. Reid Hunt and Seidell criticize the method of Baumann, which fails to show minute quantities. To secure the high level of accuracy required, a method which promises more perfect results has been found necessary. Fenger, using such a method, detected iodine in the fetuses of animals, and the conclusion is drawn that iodine does really exist in the thyroids of children. The reason seems to us far from a good one, and we see difficulties in reconciling the divergent results in animals. For instance, it is commonly remarked that the thyroids of herbivorous animals contain more iodine than those of the carnivorous. We will not say that the distinction is unsound, but on its face it is in a great measure a verbal one. An instance in our opinion, is supplied by the following passage: "The results for the pigeon are distinctly high, those for the alligator and frog distinctly low, in agreement with their respective herbivorous and carnivorous diets." Such a passage leaves the reader in a sort of dilemma, but what the author probably intends to imply is, that a diet of vegetables in the ordinary sense has a tendency to increase the quantity of iodine in the thyroid. He takes the arguments of both sides, showing their points of agreement and of difference, and concluding that iodine is bound up with the function of thyroid tissue. There is some difficulty in selecting from chemical researches facts that will be of use to clinical students, but the physician may read with interest that the quantity of iodine in the thyroid gland is increased by vegetable food. The inference naturally is, that it may likewise be increased by giving iodine, which possibly explains its evil effects in some cases of thyroidism.

THE INCOME TAX AGAIN.

Relative to the special article, The Physician and the Income Tax, published in the NEW YORK MEDICAL JOURNAL for January 24th, we have been asked whether under the head of general deductions it is proper for a physician to charge as "business expenses" the salary of his stenographer or secretary and the outlay for an automobile to be used in connection with his practice, and also what the physician is entitled to deduct under the head of allowance for exhaustion, wear and tear of property, arising out of its use or employment in business, where his office is in his residence.

While the law is specific in expressing the sources of income which are taxed, as "gains, profits, and income derived from salaries, wages, or compensation for personal service of whatever kind and in whatever form paid or from professions, vocations, business, trade, commerce or sales, or dealings in property, whether real or personal," etc.; in the following paragraph, enumerating the exemptions and deductions, it merely specifies "the necessary expenses actually paid in carrying on any business." We are of the opinion, however, that the word, business, is used here in a broad and general sense, including a profession as well as strictly a business, therefore it is entirely proper to deduct from the gross income of a physician's practice the entire expenses of the upkeep and maintenance of his office and practice, including the salaries of stenographers, assistants or nurses, office rent, and the cost of maintaining an automobile to be used in connection with the practice. In addition to this, he is entitled to charge under subdivision sixth, a reasonable allowance for "exhaustion, wear and tear of property" represented by depreciation in the value of the automobile, instruments, and furniture.

The fact that a physician has his office in his residence complicates the situation only to the extent that he must determine a fair and reasonable rental value for that portion of the building used by him as his office solely, and apparently he is en-

titled to deduct for this rental value, although he owns the building himself. It may be argued against this position, that he has already deducted from his income the taxes paid upon this same building, and therefore should not be permitted to deduct a rental value of the office. We should, however, under all circumstances, claim this as a deduction in the report and leave it for a decision of the Treasury Department to reverse the claim if the deduction were decided to be improper.

RHEUMATISM A BACTERIAL DISEASE.

From time immemorial the term rheumatism has been used by the laity to describe any pain in the limbs or joints, especially when definite information was not sought of a physician as to the actual process being undergone by the patient. Lately, as a result of careful observation on human beings and controlled experiments on lower animals, it has been proved that many of these cases are instances of infection by definite organisms. In the October, 1913, number of the *Journal of Medical Research*, Schloss and Foster report the experimental production of arthritis. They were able, by inoculation of cultures of streptococcus pyogenes into the blood stream of four monkeys, to induce a polyarthritis, suggestive in certain respects of rheumatic fever in man. In two instances a chronic arthritis with limitation of motion and contracture resulted from repeated inoculations of streptococci. The bacteria found in this type of infection belong to the streptococcic group, but it has not as yet been proved that the organism found is a special variety, the general opinion being that it is an ordinary streptococcus. That these organisms do cause the disease has been proved by a number of investigators, who have recovered the streptococci from the blood and joints of patients, and have reproduced the lesions in lower animals. These findings explain in a satisfactory manner the heart lesions that are so frequently present and the symptoms of acute infection that occur in acute rheumatism. Once more accurate information separates a definite disease from an indefinite group.

NOVEL METHOD OF INDUCING FERMENTATION.

The *Journal of Inebriety* for January-February, 1914, states editorially in an article on the adulteration of wines, that as the latter come from the press they are called "sweet wines," but *by adding alcohol, fermentation is set up* (italics our own improvement) and they secure what is called body. That this statement is no mere slip is proved by the context, which tells where the alcohol is obtained. The journal in question has high aims and attempts to combine, more or less successfully, moral instruction with scientific therapeutics; but it should not permit these aims to cause it to overshoot the elementary facts of chemistry and make such strange statements as that quoted.

RECKLESS PROFESSIONAL STATEMENTS TO THE PUBLIC.

In a recent issue of a popular magazine, a physician, probably a very young one, makes the statement that "rheumatism is, was, has been, and possibly always will be a convenient dumping ground for medical ignorance." Possibly the writer means medical ignorance on the part of the laity, although the average reader will not so interpret the statement. If he really believes his accusation of the profession, the writer is to be condoled with for the extremely slovenly teaching he has received from his faculty: no physician of any standing offers a diagnosis of rheumatic fever unless the signs are pathognomonic, while it is simply incredible that "rheumatism" is ever at this date advanced professionally as a reason for chronic pain due to infections or autotoxemia. The entire article under discussion reads as if the pathology had been acquired exclusively from patent medicine "literature," and is one of a class of articles which, under the plea of taking the public into the doctor's confidence, serve only to intensify ignorance and prejudice.

WHEN DOES GESTATION BEGIN?

Dr. James Oliver, in the *Edinburgh Medical Journal* for January, 1914, in a communication entitled Fertilization Time and the Inception of Gestation in Women, takes the ground that fertilization is always that of an oncoming ovum and never of one that is past. Among several arguments advanced, the most convincing is based on the fact that many women conceive while menstruation is held in abeyance by lactation, and the ovum fertilized under such circumstances can only be that of an oncoming menstruation. Since we reckon the duration of gestation from the date of the cessation of the last menstrual period, if it is not always the oncoming ovum that is fertilized, but sometimes one of the past menstruation, then the gestation period in the former case must be shorter than in the latter; and this, avers Doctor Oliver, is an unscientific, an impossible hypothesis. Fertilization, he believes, takes place at any time during the intermenstrual period, except during the thirty-six or forty-eight hours preceding menstruation, because menstruation having begun to assert itself, cannot be inhibited by another physiological influence.

It follows that since the gravid uterus, at or about the fourteenth day after the first menstrual period is missed, is approximately of the same size in every case, gestation must begin at a definite and fixed time in the human female. This time probably corresponds with the time when menstruation would, under ordinary circumstances, have been begun. Consequently, when abortion takes place

fourteen days after the inhibition of the first menstrual period, the aborted product of conception is only about sixteen days old. This conclusion is obviously important, both as regards the duration of pregnancy and the development and growth of the embryo.

News Items.

Philadelphia Hospital for the Insane.—The overcrowded condition of this institution was somewhat relieved by the transfer, January 27th, of 150 male patients to two new buildings just completed at Byberry. There are now 1,864 patients at Blockley, or 684 above the proper capacity.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Tuesday, February 10th, Pediatric Society; Wednesday, February 11th, Philadelphia County Medical Society; Thursday, February 12th, Polyclinic Ophthalmic Society, Pathological Society; Friday, February 13th, Northern Medical Association.

Smallpox at Niagara Falls, N. Y.—Acting Assistant Surgeon Bingham, of the United States Public Health Service, reports that during the week ending January 17, 1914, sixty-three cases of smallpox were reported in Niagara Falls, N. Y., and in the week ending January 24, 1914, fifty-seven cases. On January 28th there were 127 cases of smallpox under treatment, but so far no death has been reported from the disease.

Physicians' Motor Club.—At the annual meeting of the Physicians' Motor Club, of Philadelphia, held on the evening of January 20th, the following officers were elected: President, Dr. S. Leon Gans; first vice-president Dr. William Duffield Robinson; second vice-president, Dr. John J. Robrecht; third vice-president, Dr. Charles A. E. Codman; secretary, Dr. Howard A. Sutton; treasurer, Dr. Lewis H. Adler, Jr.; directors (for four years), Dr. H. Augustus Wilson and Dr. Sylvester J. Deehan.

Gifts and Bequests to Hospitals.—By the will of Miss Harriet Otis Cruft the Massachusetts General Hospital will receive $30,000 for the establishment of free beds, the Children's Hospital will receive $25,000 for general use, and the Convalescent Branch of the Children's Hospital will receive $20,000.

The Royal Victoria Hospital, Montreal, will receive $500,000 under the terms of the will of Lord Strathcona, and hospitals in the British Isles will receive $90,000.

American Association of Medical Jurisprudence.—This association, which has for its avowed object the investigation, study, and advancement of the science of medical jurisprudence, has been incorporated under the laws of the State of New York. Its membership, limited to 200 active members, is composed of lawyers and physicians from all parts of the United States. Dr. Reynold Webb Wilcox is president of the new association, which will hold its first annual meeting in New York on the first Saturday in May.

Appointments at the Nova Scotia Hospital, Halifax.—The following appointments to the staff of the Nova Scotia Hospital have been made by the Provincial Government of Nova Scotia: Dr. W. H. Hattie has resigned from the position of medical superintendent of the institution to accept the position of Provincial Health Officer for Nova Scotia, and will be succeeded by Dr. F. E. Lawlor, who has been connected with the hospital for over twelve years. Dr. R. L. Murray has been appointed assistant medical superintendent, and Dr. E. F. Moore, assistant physician.

Alumni Association of the Lying-in Hospital.—A stated meeting of the Alumni Association of the Lying-in Hospital of the City of New York will be held at the Harvard Club on Wednesday evening, February 11th. The paper of the evening will be read by Dr. Barton Cooke Hirst, of Philadelphia, on Extraperitoneal Cæsarean Section. The subject will be discussed by Dr. J. W. Markoe and Dr. Asa B. Davis. The officers of this association are: Dr. C. E. McDannald, president; Dr. R. M. Rawls, vice-president; Dr. D. J. Hamburg, editor; Dr. C. Frederic Jellinghaus, secretary-treasurer.

Medicolegal Society of Philadelphia.—At the annual meeting of this society, held Tuesday evening, January 27th, the following officers were elected: President, Dr. W. T. Hamilton; first vice-president, Dr. E. W. Kelsey; second vice-president, Dr. Benjamin H. Swartz; secretary, Dr. C. W. Schaubel; treasurer, Dr. G. M. D. Peltz; censors, Dr. Lambert Ott, Dr. F. J. Kelly, and Dr. W. B. Schull.

Associated Physicians of Long Island.—The annual meeting of this association was held in Brooklyn, Saturday, January 31st, under the presidency of Dr. Samuel Hendrickson. Officers to serve for the ensuing year were elected as follows: Dr. James P. Warbasse, of Brooklyn, president; Dr. Guy D. Turrell, of Smithtown; Dr. Dudley D. Roberts, of Brooklyn, and Dr. J. Carl Schmuck, of Lawrence, vice-presidents; Dr. James Cole Hancock, of Brooklyn, secretary; Dr. Edwin S. Moore, of Bay Shore, treasurer. A largely attended banquet was held in the evening at the Hamilton Club, a number of invited guests joining the members.

Rural Hygiene.—The need for a division of rural hygiene in the State Department of Health, with adequate appropriations, for the purpose of applying modern sanitary methods to rural public health work, was strongly urged by Dr. Hermann M. Biggs, State Commissioner of Health, at Governor Glynn's recent conference on agriculture and allied matters. He presented figures to show that while the death rate in the cities of the State had decreased, the rural death rate had increased. The rate up State increased last year from 15.5 to 15.8 in one thousand of population, while the rate in New York city fell from 14.1 to 13.7 in one thousand. Doctor Biggs pointed out that in the country each dwelling house was a unit, just as the city was a unit. Each dweller in the country must provide for himself water supply and sewage disposal, which the city provides for its residents. Through their health departments residents of the city are afforded health protection in both these particulars, among others, by the application of the results of scientific investigation. Such protection is not now given to rural dwellers, but the farmer has as much right as the city resident to the best health protection that modern science affords. By extending to the country, through a division of rural hygiene, the health advantages so long enjoyed by the cities, Doctor Biggs believes that the death rate and the sickness rate in the country can be very much decreased and the efficiency of the community proportionately improved.

Personal.—Dr. George E. Brewer, of New York, has been elected professor of surgery in the College of Physicians and Surgeons, medical department of Columbia University, to fill the vacancy caused by the resignation of Dr. Joseph D. Blake last June.

Dr. Walter B. James, of New York, professor of clinical medicine in the College of Physicians and Surgeons, medical department of Columbia University, has been relieved at his own request from membership in the medical faculty. He will retain his professorship and continue to direct the work of research students from time to time.

Announcement is made of a gift of $2,700 to the College of Physicians and Surgeons by Dr. John A. Fordyce, to be used for the instalment of special equipment at the Vanderbilt Clinic.

The vacancy created by the resignation of Dr. George Strawbridge as ophthalmic surgeon to the Philadelphia Presbyterian Hospital has been filled by the election of Dr. McCluney Radcliffe.

Dr. Creighton Wellman, of New Orleans, has resigned as dean of the school of hygiene and tropical medicine of Tulane University.

Dr. William Duane has been appointed assistant professor of physics at Harvard University. He will devote the greater part of his time to the physiological action of radioactive substances and to the problems in physics directly connected therewith, but will also direct advanced students in problems on the purely physical side of radioactivity in the Jefferson Physical Laboratory.

Dr. J. S. Haldane, reader in physiology at Oxford University, has been chosen as Silliman lecturer at Yale for next year.

Dr. Henry Fairfield Osborn, professor of zoology at Columbia University, has been elected president of the Second International Eugenics Congress, which will be held in New York in September, 1915.

Fourteenth French Congress of Medicine.—This congress will meet in Brussels on September 30th next, and remain in session until October 3d. The officers are as follows: President, Professor Henrijean; vice-presidents, Professor Bordet and Professor Vandervelde; secretary, Professor René Vorhoogen; treasurer, Doctor Godart-Danhieux. Among the subjects to be discussed are: 1. Syphilis and the Cardiovascular System; 2, Lipoids in Pathology; 3, Therapeutic Value of Artificial Pneumothorax; 4, Vaccine Autotherapy in General, and Especially in Cancer and Typhoid Fever.

There will be numerous excursions, festivities, and theatrical performances for the benefit of visitors. Intending members should send their names to the secretary, and their subscriptions of 20 francs to the treasurer, 9, rue Montoyer, Brussels. Wives and children of visitors and medical students may be enrolled as associate members on the payment of 10 francs.

Treatment of Tuberculosis by the United States Public Health Service.—Dr. Martin F. Sloan has been engaged as expert for three months to introduce the treatment of pulmonary tuberculosis by induced pneumothorax at the United States Public Health Service sanatorium, Fort Stanton, New Mexico. Doctor Sloan is a graduate of Johns Hopkins Medical School, 1908, since which time he has been on the staff of that institution as assistant in medicine. He is also on the staff of the Phipps Tuberculosis Dispensary, from which clinic he selects most of the patients for Eudowood Sanatorium (Hospital for the Consumptives of Maryland, Towson, Md.) of which institution he has been superintendent for the last four years Eudowood will be remembered as the first institution in this country to establish a farm colony for convalescents and introduce graduated exercise as a therapeutic measure. Induced pneumothorax was introduced at Eudowood by Doctor Sloan, in 1911, with an apparatus of his own, which is a modification of Saughman's. The Public Health Service Sanatorium at Fort Stanton offers an admirable field for the employment of induced pneumothorax because of the large number of far advanced cases and the opportunity which the Government affords to retain under treatment beneficiaries who are disabled by their disease for a long period of time. Of the 200 patients under treatment, all adult males, thirty have been selected as suitable cases for treatment by this method. Doctor Sloan's engagement with the Public Health Service terminates March 1st, when he will rejoin his sanatorium at Towson, Md.

Piorkowski Laboratories Not Licensed.—Information has recently been received from various sources to the effect that, through agents and printed circulars, the statement is being circulated that the Bacteriol. physiolog. Institut (Piorkowski Laboratories), Berlin, Germany, has been licensed by the Treasury Department for the importation and sale in interstate traffic of "turtle tuberculin." These statements seem to emanate from so called Piorkowski Laboratories, located, or represented as about to be located, in various cities in this country. This statement is contrary to fact. After an inspection of the establishment by a representative of the Treasury Department and an examination of samples of the products at the Hygienic Laboratory of the Public Health Service, the Bacteriol. physiolog. Institut (Piorkowski Laboratories), Berlin, Germany, was refused a license by the Treasury Department for the importation and sale of their products in interstate traffic.

Under the act approved July 1, 1902, regulating the sale of viruses, serums, toxins, and analogous products in interstate traffic, such preparations applicable to the prevention and cure of diseases of man may be imported without license, provided they are not sold or intended for sale but for scientific experiment. The above mentioned act requires that each package of virus, serum, toxin, antitoxin, or analogous product must be plainly marked with the proper name of the article contained therein, and the name, address, and license number of the manufacturer. Since this provision is strictly enforced, no difficulty should be experienced by anyone in determining whether a particular product has been propagated in a licensed establishment Persons or firms engaged in the sale of unlicensed products in interstate traffic are liable to a penalty consisting of a fine not exceeding $500, imprisonment not exceeding one year, or both such fine and imprisonment in the discretion of the court.

Pith of Progressive Literature.

WIENER KLINISCHE WOCHENSCHRIFT.

December 4, 1913.

Fever as the Only Symptom of Latent Syphilis.—Hugo Krauss reports several cases of chronic fever of obscure origin in patients who gave positive Wassermanns, but presented none of the ordinary symptoms of syphilis. Careful examination revealed a gumma in one, and a typical history of the disease was finally elicited from all.

December 11, 1913.

Opening of Lacrymal Sac through the Nose.—Otto Mayer reports several cases in which he has successfully performed West's operation, and says that, although the operation is not easy, it presents no insuperable obstacles to the experienced rhinologist. It may be performed under local anesthesia on ambulatory patients, and no treatment is needed after the removal of the tampon on the second day. It does not seem to be associated with danger, and the result is immediate.

Atropine Treatment of Dysmenorrhea.—Josef Novak obtained a history of dysmenorrhea in almost all of his cases of puerperal bradycardia and arrhythmia, a fact which suggested to him that the two conditions might be due to the same cause, and might be amenable to the action of atropine. Most of his patients never returned, but of thirty-eight who were followed up thirty were materially benefited; the result was uncertain in one, and was not good in seven.

Postoperative Morphine Poisoning.—Hermann Hinterstoisser, who has used regularly, prior to general anesthesia, an injection containing morphine, reports the case of a woman aged forty years, who was given the usual dose of scopolamine and narcophin an hour before operation for appendicitis, and anesthetized with ether and chloroform. She slept quietly till the middle of the afternoon, and was given a hypodermic of morphine five hours later. Two hours later symptoms of severe intoxication appeared, calling for an immediate injection of atropine, digalen, and camphor oil. Venesection also was performed. She lay in a stupor for three days with incontinence of urine and feces, and gradually returned to consciousness on the fourth day. He is inclined to ascribe this nearly fatal result not to morphine alone, but to the combined use of the several narcotics. He strongly recommends in morphine poisoning venesection with subsequent intravenous infusion of Ringer's fluid, or of isotonic salt solution.

Cancer Treated with Radium.—Sparmann gives a further account of cases already reported under treatment with radium in von Eiselsberg's clinic. The table shows that eleven died during treatment. In six the tumor had disappeared, five had improved, one showed scarcely any improvement, and seven had grown worse.

Cholera Epidemic in Servia during the Summer of 1913.—Rudolf Strisower tells of his experiences with 650 cases of cholera, of which 273, forty-two per cent. were fatal. This was the aver-

age mortality of the epidemic. Of 393 patients treated with potassium permanganate only four continued to have vibrios in their stools after the lapse of considerable time, while of twenty not treated, two, or ten per cent., of twenty treated with iodine, three, or fifteen per cent., and of three treated with opium, two, or seventy-five per cent., were found later to be carriers of vibrios.

December 18, 1913.

Treatment of Trachoma with Ultraviolet Light.—Fritz Roessler says that while the ultraviolet rays are not a panacea for trachoma, he obtained either a cure or a material improvement in seventeen of twenty-one cases, and failed in only four. The cases best fitted for this treatment are those of mild, uncomplicated trachoma, a statement that is true of all forms of treatment.

Röntgen Therapy of Tuberculosis of the Lymphatic Glands.—J. Philipowicz reports twenty-five cases; all greatly improved. The sittings were for ten minutes, every week or two. Of four who had had over twenty sittings three were cured, one greatly improved; of eight that had had between ten and twenty sittings, two were cured, and in six the tumors had much diminished in size and had become hard and fibrous. Three fistulas had closed completely, leaving delicate scars. The effect of the treatment may be summed up by saying that part of the swollen glands disappear entirely, part become considerably smaller, fistulas close rapidly, scrophuloderma is cured, and in many the bodily weight increases. This treatment should not be given to children under the age of ten years, because of the danger of interfering with the processes of growth.

Chemical Basis of the Treatment of Carcinoma.—Ernst Freund says that there may be two aims in the treatment of carcinoma, 1, to find a specific remedy to destroy the supposed agent, 2, to find a remedy for the general cause or predisposition to carcinoma. While hitherto remedies used had no essential relations to the pathological process, recent researches have discovered substances that have a biological relation to the pathological process in the blood and tissues. He has isolated a substance of the carcinoma serum which is a so called nucleoglobulin with the chemical anomaly that it contains much more carbohydrate and fatty acid than the normal nucleoglobulin. With this he has immunized a horse, and believes that he has made a first step toward a rational, biological treatment of cancer.

December 25, 1913.

Diagnosis of Appendicitis in Patients over Fifty Years of Age.—J. Philipowicz reports twenty-nine cases of appendicitis in patients between the ages of fifty-one and seventy-two, seventy-three per cent. of which were under sixty years. In only fifteen were the symptoms typical. In three the possibility of appendicitis was taken into account, but the diagnosis could not be made with certainty. In the remainder, other diseases were counterfeited, so that the real condition was not suspected until found at operation for other purposes.

PRESSE MÉDICALE.

January 3, 1914.

Abbott's Method in the Treatment of Scoliosis.—L. Ombrédanne lays emphasis on the spirometer as a valuable means of controlling the results of treatment by Abbott's method and as a useful instrument for training the subject in adequate respiratory efficiency. He discusses at length the theory of Abbott's procedure. Concluding from his experience with the method in a considerable number of cases, in twenty-eight of which the treatment has now been nearly or quite completed, he states that the procedure should be employed only in cases where, upon flexion of the trunk anteriorly, a hump in the back appears. The method is contraindicated in spinal inflexions or static scoliosis and in patients less than six or seven years of age. In cases of scoliosis in which the spinal malposition is completely corrected upon suspension, the method is without superiority over carefully conducted exercises. In patients in whom respiratory exercises are impracticable or dangerous by reason of lack of intelligence of the patient or parents, or on account of adenoid growths, large tonsils, septal deviations, or pulmonary tuberculosis, the procedure is also considered inadvisable by the author, unless the interfering factors can first be removed. In other types of cases, on the other hand, correction of the rotation of the trunk and of the lateral curvature will often be obtained regularly in some forms of scoliosis. Observations of twenty-six cases suggest that the results of treatment are permanent, though special exercises are required to insure a fixed position of the spinal column. No method previously known yielded the desired results so constantly and precisely, or could be regulated so satisfactorily.

Tansini's Operation in Mammary Cancer.—I. Tansini lays stress on the advantages of a dorsal flap in covering the denuded area after radical removal of breast cancers. Experience has convinced him that in many instances the sole reason for recurrence is insufficient removal of skin, the surgeon being too much preoccupied, as a rule, in leaving enough skin to render possible immediate union of the wound margins. By using a flap consisting of skin from the back as well as large sections of the latissimus dorsi and teres major, free excision of skin is permitted, viability and high resisting power of the covering of the wound is insured, and the formation of a linear scar in the axilla, with consequent limitation of movement and compression of veins, is avoided. The author advocates the use of his method of closure in all cases of breast cancer in which a radical operation is not contraindicated.

January 7, 1914.

Renewal of Blood Caused in Syphilitics by Dioxydiamidoarsenobenzol.—M. P. Weil and L. Guénot found that in many instances the administration of arsenobenzol causes the venous blood to acquire an unusual bright red color. This change was observed, in two of their cases, within five days after the injection of the drug, but its most striking feature was that it persisted several months, or even a whole year, after a single administration. Although a study of samples of this blood by Nic-

loux showed that it did not possess an oxygen carrying power noticeably in excess of that of normal venous blood, an increase in the number of erythrocytes above five million and even up to 7,932,000 was found constantly to accompany the unusual bright red appearance. A corresponding rise in the hemoglobin percentage and an increased resistance of the red cells to hemolysis were also regularly observed. The last mentioned change was noted within three or four hours after the injection, and like the change in color, persisted for a number of months. These effects must be ascribed to a direct action of the drug on the bone marrow. Arsenobenzol is particularly indicated in syphilitics who are depressed, anemic, and apt subjects for tuberculosis. The effects on the blood observed by the authors seem to account for the beneficial action already witnessed from the use of arsenobenzol in pernicious anemia.

REVUE DE MÉDECINE

December, 1913.

Cancerous Meningitis.—G. Humbert and W. Alexieff point out that, in the majority of cases of metastasis to the head in visceral carcinoma, the skull and dura are simultaneously involved. In the minority, the metastatic lesions are limited to the inner surface of the dura, the arachnoid, and the pia, with or without involvement of the brain tissue itself. Metastases in the meninges may either consist of small isolated tumors or, less frequently, exhibit a diffuse involvement, to which the name cancerous meningitis has been applied. The authors report twenty-three cases of the latter type that have already been published, and give a detailed history of a personal case, in which, two years after an operation for mammary cancer, there appeared swelling of the cervical glands on the same side, headache, vomiting, dizziness, unilateral deafness and tinnitus, slight hemiplegia and transitory diplopia, followed by signs of meningeal involvement, with delirium. Cancer cells were easily found in the fluid obtained by lumbar puncture. At autopsy a dense neoplastic infiltration of the pia and arachnoid was found; this was especially marked around the vessels, which, at short intervals, were surrounded by a thick coating of cancer cells, sometimes arranged in several distinct, concentric layers. In the lymphatic spaces small collections of these cells were also observed.

Drug Treatment of Edema.—A. Kakowsky reports observations in thirteen patients suffering from chronic nephritis, to whom theobromine sodium salicylate, in daily doses not exceeding 2.7 grams, was given for a period of five to ten days. Diet was kept constant, and the condition of the kidneys ascertained by examining the sediment of the morning urine by an accurately quantitative method. The results lead the author to conclude that in advanced chronic nephritis, the drug is wholly without value. It fails to diminish edema, albuminuria, and cells and casts in the urine; the amount of sodium chloride eliminated does not increase, and the general condition is not improved. The drug causes diuresis only in nephritis associated with abnormal excitability of the renal vessels; in advanced chronic nephritis these vessels are insensitive and fail to dilate under the influence of the drug. In a number of the author's cases its use was followed by signs of renal irritation, viz., increased elimination of albumin and sedimentary matter, as well as by aggravation of the general condition. This irritation he holds to be due to the salicylic constituent, which is easily set free by the gastric juice, and is eliminated partly as salicylic acid. Caution is therefore necessary, at least in the use of large doses in chronic nephritis. Where it is desired to give the remedy, small doses of uncombined theobromine, which are often very efficient, should be used. In cases of cardiac insufficiency with renal disturbance, and in nephritis of recent advent, in which the renal vessels are still in good condition, the drug is capable of exercising a more or less beneficent action.

Pathogenesis of Osteomalacia.—S. Bonnamour and A. Badolle, reviewing the results obtained by previous investigators, and their own observations, conclude that osteomalacia must be regarded as a symptom complex of which the most patent and firmly established manifestation is decalcification of the bones. Quantitative estimation of the calcium in the urine, feces, and especially in the blood, always shows an increase in this element. The amount present in the blood corresponds throughout with the patient's condition. Study of the blood calcium is of both diagnostic and prognostic utility.

BRITISH MEDICAL JOURNAL

January 17, 1914.

Infection of Children with Bovine Tubercle Bacillus.—A. Philip Mitchell investigated seventy-two consecutive cases of tuberculous cervical adenitis in children to determine the relative frequency of bovine and human organisms as causative agents. The organisms were classified by means of cultural characteristics and results of animal inoculation. Bovine bacillus was found to have been the cause of adenitis in no less than ninety per cent. of all cases, only seven, or ten per cent., of the entire seventy-two having been infected with the human bacillus. Thorough investigation was also made of the clinical aspects. More than half of the cases were children under three years of age. The average duration of illness before operation was seven and a half months; during this period there was seldom any interference with the health of the child. The records do not indicate that there is any type of child specially liable to cervical adenitis. Nearly all the children were in robust general health. It is not rare for a single member of an otherwise healthy family to have this disease. There was not a single history of a case of tuberculosis in the families of the patients with bovine infection; while the father or mother had pulmonary tuberculosis in the case of three of the seven patients infected with the human type of bacillus. A striking fact was brought out by comparison of the number of cases of tuberculous adenitis found among city and country children. The disease was quite as frequent among the latter as among the former. This is probably because crowding and unsanitary surroundings have little to do with the spread of bovine tuberculosis. The one chief source of infection in this class of cases

is milk from infected cows, which accounts for the frequency of the disease in rural districts. That milk is the source is confirmed by a study of the milk supply of many cases in this series, in which milk, it was shown, came from infected animals. In all cases the infected children had been fed on raw milk for some time prior to the appearance of disease. Study of the infected glands showed that the bacilli entered through the lymphatics, draining the faucial and pharyngeal regions of the mouth. In a large proportion of cases, the tonsils were found infected. Many tonsils showed no enlargement nor other obvious gross signs of infection. Infection may enter through adenoids, a less frequent channel, however, than the tonsil.

Torn Semilunar Cartilages.—William Robinson thinks that the accepted mechanism of this accident is incorrect and offers as a result of anatomical and clinical studies, the following explanation. The accident always occurs when the joint is partly flexed. This relaxes the capsule, and inward rotation of the femur or rotation of the leg outward draws the anterior half of the inner meniscus obliquely across the articular surface of the tibia. Sudden extension occurring at this time catches the cartilage between the femur and the tibia, and tension on the internal lateral ligament associated with extension pulls on the capsule and the attached end of the meniscus, and leads to tearing of the latter. Without this traction on the cartilage by the tension of the internal lateral ligament in extension there would be no tear; a bruise only would result. The condition, like fracture of the patella, is usually the result of violent muscular action in the attempt to prevent a fall, but in this case the action begins when the knee is in a position of partial flexion.

Ionic Medication in Venereal Diseases.—R. Connel finds that in most cases mercurial ionization produces very rapid and satisfactory healing of chancres; more rapid, in fact, than after any method previously used. A two per cent. solution of bichloride is used, and a current of two to four milliamperes is passed for about five minutes, from the positive pole. Healing occurs in from one to two weeks. The treatment has the disadvantage of not curing the general infection. Chancroids do not respond well to any form of ionization, probably because there is no ion which is specifically destructive of the infecting agent. The iodide ion has been found of great value in the treatment of large gummata, and zinc gives excellent results in many buboes, whether syphilitic or not. In buboes the current may be passed for a longer time and the milliamperage raised as high as twenty or thirty; about one or two milliamperes being used for each square centimetre of involved tissue. Chronic gonorrheal rheumatism is much benefited by use of the chlorine ion.

LANCET.

January 17, 1914.

Value of the Cardiac Sign in Cancer.—William Gordon, who was the first to describe change in cardiac dulness, which he terms the "cardiac sign," now presents a study of its diagnostic value in a considerable number of cases. Cases were unselected and were taken as met with in the course of practice. The diagnosis was confirmed by operation or post mortem examination, or by evidence which the author regards as sufficiently weighty to warrant his conclusions. In the entire series of fifty consecutive cases, there were but six per cent. of errors. It is to be borne in mind that all other evidence for or against the diagnosis of cancer was also employed in the process of reaching a conclusion. In five of the entire series the sign was not elicited for one reason or another; six cases had external, visible signs of cancer; and in seventeen cases in which the sign was observed, cancer was found in all except one. Gordon believes that the sign is of very great confirmative value, particularly in cases of internal cancer.

Early Diagnosis and Treatment of Ruptured Intestine.—V. Zachary Cope discusses several signs and symptoms reported in connection with ruptured intestine, and calls attention to their slight value if the condition is to be diagnosed in time to permit effective treatment. Thus, symptoms of shock are very frequently absent from the earlier stages, and may even be delayed for several days, or be wholly wanting until there is marked general peritonitis. Symptoms of peritonitis are commonly regarded as the most important diagnostic features, but these are often delayed or masked and early symptoms may be highly equivocal. Rigidity of abdominal muscles is a valuable sign, but it often does not persist for more than a few hours. It may also be present in the absence of actual rupture, at least for a short time. Neither the pulse rate nor the temperature is a trustworthy guide, for neither may be materially altered for many hours after the injury. Continuous and increasing pain is the most valuable sign of all; when associated with vomiting sufficient evidence is at hand to warrant opening the abdomen. It must be remembered that pain may have to be searched for, and that one place where it is of greatest diagnostic value, is the pelvis. Pain is due to early pelvic peritonitis arising from gravitation of the extruded intestinal contents. Treatment consists in operation as soon after injury as it is possible to reach a reasonably certain diagnosis; closure of the tears; gentle removal of exuded material; and drainage of the region, or pelvic drainage.

"Concubitancy" in Cousin Marriages.—Macleod Yearsley takes the Fijian system of relationship as the basis of classification in his study of cousin marriages. Concubitancy is regarded as existing between first cousins of opposite sexes who are children of brother and sister respectively. If they are the children of two brothers or of two sisters, they are spoken of as tabu; a term which also applies to brother and sister. Yearsley takes the statistics of Basil H. Thomson from Fiji, and those which he has himself collected of sixty-eight marriages of first cousins among white races, and reduces the statistics of fecundity and vitality for both classes—tabu and concubitant—to averages. Of the Fijian series, 138 concubitant couples averaged 3.29 children, of whom 1.74 survived. Fifty-five tabu couples averaged 3.05 children, of whom 1.30 survived. Among white races, thirty-three

concubitant couples averaged five children, of whom 4.42 survived, and thirty-five tabu couples averaged 3.62 children, of whom 3.08 survived. It is seen that concubitant couples have a greater fecundity, and their children a greater average vitality. The frequency of deaf born children in the two classes was studied, but no definite difference could be made out. The author believes that consanguineous marriages do not give rise to a greater tendency to congenital abnormalities than ordinary unions, unless the stock is definitely tainted; in which case the union of two members, both carrying a recessive character in their germ cells, would yield recessive offspring according to Mendelian laws.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

January, 1914.

Medical Treatment of Cholelithiasis.—H. B. Anderson believes the following statements to be warranted by our present knowledge: 1. While surgical procedure is frequently the best, and often the only means offering a chance of relief, its advocacy, based on certainty of cure and assurance of nonrecurrence, is not borne out by results. 2. The main object of treatment is the relief of the infection and inflammatory changes, and not merely the removal of the gallstones. So long as there is no recurrence of the inflammatory attacks, there will be no attacks of gallstones. 3. Recovery not infrequently occurs under nonoperative treatment, especially in early and mild cases, and particularly after first attacks, before serious local damage has been produced by the infection. 4. Medical treatment should be given a fair trial in all cases where the patient's physical condition does not warrant operation, and with the numerous patients who refuse operation. In many such cases he has seen complete and permanent recovery from all symptoms of the disease. 5. Medical treatment is indicated in many cases as a preliminary to operation, and in order to allow the acute infection to subside as far as possible. 6. Medical treatment is indicated in all cases *after operation* to allow of complete subsidence of the infection and, if possible, to prevent reinfection and recurrence.

The Periosteum.—W. E. Gallie and D. E. Robertson report a number of experiments made in confirmation of Macewen's view that the periosteum is not osteogenetic, as it has been believed to be since Duhamel reported the results of his experiments in 1739. Their results seem to show that the periosteum is merely a fibrous membrane with no power to produce bone, and that osteogenesis is a property of the endosteum alone, which is as energetic in the absence, as in the presence, of the periosteum. Even as a source of blood supply the periosteum does not seem to be of great importance, for large areas of bone may be denuded without any apparent effect upon it. They have found no difficulty in getting small bone grafts to take after they had been completely denuded of periosteum.

BOSTON MEDICAL AND SURGICAL JOURNAL.

January 22, 1914.

Mortality of Hereditary Syphilis.—Abner Post calls to the attention that, although syphilis is declared by writers on the subject to be fatal, mortality returns in this country show exceedingly few deaths from this disease. "It would probably cost a doctor his popularity and ruin his practice if he dared to append that cause of death with the same simplicity that he would write typhoid, or pneumonia." Therefore death is attributed to some intercurrent disease or condition, such as marasmus. He presents a mortality record of thirty syphilitic families, in which there were 168 pregnancies, with fifty-three still births and forty-four early deaths, a total of ninety-seven, or fifty-seven per cent., while seventy-one remain alive. Of seventy-one, thirty-two have been patients, leaving only thirty-nine presumably healthy. After discussing briefly a few of the reported causes of death, he says that it is pretty certain that the returns for marasmus, pneumonia, and hydrocephalus are falsified by reporting as such some deaths which might more properly be returned as syphilitic. How far the returns for cholera infantum are vitiated, if at all, nobody can tell. Syphilis is not the only cause of death in syphilitic families, but it must be recognized that the vital resistance of these children is greatly reduced by their heredity, so that they readily fall victims to intercurrent disease. The heredosyphilitic child is unfinished, in a condition of infantilism both externally and internally. He finds that many of them have undergone operations for tonsils and adenoids, some of which were unnecessary. The narrow nasal passages and the swollen mucous membranes of the syphilitic child occasion the same symptoms as adenoids, and the first treatment should be for syphilis, and only when this is found to be unsatisfactory, should an operation for adenoids be performed. Probably at least half of the syphilis in the world is innocently acquired, and if we are in any way to control the disease, it is necessary to have a moderately accurate knowledge of it. For this reason he protests against the failure rightly to report syphilis, and against the falsification of returns.

Corynebacterium Hodgkini in Lymphatic Leucemia and Hodgkin's Disease.—Albert E. Steele reports the cultivation of a diphtheroid bacillus, similar in its morphological and cultural characteristics to the organism described by Negri, Mieremet, Bunting, Yates, Billings, and Rosenau, from the lymph nodes of a case of lymphatic leucemia and one of Hodgkin's disease. Its relationship to these diseases has not been definitely determined.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

January 24, 1914.

Treatment of Infantile Paralysis.—R. W. Lovett advises the following treatment: In acute stage, general measures of rest, catharsis, light feeding, and quiet. A rigid division of the disease into stages is not in accord with facts, but different aspects may be conveniently spoken of as phases. In the tender convalescent phase the best treatment is to let the patient alone so far as active interference is concerned. Frequent changes of position are desirable, and there is no objection to the sitting posture, to outdoor air, or to the warm bath. With the disappearance of tenderness the time for active treatment has come, and the sooner the patient is on his feet and resumes activity, the better. Ther-

apeutic measures: Massage, electricity, and muscle training. The last is the most useful, apparently because it rests on the best physiological basis. Fear that early use of apparatus will promote muscular atrophy is wholly unreasonable, and some form of artificial support is frequently required. At first crutches are necessary in cases of paralysis of both legs. If deformity exists, it must be removed before any treatment can be satisfactory. The most troublesome form is lateral spinal curvature, and when this affects the cervicodorsal region, it is practically uncontrollable. Lower down in the spine curvature may be greatly improved by proper jackets and exercises. Operative Treatment.—1. To correct deformity. 2. To improve muscular action. Tendon transplantation. The most important recent additions to our knowledge are, that insertion into bone or periosteum is preferable to insertion into tendons and that silk elongation of the tendon may be performed with impunity. 3. To secure stability of useless joints. Arthrodesis, or the production of artificial ankylosis. In cases of flail ankle, silk ligaments at the anterior aspect of the ankle or preferable to arthrodesis. In calcaneous deformity, the Whitman operation, or removal of the astragalus and setting the foot back in relation to the leg.

Treatment of Pneumonias.—R. N. Wilson contrasts lobar or fibrinous types of pneumonia with the bronchocatarrhal type, and states that in the former, there is need to remember that we are often dealing with a strong and still vigorous patient; while in the latter we invariably encounter an asthenic, deeply toxic state, which will result fatally unless the vital forces are jealously conserved. In both forms the patient needs fresh air, and it should not be forgotten that this can be furnished either cold or warm, though in possibly the majority of instances (bronchocatarrhal pneumonia being the more common) the application of cold fresh air will certainly do harm. In the bronchocatarrhal type the patient requires from the first a supporting diet, but not a grain more food than is actually needed for body requirements, or than can be thoroughly digested; and of late years it has been the author's practice to employ a dietary similar to that of typhoid fever. Occasionally, in the middle of a pneumonia of either type, the stomach will appear paretic and balloon with gas; and here lavage through the stomach tube will as a rule give immediate relief. Frequently tympanites forms a constant feature of a toxic case, and should receive appropriate treatment. As far as possible the skin should be left free to perform its functions of elimination and respiration; it should not be hampered with ointments, poultices, or unnecessary coverings of any kind. In febrile fibrinous pneumonia sponging at regular intervals for high temperature, with hot or cold water, will prove useful; the hot sponge is far more restful and stimulating to the heart. Stupes applied to the chest for brief periods, at regular intervals, furnish a valuable method of counterirritation, and the author's favorite method is to dry cup the chest over involved portions of the lung, and then apply over the entire chest hot stupes prepared by sprinkling turpentine directly on steaming moist flannel. When cerebral symptoms are present, an ice cap to the head may be of service. Overtreatment is to be carefully avoided, and there should be a regular interval (not less than three hours) before every new succession of treatment. Of a very few available drugs, the author prefers atropine, given hypodermically; the most useful, both as cardiac tonic and respiratory stimulant. Alcohol he condemns absolutely.

Treatment of Pellagra.—G. M. Niles, in the way of drugs, uses hypodermically ampoules of iron arsenic solution (sixteen minims) and sodium cacodylate (three quarter grain of the salt) on alternate days for about two weeks; afterward an ampoule every other day. After the acute symptoms seem to be controlled, he continues giving two injections weekly for several months. Sometimes, when the patient is anemic and nervous, he substitutes ampoules of green citrate of iron (one c. c.) and glycerophosphate compound (one c. c.). Internally, he employs a combination of saturated solution of potassium iodide and Fowler's solution.

Azoturia (Diabéte azoturique), by A. Bassler. —See this JOURNAL for November 15, 1913, p. 990.

MEDICAL RECORD.

January 24, 1914.

Tuberculosis of the Testicle.—A. L. Goodman states that testicular tuberculosis may appear as a primary isolated manifestation or secondary complication in the course of visceral tuberculosis. Primary tuberculosis is unilateral and very restricted, not extending above the inguinal ring. Hence it is essentially curable. Secondary testicular tuberculosis is usually more extensive, and no longer the manifestation of an infection through the blood. In certain cases infection is propagated through the lymphatic group or by the vaginoperitoneal canal. An ascending infection through the vas deferens is rather doubtful. Lesions are sometimes bilateral, and the seminal vesicles or the prostate are apt to be the seat of indurated nodules, or even suppurative foci. These changes may begin with acute symptoms, or may be chronic from the start. Primary forms are relatively benign, while remote results of the secondary group are extremely unfavorable. Invasion of the testicle is generally interpreted as a sign of profound intoxication of the organism and a fatal indication. Observations of Vignard and Thévenet, however, do not confirm this opinion; their primary tuberculosis cases ended in death, and the difference between primary and secondary forms seems not as considerable as commonly assumed. Discussing the relation between fetal tuberculosis and that of infant and adult, the author believes that, because of peculiarities of the fetal circulation, the fetus may be infected directly from the maternal blood.

Significance of Irregular Uterine Bleeding.—L. Broun discusses, among benign causes, mucous polyps, erosion of the cervix, acute gonorrheal endocervicitis, threatened miscarriage, extrauterine gestation, and fibroid tumors of the uterus. He impresses us with the importance of a thorough determination of the cause of all irregular uterine bleeding when we learn that between the ages of forty-five and sixty-four, one out of every eleven

deaths among women is due to cancer of the uterus and the breast, two thirds being from uterine cancer. Experience of all clinics in America shows that seldom more than one out of every four patients with cancer of the uterus can, on account of the advanced stage of the disease, be given any treatment other than something to ease their pain and their short period of life. Referring to the American Society for the Control of Cancer, the author mentions that at a recent meeting, the Associated Gynecological Clinics of New York City adopted a synopsis for the education of the poor upon the subject of cancer of the uterus, and recommended to the Board of Associated Out-Patient Clinics of New York that it be printed on a card and given to every woman patient at all the clinics of the city. Systematic education he believes will be the means of saving many lives.

Typhoid Spine; Complicated by Thrombophlebitis of the Left Femoral Vein.—C. B. Conklin thinks that the term perispondylitis, proposed by Gibney perhaps expresses the pathological condition accurately in a majority of instances, but true typhoid spine occurs in exceptional cases. Pain is constantly noted, and is extremely severe; there is often pronounced rigidity of the muscles along the lower spine. Concomitant nervous manifestations noted at times are muscular twitchings, emotional excitability, dermatographia, and in two instances persistent Kernig's sign. In a few cases muscular atrophy has resulted from the neuropathy, and lordosis and cyphosis have followed. The author's case accompanied by a thrombophlebitis is unusual. Recovery is the rule, and medical treatment generally recommended is sedative, the bromides and valerates; and mechanically, immobilization.

Bacillus lactis bulgaricus in Infantile Gastroenteritis.—In L. H Schwartz, noting the conclusions of Clock that in the vomiting and diarrhea of babies, tablets of this agent had remarkable effects, tried the treatment in a series of cases last summer. Of fifty-five infants treated, sixteen were breast fed, seven partially breast fed, the rest bottle fed. Three to ten tablets a day were given, according to the gravity of the case. In twenty-seven saline irrigations were employed, and small doses of bismuth along with the tablets in thirteen, in which the stools were not changed by the tablets. There were no deaths. In view of the unsatisfactory conditions of the cases, the results were generally good. From so small a number it is not advisable to draw broad conclusions, but it seems to the author that administration of Bacillus lactis bulgaricus is a distinct advance in the therapeutics of infantile gastroenteritis.

LANCET-CLINIC.

January 3, 1914.

Technic and Results of Anoci Association.—H. G. Sloan says that the surgeon's aim is the return of his patient to his position in society in the best physical condition in the shortest possible time, after subjecting him to the least possible danger and discomfort. On the day of operation the patient, soon after waking, receives a hypodermic injection of morphine and scopolamine, and thereafter is disturbed as little as possible. On reaching the operating room he is at once anesthetized with nitrous oxide, in order to spare any unnecessary delay. In order to cut off from the brain the different nerve impulses from the field of operation, each successive plane of the operative field is blocked with novocaine before it is invaded by the scalpel. The tissues, especially those viscera whose nerve supply it is impracticable to block, are handled with the utmost gentleness. The abdomen, when opened, shows perfectly relaxed walls, because no sensory impulse has reached the cord to call forth the protective stiffening of the muscles; and since there is no increased intraabdominal pressure, the intestines, in sliding up and down with the respirations, will not protrude from the wound. The cut in the abdominal wall gapes open as it would in a cadaver; but in order to achieve such a result the blocking must be absolute. When visceral adhesions are encountered they are blocked wherever it is feasible; but they are always separated with a sharp knife. Before closing the abdomen it is the author's practice to encircle the peritoneal incision, at a distance of two or three cm., with a line of infiltration of one fourth per cent. quinine and urea hydrochloride, in order to block any sensation which may arise from the traction of the peritoneal stitches. Shock is entirely prevented, and the postoperative comfort of patients who have been subjected to this technic is probably the most convincing evidence of the value of the procedure. Hand in hand with the increasing comfort of his patients and their more rapid recovery, he has observed a fall in the mortality rate.

Eugenics and Some Phases of the Housing Problem.—C. A. L. Reed states that in the public wards of the hospitals with which he is connected, peopled for the most part from the slums, he finds the infections of syphilis and gonorrhea in ninety per cent. of all cases; while in his private clientele, drawn from wholesome habitations, these infections exist in less than one per cent. The practical application of this observation to the housing problem is twofold. The first is with respect to the habitations themselves, and the next is with respect to the inhabitants. The condition referred to as evidenced in the social diseases spread by the hovel, and by the low moral standard which is all too frequently the product of hovel life, points, he says, to the necessity of abolishing that type of habitation. While, however, improving the homes of these people would, to an important extent, improve their morals, and thus improve their health and relative efficiency, by changing these environmental conditions, the character units which make the hereditary pauper still the pauper would not be eliminated. The author, therefore, is distinctly opposed to the proposition to take the children of this class from their homes, or from public institutions to which they may have been committed, and place them in better to do families all over the country. Many of these children, growing up under these more favorable environments, would naturally marry among the people by whom they were surrounded. It is conceivable that in the next generation the ultimately good strain in such an alliance may become entirely dominant; but, on the other hand, a genetically good family may be brought to a lower level. In other words, the vicious factors or the factors of degeneration may become dominant, and

we have no more right to send into any family the human potentialities of vice and crime, without apprising that family of the fact, than we have to send a package of poison without placing a label upon it.

AMERICAN MEDICINE.

December, 1913.

Treatment of Placenta prævia.—E. McDonald, having stated that in no other condition in obstetrics is delay so dangerous to mother and child, urges that delivery should follow the first hemorrhage. The only exception to this rule is where the patient can be put to bed in a hospital and carefully watched. The ideal course in placenta prævia is dilatation of the cervix, with mild labor pains and little natural straining. For this reason, if pains are strong, particularly when an elastic bag has been inserted, it is usually well to give a hypodermic injection of morphine and atropine. As long as the membranes are unruptured the greatest safety of the mother lies in prohibiting strong pains or straining. If hemorrhage is severe, hypodermoclysis or venous transfusion should be done. When version and extraction, or other operations, must be done, anesthesia is required, and ether is the preferable agent. The indication in complete placenta prævia is immediate stoppage of hemorrhage, with little consideration for the life of the child. When the cervix is fully dilated, immediate delivery controls the hemorrhage and offers the child the best chance of life. The delivery may be done by Braxton-Hicks's version and immediate breech extraction, which should be made carefully and slowly, so as not to cause mutilation of the cervix or perineum. If the condition of the patient permits, it is usually well to dilate the vagina and stretch the perineum with the hand. Extraction should immediately follow version only when the os is fully dilated, or nearly so. When the os is undilated, control of hemorrhage may be obtained in one of three ways: 1. By Braxton-Hicks's version, bringing down one foot, so that the fetal body acts as a tampon, and delayed extraction; 2, by the use of the de Ribes elastic bag; 3, by tamponage of the cervix with gauze. The author is distinctly opposed to resorting to Cæsarean section, on the ground that it but adds another greater danger to that already existing.

Constitutional Infection Due to Septic Pyorrhœa alveolaris with Joint Involvement.—H. A. Goldberg presents reports of eight cases of this character, which have been treated with the most gratifying results. These cases, he says, prove that before a diagnosis is suggested in cases where there is a question, a thorough examination of the oral cavity is advisable. Skilled dentists can tell us much about the general condition of a patient from an examination of the gums, and a good differential diagnosis can be made by them of the incipient stages of diseases like nephritis, diabetes, gout, tuberculosis, etc. Each constitutional disturbance has certain peculiarities in the pyorrheal picture which enable the skilled stomatologist to differentiate it as to its etiology. Therefore, the routine examination of the gums should be included in one's inspection of the mouth, and the presence of pyorrhea should warn the physician to look for the cause. Should he be unable to discover this, the case should be referred to a dentist who is skilled in stomatology, for both treatment and differential diagnosis. In conclusion, the author calls the attention of physicians and dentists to the frequency of constitutional infection from septic pyorrhea which results in joint involvement; a condition which, no doubt, is often wrongly diagnosticated as rheumatism, and treated as such without results, while if the cause is recognized and the source of infection in the teeth treated, a speedy and successful result is obtained.

ARCHIVES OF INTERNAL MEDICINE.

December, 1913.

Determination of the Comparative Immunizing Value of Typhoid Bacillus Preparations.—F. P. Gay and E. J. Claypole deplore the lack of exact methods of prophylactic typhoid immunization, the relative activity of the different preparations of typhoid bacillus being uncertain. The method they present is based on the observation that the intravenous injection of a uniform amount of rabbit blood agar culture of a single strain of Bacillus typhosus produces in ninety-four per cent. of all instances a characteristic syndrome in normal rabbits, consisting either of acute toxic symptoms in the first few hours and without typical lesions (eighteen per cent.) or the transformation of the animals into chronic typhoid bacillus carriers (seventy-six per cent.), their blood yielding positive cultures for two or three weeks, within which time many of them die, exhibiting a characteristic distention and necrosis of the gallbladder. Animals fully immunized with dried and ground preparations of Bacillus typhosus, on the other hand, show no ill effects on injection of the standard amount of living culture and give uniformly negative blood cultures from twenty-four hours on. The method has proved a nearly perfect one for comparing the relative immunizing properties of various preparations of the bacillus.

Syphilis Antigens.—J. A. Kolmer, E. E. Laubaugh, A. J. Casselman, and W. W. Williams arrange the various antigen extracts for the serum diagnosis of syphilis in the order of their efficiency as follows: 1. Cholesterinized alcoholic extracts of human, pig, and beef heart, carefully controlled; 2, plain alcoholic extracts of known syphilitic liver; 3, acetone-insoluble lipoids (Noguchi); 4, plain alcoholic extracts of human, pig, and beef heart; 5, acetone extract of syphilitic liver; 6, plain alcoholic extract of normal liver. Best results are secured by using several antigens with each serum, including plain and cholesterinized extracts. This increases the amount of work and the quantities of the various components of the reaction, but results warrant the former, and the latter is readily overcome by using just one half the quantities specified in Wassermann's original technic.

Blood Transfusion in Pernicious Anemia.—K. M. Vogel and U. F. McCurdy hold that early transfusion of physiologically unaltered blood, preceded by the usual tests for isohemolysins and isoagglutinins, is one of the most promising forms of palliative treatment in pernicious anemia. Greater judgment and accuracy are needed, however, in determining the amount of blood to be transfused. Enumeration of the reticulated red blood cells by

the method of vital staining (brilliant cresyl blue is used by the authors) affords a useful means of gauging the hemopoietic activity of the bone marrow, large numbers of these cells signifying a well functioning marrow, and small numbers an aplastic condition. By thus watching the patient's progress, the indications for various therapeutic measures can be well determined.

JOURNAL OF THE MEDICAL SOCIETY OF NEW JERSEY.

December, 1913.

Diagnosis in Infants and Children.—Thomas N. Gray directs particular attention to the difficulty of making a diagnosis in infants and children, owing to the lack of accurate history and the difficulty of properly evaluating subjective symptoms. In addition to a detailed discussion of the interpretation of many general symptoms, Gray offers valuable suggestions to aid in the establishment of an accurate diagnosis. Age incidence may be of much help. At less than six months of age a meningitis is probably not tuberculous, by the margin of two to one. Between two and five years meningitis of tuberculous origin is common. Rheumatism is negligible below the age of two years, and rare before three. The last half of the first and the entire second year is the period for rickets, while scurvy is frequent for at least half a year later. Syphilitic epiphysitis, which may be confounded with scurvy, is frequent before the end of the first three months. Fever is often of considerable differential importance. Lobar pneumonia, primary bronchopneumonia, gastrointestinal diseases, otitis and mastoiditis, scarlet fever, measles, influenza, rheumatism, catarrhal jaundice, retropharyngeal abscess, pleurisy, and acute nephritis ordinarily begin with a rapid rise of temperature which continues for several days. Diphtheria and appendicitis are more often associated with a moderate than with a high fever. Scarlet fever is more often in doubt as a diagnosis in a patient having a rash than any other infectious disease, and fifty per cent. of the cases seen as suspected scarlet fever have proved to be some other condition, the chief confusion arising in cases of German measles, streptococcal angina, and toxic and serum rashes. No single symptom is trustworthy as indicative of scarlet fever, unless possibly an angina with a punctate rash, vivid in color, covering the arch of the palate, the palate itself and running forward on the roof of the mouth. When this condition can be demonstrated, even if not so striking in appearance, the case is one of scarlet fever in the face of the most atypical rash or even no discoverable rash.

JOURNAL OF NERVOUS AND MENTAL DISEASES.

October, 1913.

Fear and Ataxia.—William J. A. Maloney calls attention to the fact that emotions such as anxiety, fear, grief, etc., are very important factors in the development of ataxia in tabetics. He expresses the degree of ataxia in a given case by the statement that the coefficient of ataxia is equal to the ataxic complexes divided by the actual coordinating power, which, when ataxia is present, is greater than unity, i. e., the numerator is greater than the denominator. Since ataxic processes are largely dependent upon structural changes in the nervous tissue, the numerator of the formula cannot be greatly modified. Coordinating power, however, may be much increased by the familiar Frenkel movements. On the other hand, shocks, frights, and emotional distress produce a state of anxiety and loss of confidence which greatly diminishes the coordinating power which may turn the balance and practically incapacitate the patient. Examples are cited in support of this principle, and emphasis is laid upon the importance of eliminating fear and developing self confidence in the patient as well as training his muscles.

Catatonic Syndrome and Its Relation to Manic Depressive Insanity.—George H. Kirby gives other evidence to show that catatonic symptoms are not infrequent in the course of manic depressive insanity. He is convinced that Kraepelin overvalues catatonic manifestations as evidence of a deteriorating psychosis, and that many of these cases have served to swell unduly the dementia præcox group. The author has shown that "marked catatonic syndrones may appear in otherwise typical manic depressive cases. In some cases a catatonic attack apparently replaces the depression in a circular psychosis."

Sunlight and Flashlight Reactions and Consensual Miosis to Blue Light.—Myerson and Eversole have made a series of experiments testing the pupillary reactions, especially concerning the amplitude of reaction to different colored lights of similar brilliancy. For this pure glass screens of red, green, and blue were used with a Nernst light for illumination, and the consensual response noted. A series of forty cases were examined and it was observed that in the normal eyes the uniform results were strongest contraction to the red light, next the green, and the feeblest reaction to the blue light. Where there was any defect of reaction, the response to the blue light was either diminished or lost. Responses to green were next affected, and in no case was the red response affected earlier or to a greater extent than the other colors. In one case of general paresis, reaction to red was the only one obtained. It is interesting to note that other experimenters have found that in night birds the greatest reaction of the pupil is to green, while in day birds it is the same as in the human subject.

NEW YORK STATE JOURNAL OF MEDICINE.

December, 1913.

Treatment of Large Ventral Hernia by Inversion of Sac.—Irving S. Haynes has used this method in seven cases with uniformly successful results, all patients having been cured. The method consists in dissecting "the skin from the sac and the skin and fat from the fascia for a distance of from one to two inches beyond the margin of the herniai orifice." Depending upon circumstances the skin may or may not have to be entirely removed. If the presence of complications calls for the opening of the sac, it should be accurately closed again before proceeding with the inversion. For inversion a row of heavy kangaroo tendon sutures is placed matresswise, taking bights both wide and deep. These sutures are drawn tight and tied, inverting the portion of the sac lying between the two lateral rows. A second similar row is then placed, with the joints placed so as to "break" with those of the first row, and taken wide enough, if possible, to in-

clude the margin of the hernial aperture. Tying of these completes the inversion of the sac proper, and the edges of the opening are approximated. A third row is then inserted so as to invert a portion of the abdominal musculature bounding the sac, and this row is then reinforced by several bronze wire retention sutures, placed in a figure of eight and tied over rolls of gauze. A small drain is placed in the wound and the operation is finished by the application of dry dressings. Union is prompt and seems to be so firm as to prevent a recurrence of the hernia.

Enuresis and Chronic Digestive Disturbances.—Frank Van der Bogert calls attention to the fact that the fundamental nervous disorders of childhood are almost invariably of dietetic or digestive origin, and suggests that such disturbances may be the fundamental causes of nocturnal enuresis. To test the validity of this view he examined the histories of fifty children who were the subjects of this disturbance of bladder function and has found that there was invariably sufficient digestive disorder to account for the enuresis. Errors in feeding were encountered in every case, the most constant being in the nature of starch and sugar excesses. The digestive disturbance leads to a nervous imbalance, which is the immediate cause of the enuresis. Treatment should be directed to the correction of the digestive disorder, including directions as to the hours of feeding and the frequency of meals. Medical treatment is confined to the temporary use of laxatives and intestinal antiseptics only. Local irritations require local treatment, including circumcision. These methods of treatment have given the author a fair percentage of cures, sufficiently numerous, in fact, to make him feel "exceedingly enthusiastic."

PEDIATRICS.

December, 1913.

Specific Resistance in Tuberculosis.—K. von Ruck and H. J. Achard believe that in the human race a specific resistance either transmitted or acquired, though often inadequate, is as a rule present already, and that this accounts for the complete resistance to tuberculosis in some persons, and in others for the presence of latent tubercle bacilli without lesions in various tissues, for the spontaneous healing of minute and localized foci found so frequently on autopsy after death from other diseases, as well as for the chronic course and tendency to recovery in cases in which the disease has declared itself. If this should actually be the case then only about one person in five would need greater protection than they actually possess, and if they could be known and recognized only these would require the benefit of prophylactic immunization.

Medical Treatment of Tuberculosis.—Stephen Harsberger says that the cures, or majority of cures we see today are due, in great part, if not fully, to individual resistance to the less toxic infections, and not to any preferred direct therapy that we use, and that cases with scant resistance infected with virulent strains of tubercle bacilli succumb, as a rule, under the best and most scientific treatment. Tuberculins give evidence of value only in milder cases, and we know that the milder cases improve under any treatment and without treatment.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, November 17, 1913.

The President, Dr. Reynold Webb Wilcox, in the Chair.

Cure of Osteosarcoma by the High Frequency Current Combined with X Ray Treatment.—Dr. J. Herman Branth presented a patient, who was first shown at the annual meeting of the association in January last. Nine years before that he had been operated on by Doctor Thorner for sarcoma of the left ilium, and subsequently he was treated by Doctor Branth by means of the x ray, with the result of recovery in eighteen months. In February, 1912, a painful tumor appeared over the left lower ribs, a recurrence of sarcoma. Doctor Branth did not see him until June 13th of that year, when it was found that he also had a rotary lateral curvature of the spine. He was given x ray treatment, combined with the bipolar, high tension, high frequency current, and this afforded him relief much more quickly than the x ray alone in the previous attack. Another and unexpected relief was the marked improvement in the spinal curvature, with the reduction of the resulting anterior and posterior chest depressions. At present, Doctor Branth said, the sarcoma was well. It seemed to him that the burn of the x rays had been held off by the high tension current. The rotary lateral curvature, he believed, was compensatory. In its treatment he had made use of gymnastic exercises, and there was now not much left of it.

Importance of the Early Recognition of Myopathies by the General Practitioner.—Dr. Francis A. Scratchley stated that the myopathies were just now attracting a great deal of attention, and at the recent international medical congress in London, the neurological section had devoted a whole day to the discussion of the subject. It was necessary to suspect all cases in which there were early loss of power and wasting in the muscles—especially in children—whether running a rapid or slowly progressive course. All alterations in the contour of the limbs or changes in gait or other movements, particularly when not preceded or accompanied by other symptoms, should arouse suspicions of myopathy or myelopathy. He urged careful examination with the aid of the electric currents, and also microscopical examination of the tissues. Early consultation with a competent neurologist was advisable, since the earlier the nature of the condition was recognized, and proper treatment instituted, the better would be the prognosis. In most instances, the damage was done early; after which arrest might occur, only to be disturbed by some subsequent circumstance causing renewed progression. Among the cardinal characteristics of myopathy were the following: It might appear at any age, but usually occurred in the young, and the disease was oftener transmitted from the mother than the father. It ran a slowly progressive course. It attacked groups of muscles and spread from one muscle to others. There was loss of power with wasting of muscles, though the

wasting might precede the adynamia. There was a diminution or loss of faradic response. The muscles were flaccid until wasting was complete. Myopathy might come to a standstill—be arrested or improve. The other symptoms, as laid down in the books, might not be present in all cases of myopathy, and might be found in myelopathy. Doctor Scratchley's inferences from the recent changes in classification, and from the newer histopathological findings, were to the effect that observers were tending toward the belief that myopathies and myelopathies are more than allied, and it now became a desideratum to discover a common cause of origin—possibly a neurotoxin. The question was still unsettled whether in myopathy the muscles alone were attacked, or whether the muscles, nerves, and spinal cord cells were all implicated. A simpler classification was urged, as tending toward an earlier and better diagnosis; which would make the prognosis better. The treatment should be in the hands of the neurologist, if possible, since much depended upon the manner in which massage, passive and active, and the action of electricity were employed in these cases.

Doctor Wilcox, the president, said that there was scarcely any subject which, for the internist, had been shrouded in greater obscurity than the myopathies, and the admirable paper by Doctor Scratchley afforded hope that we might now arrive at a proper classification, which would be of the greatest possible service. If the neurologists would reach some definite conclusions regarding these conditions, it would materially simplify the matters of diagnosis and treatment.

Dr. Louis F. Bishop said it was important that those in general and hospital practice should bear these conditions in mind. From time to time he recognized myopathy in a patient who had been supposed to be suffering from something entirely different, but in whose case it was found, on careful examination, that the real trouble was one of these muscular dystrophies. Unfortunately, such cases were often misunderstood. While the condition was really a local muscular one, the patient was believed to be the subject of some general wasting disease. The effort of Doctor Scratchley to point out the practical causes, and then reassemble the affections into a few groups, he thought, was in line with modern progress in medicine. At the recent international congress in London the whole tendency was to simplify and find fewer causes for disease. In the section in general medicine this was notably the case as regards the arthritides, when gout, rheumatism, and allied affections were discussed. So, too, in the discussions on diseases of the heart and bloodvessels, the tendency was to simplify the matter of classification, and in this way to simplify also diagnosis and treatment.

Dr. David E. Hoag said he thought that Doctor Scratchley's comprehensive and succinct presentation of the subject certainly ought to be added to the classics in the literature of the myopathies. There was probably no condition, or group of conditions, in the whole field of neurology in which there was greater need of elucidation, or which had promised so little in the way of treatment. A professor in a western medical college was reported to have told his students that the pathology and diagnosis of disease did not so much matter; what the public wanted was a "curing doctor." And, so, what the general practitioner wanted was a curing specialist. His experience, at the New York Post-Graduate Medical School, with physicians from all parts of the country, had shown him that these practitioners were well informed as to the general management of cases. What the specialist too often neglected to do in consultation was to give specific directions regarding treatment. Thus, for instance, he should state the relative value of massage and electricity in a given case. If massage was advised, the particular kind of massage should be mentioned; if electricity, the special current to be used and just how and when it should be applied. It was these matters of detail on which the textbooks were so weak. The chief merit in Doctor Scratchley's paper was the getting away from the prevailing nomenclature of the myopathies, which neurologists had seemed to vie with each other in making as complicated as possible.

Dr. Ransford R. Van Gieson said that, as the author of the paper had remarked, myopathy meant simply some affection of a muscle. All these classifications arose from the observations of different writers in different cases. In his own experience one curious fact was noticeable. When formerly practising in the country he had met with these muscular affections more frequently than he had since practising in the city. The great point to be considered was whether or not degeneration of the nerve cells was present. If it was, the case was hopeless; although we could not determine positively the presence of such degeneration unless the opportunity for an autopsy were afforded. In cases where there was no nerve cell degeneration he had seen patients not only improve, but recover.

Dr. Edward Wallace Lee said that these conditions of muscular hypertrophy, atrophy, etc., were of interest and importance from a medicolegal point of view, because suits for damages were often brought in cases where it was maintained that they had occurred as the result of injuries. Doctor Scratchley's paper was therefore exceedingly interesting in this respect. From a study of it one would be thoroughly prepared to give an opinion as to the value of injury as a possible etiological factor.

Dr. Frank Wade Robertson said that all must feel indebted to the author of the paper for the clear and concise manner in which he had presented this subject. The neurologists had indeed seemed to fairly gloat in finding out new types of myopathies, so that there was much confusion regarding them; and Doctor Scratchley had distinctly cleared the atmosphere. The general practitioner might well be excused for not making a correct diagnosis in such a state of affairs as had existed. The views expressed on the subject in the textbooks of a few years ago differed very much from those now held. He agreed with Doctor Scratchley as to the more frequent heredity on the maternal side. Another point was, that at the clinics cases were quite often seen in young children who had been treated for some form of "rheumatism." The hypertrophy or wasting was found more particularly in the muscles of the trunk, where the condition was more apt to escape notice than in the limbs. The progress of

the disease, as it appeared in children, was as a rule more rapid in those cases in which some gastrointestinal disturbance was present. He had also found myopathies following scarlet fever and diphtheria more frequently than other infectious diseases. The treatment at present was, unfortunately, very unsatisfactory. He would like to emphasize the point made by Doctor Hoag that it was the duty of the specialist to give specific and detailed directions regarding treatment, especially by such physical measures as electricity, massage, hydrotherapy, etc.

Doctor SCRATCHLEY said that as to the matter of trauma, a large number of cases were on record in which there was a history of injury. In many of these, however, the etiological relation of this was very questionable. Personally, he believed that the underlying cause of the myopathies was some toxic condition, at present not well understood, and that trauma was simply one of a considerable number of exciting causes.

Why Electrotherapy Does Not Cure.—This paper, by Dr. ANDREW C. GEYSER, will be published in the JOURNAL.

Dr. SAMUEL G. TRACY said he could personally testify to the great relief often afforded by electricity in cases of neuralgia. Even in *tic douloureux* he had seen the pain disappear instantly.

Dr. FREDERICK DE KRAFT said he believed that the reason why electricity so often met with defeat in the hands of some of those who employed it, was because they had failed to understand the underlying pathological condition in the cases they were endeavoring to treat. For instance, many of the cases of muscular weakness following diphtheria were made worse, instead of better, by electrical treatment. In most of these cases there was a peculiar implication of the nerves at their point of exit from the spinal canal, and this pathological condition was increased by the treatment given, with the result of further wasting of the muscles and increase of palsy. If the faradic current was applied injudiciously to a muscle, it would tetanize it, and if the application was continued, the muscle would lose fibre. On the other hand, if a mild constant faradic current was applied for four minutes daily for twenty days, the muscle would gain fifty per cent. in size. By the intelligent employment of high frequency currents we had a means of so affecting the circulation of the body that blood was driven to the periphery. As a result, anemia of the great splanchnic area was produced, and in this way we could get rid of the chronic congestion of the liver so often met with in intestinal toxemia, with the production of pain in the form of gout, neuralgia, or so called (not true) neuritis. Many of these conditions were relieved by thus abating the cause. Many failures in electrical treatment resulted from the neglect of the physician to insist on the patient's cooperation. Very often the patient, after receiving his treatment at the office, would rush off to business, and very likely wind up the day by going to some form of evening entertainment. Good results could be expected only in the hands of those who carefully studied the pathological conditions encountered and the physiological relations of the various currents.

WESTERN SURGICAL ASSOCIATION.

Twenty-third Annual Meeting, Held at St. Louis, December 19 and 20, 1913.

The President, Dr. JABEZ N. JACKSON, of Kansas City, Mo., in the Chair.

(*Concluded from page 247.*)

Significance of the Jackson Veil.—Dr. DANIEL N. EISENDRATH and Dr. E. W. SCHNOOR, of Chicago, stated that from their observations during operations, from dissection of cadavers and finally from examination of ten fetuses, they believed that certain conclusions could be drawn. The parietocolic fold of Jonnesco, corresponding to the pericolic membrane or Jackson's veil, was a reduplication or fold of peritoneum which was constantly found during fetal or postnatal life. That membrane corresponded in every way to the descriptions given by Hale of Jackson's specimens in his two principal papers, published in 1908 and 1913 respectively. It was a fine translucent membrane which varied greatly in vascularity. In some of their cases there were only a few fine capillaries, while in others the membrane was extremely vascular. The upper border of that right sided pericolic membrane was almost invariably at the level of the hepatic flexure and its lower border from one to one and a half inch above the lower end of the cecum. In some of their cases the lower border either extended a little farther down and covered the entire cecum and a portion of the appendix, or fused with the fold of Treves. In the great majority of these cases this fusion did not occur. The vessels of the pericolic membrane were, as a rule, directed downward and inward. In two of their cases the membrane was as thick as ordinary cardboard and showed practically no vessels. In the remainder of the patients the membrane was very thin. It extended inward across the front of the colon to the attachment of the mesocolon and either fused with the peritoneum, covering the latter, or fused with the omentum along the upper third of the ascending colon. These might be called normal cases. The membrane being a persistence of a fetal structure, under no circumstance should it be stripped off. Such a step would result in leaving an extensive denuded surface. From the examination of specimens and from observations in the living, they believed that the genitomesenteric fold of Reid was the forerunner of the ileopelvic band of Lane and bore the same potential relation to the Lane kink that the pericolic membrane bore to possible kinks of the ascending colon. That such constrictions occurred one could no longer doubt. One case reported afforded ample proof of the role which the Jackson veil might play in the production of acute and chronic obstruction of the ascending colon and cecum. They were not prepared to state at present what caused this change in the pericolic membrane from an innocent persistent fetal structure to the production of a distinct pathological entity. In their opinion, Jackson, Pilcher, Gerster, Flint, and others had rendered a great service in calling attention to the various sequelæ of such pathological changes in the pericolic membrane. One of the chief objects of this investigation had been fulfilled by calling attention to the fact that there were two distinct types of

pericolic membrane, those which were innocent, and those which might cause mechanical interference with the function of the colon. Each case must be judged upon the operative findings and one was not justified in saying that every pericolic membrane required interference. The majority were normal structures. Their examination of fetal cadavers confirmed those of Gray and Anderson, that there was a left parietocolic fold which corresponded in every detail to the same structure on the right side. It was a constant finding in the fetus and no doubt search for it in the future during operations on the left side of the abdomen would confirm these fetal observations. The treatment of the pathological conditions due to the right pericolic membrane must depend on the findings in the individual case.

Dr. Leonard Freeman, of Denver, said that not long ago he made up his mind, in such cases as it was possible, to observe the Jackson membrane. Since then he had done thirty-one sections in which the membrane was observed. He found it in twenty-four cases; hence it had been extremely common in his experience. He was inclined to agree with Doctor Eisendrath that it was more or less of a normal structure, at least in the particular cases in which he had had an opportunity to notice it. In these instances it was a thin, movable membrane, filled apparently with bloodvessels and nerves, but merged into Treve's membrane and into Jackson's membrane when these things occurred in his cases. In but two instances that he saw was he at all convinced that it produced any pathological disturbance to the bowels. In one of these cases the obstruction was very marked.

Dr. Miles F. Porter, of Fort Wayne, stated that the mere presence of what seemed to be a rather unusual fold in the peritoneal cavity did not necessarily call for an operation of one sort or another upon that fold. In the next place, it did not seem to him that from a practical standpoint it was important to determine whether these folds were of embryonic origin or of pathological origin. It was important to determine whether or not they were doing any harm. It sometimes happened that they found folds present that were doing a great deal of harm, and on one occasion, after releasing these folds which were producing marked intestinal obstruction, he came very nearly closing the abdomen without any further search. Had he done so, he would have closed an abdomen containing a fibrosarcoma of the transverse colon near the splenic flexure. He had seen a number of these cases where the bands had been released, the obstruction had been relieved, but the patients had been made no better.

Dr. William T. Reynolds, of Kansas City, Mo., had made some observations and investigations of the inside of the abdomen of infants. He had had eleven of these little patients, the youngest of which was six months old, and the others up to term. In no instance was there an absence of this membrane on the right side of the colon high up, and in no instance was it absent on the terminal ileum. In three cases it was present on the opposite side as observed by Doctor Eisendrath.

Dr. Jabez N. Jackson, of Kansas City, Mo., stated that if a person simply found a loose, vascular veil floating over the colon, that had no bands of fibrous tissue in it definitely interfering with the capacity of the gut somewhere, he should just dismiss it from his mind. When this membrane interfered mechanically with the capacity of the gut it should be divided or stripped off, and this should depend upon the individual case. In some instances a mere slit of an incision was all that was necessary. Sometimes the attachments were so multiple that no simple line of incision would do it, and they had practically to strip the restricting membrane off.

Dr. M. L. Harris, of Chicago, said that after these membranes were dealt with the patient presented a medical case, and unless properly treated these membranes would recur, if due to a pathological state in the intestinal wall or to low forms of infection. They could produce experimentally these conditions in animals, and when they found these same conditions existing in the individual, and when they knew the great frequency with which intestinal stasis took place, in his opinion this low infection from intestinal stasis would be found to be the underlying factor in this condition.

Nonpapillary Benign Tumors of the Bladder.—Dr. E. S. Judd, of Rochester, Minn., noted that out of 164 neoplasms of the bladder operated on in the Mayo clinic, two were of the nonpapillary benign type, springing from the muscular layer of the bladder. He had found thirty similar cases previously reported. In most of the reported cases, bleeding was the first and most marked symptom, and came apparently from the congested mucous membrane of the entire bladder, especially that covering the tumor. Those muscular tumors extended into the bladder and outward into the peritoneal cavity. The point of origin of the two herein reported was close to the meatus. Both were pedunculated and were removed suprapubically. Both patients made uneventful recovery and had been well six years and nearly two years, respectively. Pathologically, the tumors were covered by stratified mucous membrane similar to the mucosa of the bladder. Their appearance throughout was that of uterine myomas; they were composed of smooth muscle fibres and fibrous connective tissue.

Necessity of Conserving the Intercostal Nerves in Abdominal Incisions.—Dr. E. P. Quain, of Bismarck, N. D., had had occasion to operate on several patients who had previously been operated on through lateral abdominal incisions placed in such a way as to sever intercostal nerves. The findings in such cases suggested that the omentum might have a greater tendency to adhere permanently to that part of the abdominal wall which had been deprived of intercostal nerve supply, than to any other part of the parietal peritoneum. A series of experiments on dogs and rabbits had been undertaken in an effort to determine whether these observations were correct. The following plan was adopted: In group one, the lower intercostal nerves were severed on one side through an incision near the costal margin without damaging the peritoneum; in group two, an incision was made in the linea alba, both sides of the parietal peritoneum were rubbed with gauze, care being exercised to

apply an equal amount of trauma on each side. The wound was closed. Through a second incision at the costal margin on one side, segments of the intercostal nerves were removed. In group three, the same operations were done as in group two, with the addition of tincture of iodine in weak solution to the peritoneum on each side.

At autopsy there were no macroscopic changes found in group one. In group two, pathological changes were more marked on the enervated than on the normal side in seven of the eight experiments. Microscopic sections showed a more chronic infiltration and a delay in the reparative process in the enervated peritoneum when compared with corresponding sections from the normal side. In group three, application of tincture of iodine and of intestinal contents caused adhesions and chronic peritoneal infiltration to be more marked on the side deprived of intercostal nerve supply. Adhesions were confined to the side of nerve extirpation in eight animals; two of the three cases with bilateral adhesions had most of the adhesions on the operated side; fibrin deposits were limited to the enervated side in one case; and one animal without adhesions had a more marked peritoneal infiltration on the operated side. There were three negative experiments. Hence, eighty per cent. of the experiments gave a positive answer to the question, whether the destruction of intercostal nerve supply was of pathological significance to the peritoneum. That adhesions and chronic infiltrations were more likely to follow trauma and infection on an enervated than on a normal peritoneum, were facts which argued strongly against lateral longitudinal incisions and in favor of transverse incisions.

Conservative Operative Treatment of Long Standing Inversion of the Uterus.—Dr. H. S. Crossen, of St. Louis, stated that though inversion of the uterus had been skillfully treated by posture and taxis since the time of Hippocrates (400 B. C.) and by amputation in the more severe cases since the time of Soranus (100 A. D.), it was only within the last half century that conservative operative measures had developed. At the present time hysterectomy was the treatment commonly employed in the long standing cases. In some of these cases, particularly in women passed the age of thirty-five years, hysterectomy was the best treatment. In other patients, however, especially in younger women, sacrifice of the uterus was not the best treatment. In such patients preservation of a functioning uterus was very important and might be attained through a conservative operation. The operative method by which the long time inverted uterus might be replaced and its functions preserved, was complete division of the anterior uterine wall and cervix (Spinelli, 1900), which was most satisfactory. One patient, twenty-three years of age, had a complete inversion of the uterus of a year's duration. In the trimming of the thickened uterine wall so that it could be inclosed within the shrunken uterine peritoneum, about one fourth of the wall was sacrificed. The patient made a perfect recovery. Menstruation began the second month after the operation and had been regular and normal now eight months. The advantages of the Spinelli method were: 1. Being vaginal it minimized the amount of peritoneal contamination, a most important consideration when dealing with an infected structure. 2. As the reposition was accomplished by incision, there was not the bruising and perforation of the friable uterine wall, which had so often accompanied attempted reposition by dilatation of the constriction ring. 3. Division of the interior uterine wall was preferable to division of the posterior wall, because the work was thus more easily and accurately accomplished. The anterior uterine wall and anterior fornix lay toward the operator, hence were less deeply situated and more easily reached. Again, when the operation was anterior, the bladder might be lifted away, giving a wide space for investigation of the inversion funnel and of the various pelvic structures, also more room for the operative manipulations of incision, reposition, and suturing. Again, if there was a marked backward tendency, effective forward fastening of the uterus might be carried out through the anterior incision. Again, a suture line on the posterior surface of the uterine wall was more likely to form troublesome adhesions; to the intestines, leading to obstruction, or to the posterior pelvic wall, leading to adherent retrodisplacement. The points in favor of the posterior incision were, that it eliminated the extra opening for drainage and that the sacrouterine ligaments might be conveniently shortened. But these minor advantages of the posterior incision were outweighed by the more important advantages of the anterior incision.

Puerperal Eclampsia; Suprapubic Cæsarean Section.—Dr. B. M. Ricketts, of Cincinnati, drew the following conclusions: 1. Medical treatment alone was of but minor importance. 2. Conveying eclamptic patients in an ambulance should not be done except in rare instances. 3. The cause of eclampsia had not been discovered. 4. The mortality of both mother and child was proportionate to the early hour of operation. 5. Celiohysterectomy was the method of choice in cases of infection, uterine rupture, or neoplasms. 6. Celiohysterectomy was indicated after the sixth month of gestation when eclampsia was manifested, with or without convulsions in the absence of known infection.

Letters to the Editor.

THE OPHTHALMOLOGICAL CONGRESS AT ST. PETERSBURG.

New York, *February 2, 1914.*

To the Editors:

It is to be hoped that the appeal issued by Professor Julius Hirschberg, of Berlin, the well known ophthalmologist, to boycott the International Congress to be held at St. Petersburg, July 28 to August 2, 1914, as a protest against the edict of the Russian Government to restrict the sojourn while in Russia of the Jewish members of the congress to a certain specified time (this being a concession reluctantly granted by the authorities, whose original intention it was not to admit Jewish physicians at all), will find a ready response among American colleagues who intend to visit the congress.

Such a protest, we may expect, will compel the Government to hold in abeyance for the time being the operation of its inhuman anti-Jewish laws, without detriment either

to itself or to the nation at large, if not as a matter of expediency, at least as one of plain, elementary decency that is observed even by the most benighted savage toward a stranger knocking at his gate, not to speak of an invited guest. The shameless cynicism of the horde of barbarians who preside over the destinies of unfortunate Russia (many of them Russians neither by education nor by environment) can be effectually met and rebuffed only by concerted enlightened public opinion from abroad—the only agency that seems to exert a certain restraining influence on the Russian bureaucracy; for public opinion as a social force that moulds the activities of a government and lies at the basis of that harmony between it (the government) and the people without which no civilized nation can exist and prosper—is either entirely unknown, or is practically a negligible quantity in Russia. There can be no doubt that the medical men who arranged the congress were not consulted as to the advisability of either admitting or excluding Jewish members; matters of this kind are usually decided over and above the heads of the participants.

It is also interesting to remember that the Russian Government, after permission for such a congress had been wrung from it (the only gatherings encouraged are those of the official Black Hundreds—organizations made up of the worst reactionaries and criminal pogrom makers), placed so many obstacles and restrictions in its way as entirely to deprive it of any practical value; especially if its deliberations were not to be of a purely theoretical nature, and any tincture of political tendency could be imputed to them. To be sure, for appearance's sake the Government must occasionally have an international gathering—*noblesse oblige*—but no practical results so far as Russia is concerned are to be expected from it. It may safely be predicted that such subjects as the unchecked prevalence of trachoma with all its terrible complications and consequences, and the various specific diseases of the eye that may be attributed directly or indirectly to the economic status of the nation and to the lack of elementary hygienic precautions, thus reflecting somewhat unfavorably upon the well known solicitude of the Russian Government for the welfare of its people, will be either rigidly excluded or modified in a way not to offend the tender susceptibilities of the Higher Spheres. Alcoholism, the scourge of the nation, is a tabooed subject at gatherings of this kind. A government that draws enormous revenues from its spirit monopoly and that is engaged systematically in preparing and fortifying the ground for the physical and mental deterioration of the nation, cannot be expected to encourage the dissemination of ideas of temperance; as a matter of very recent history, several attempts that were made in the Duma to limit by educational work the terrible spread of alcoholism, were ruthlessly quashed at the direct command of the authorities. To limit the spread of trachoma would entail an expense to which neither the local, the quasi-selfgoverning municipal bodies, nor the central Government which squanders the very blood of the nation on its struggles with the "internal enemy," will ever consent. The progressive, discontented element can always be kept under perfect control either by overwhelming brute force, or by doling out so called reforms in infinitesimal doses; and as regards the uncountable millions of the *plebs*, there is always enough wealth that can be ground out of even an impoverished, ignorant, and physically and morally debauched population to keep the machinery of absolutism well oiled and going for a practically indefinite time.

Alexander Rovinsky, M. D.

ALCOHOL IN THE TREATMENT OF DISEASE IN THE AGED.

Brooklyn, New York, *February 2, 1914.*

To the Editors:

It was with great interest that I read Doctor Orenstein's article on the Treatment of Disease in the Aged, in the number for January 24, 1914, of the New York Medical Journal, as I have devoted attention to this subject for a number of years. With regard to the suggestion that a tablespoonful of whiskey in hot water may be taken at bedtime, I should like to cite two cases which have come under my observation.

About twenty years ago, an educated woman, married, who had passed the climacterium, sought my advice because she was failing very rapidly. She was suffering from chronic myocarditis with incipient insufficiency, and from arteriosclerosis, chronic nephritis, enlargement of the spleen and liver (incipient cirrhosis), and chronic gastritis —all the effects of alcoholism. On my inquiry she admitted taking a pint of whiskey every night on account of sleeplessness. She said she had been advised years ago to take a teaspoonful at night for insomnia. This helped her for a few nights, after which she had to increase the dose to two teaspoonfuls. As sleeplessness recurred, she gradually increased the amount until it reached a pint, but without permanent relief. The first glance showed the case to be hopeless, and she died some months after in spite of the treatment I started.

The second case was even more pathetic. One day a woman, also of good family, entered my office in a state of intoxication that could not be mistaken. Her condition was about the same as that of the first case, only not quite so bad and with the difference that she was under forty years of age and in the fourth month of pregnancy. She also died several months after my first examination. The history of the case was about the same. She took first one, then two, and increasingly more teaspoonfuls of whiskey to induce sleep, till she reached the dose of one pint every night. With the cunning of persons craving a stimulant, she was able to get what she wanted in spite of the constant vigilance of her family.

Such cases have convinced me of the inadvisability of prescribing whiskey as a soporific. Personally I first prefer to prescribe light physical exercise accompanied by the proper hydrotherapeutic and dietetic measures. If this should not be expedient I advise taking small doses of the milder hypnotics. Only in a few instances, especially where the patients are elderly women, have I resorted at all to alcohol, and then only in the form of beer, of which I prescribed a wineglassful before retiring. Beer has the advantage that the amount cannot be increased inordinately and that, in proportion to the amount of alcohol contained, it has a greater soporific effect than any other alcoholic beverage.

Oswald Joerg, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Technik der ärztlichen Massage. Für praktische Aerzte. Von Dr. Anton Bum, Privatdozent an der Wiener Universität. Mit 54 Textabbildungen. Berlin und Wien: Urban & Schwarzenberg, 1913. Pp. 112.

In this little book, Doctor Bum has done us a service. The general survey of massage is clear and concise. He begins by enumerating the various methods, friction, kneading, vibration, tapping, and stroking (*effleurage*). Next we have descriptions of technic and physiological effects, interspersed with many practical points. After this we have the applications of massage, traced according to the effects on the different parts of the body. The illustrations help us to understand the use of the hands and fingers, each step being carefully described; by which it appears that the effects of massage of the bare skin are far more complete than what are producible on the covered body. The last section treats of the diseases in which massage is indicated. We can recommend this book.

Handbuch der speziellen Pathologie des Harns. Von Dr. med. Ferdinand Blumenthal, Universitätsprofessor in Berlin. Berlin und Wien: Urban & Schwarzenberg, 1913. Pp. viii-492.

The treatise which Professor Blumenthal has recently given to the world, is a work of very considerable practical value, and bears upon it tokens of much thought and varied research. The author's purpose is to fix a routine attention and a scientific interpretation upon the pathological occurrences in the urine. That it differs from books on the chemical analysis of the urine must be noticed; thus, the urine in the various diseases and infections is made the subject of special study. Other sections are devoted to disorders of metabolism of special organs, as the thyroid, the suprarenal glands, pancreas, and nerv-

ous system. The urine in the different forms of diabetes is viewed according to the principles of pathology and of physiological chemistry. We have sections on renal glycosuria, on duodenal, pancreatic, and adrenal glycosuria. Other matters of great importance, which we find, are the phenomena of demineralization in tuberculosis, the tests to be applied in diabetic coma, in toxic glycosuria, gout, and cancer. The whole work throws a strong light upon the problems of diagnosis and prognosis. Such a book is very much needed, and we can commend it to physicians.

Praktische Winke für die Chlorarme. Von Prof. Dr. H. Strauss, Direktor der inneren Abteilung des Jüdischen Krankenhauses in Berlin. Zweite vermehrte und verbesserte Auflage. Berlin: S. Karger, 1914. Pp. 63.

A diet of restricted salt content has been demonstrated to be of value in the topical effusions of acute and chronic parenthymatous nephritis and in certain cases of valvular heart disease, accompanied by rapid increase in body weight and a low sodium chloride percentage in the urine. The symptoms of diabetes insipidus, that little understood condition which is probably due to a variety of obscure pathological causes, and some cases of myocarditis with beginning failure of compensation, are also benefited by a salt limited diet. The normal allowance of sodium chloride in the diet of a healthy adult is one and a half to two grams daily. Doctor Strauss gives directions for the administration of test meals for the establishment of the salt tolerance of the individual patient, and a simple method for making the quantitative determination of sodium chloride in the urine. To assist in carrying out the principles of the salt restricted diet, there are given here in convenient form complete tables showing the salt percentage of the different kinds of foods and beverages. Numerous practical recipes for the preparation of palatable and nourishing dishes of low salt content make this work of especial value to hospitals and sanatoriums where dietetic treatment can usually be more efficiently applied than in private practice.

The Microtomist's Vade-Mecum. A Handbook of the Methods of Microscopic Anatomy. By Arthur Bolles Lee. Seventh Edition. Philadelphia: P. Blakiston's Son & Co., 1913. Pp. x-526. (Price, $4.)

The seventh edition of this book includes the important improvement in histological technic, viz., Gilson's new mounting media. For these media—camsal balsam and euparal—afford a ready and safe means of mounting direct from alcohol, without the intervention of essential oils or other clearing agents, which are often contraindicated; and of conferring on unstained or insufficiently stained elements just the required degree of visibility, thus enabling us to see details which are invisible in the usual mounts. The author also includes the recent improvements in the silver fibril stains of Bielschowsky and Ramón y Cajal, which have now become less capricious methods for the study of neurofibrils, and valuable aids in the study of other objects. These methods are given at length, the author having abstracted the whole of Ramón's methods from the latest original source. The sections relating to neurofibrils are thus almost entirely rewritten, and so are those relating to blood and blood parasites. Mr. Lee's handbook is one of the most satisfactory available.

Interclinical Notes.

Any physician who intends to establish a private brewery, or to obtain a position in the British peerage by doing the thing on a grand scale, cannot do better than peruse carefully a late issue of the Cambridge Manuals of Science and Literature, entitled *Brewing*. The author, A. Chaston Chapman, is a distinguished chemist as well as president of the Institute of Brewing. Lager beer does not receive attention, but "pale" ale, stout, and porter (the two last are not identical) are fully discussed, and a bibliography and appendix invite the earnest student to further knowledge. In fact, this volume, like others of the series, offers to the inquiring layman, in the words of the *Spectator*, the hardly earned products of technical and specialist research.

This Journal prides itself on being among the first to direct the attention of medical men to the immense significance of pyorrhœa alveolaris. A work under that title has just been issued by the C. V. Mosby Company, of St. Louis, at $2, the author being Friedrich Hecker, B. Sc., D. D. S., A. M., M. D. The disease is fully discussed from clinical and therapeutic standpoints and the various bacteriological steps required are carefully described. The treatment advised is the best known and comprises both instrumentation and the use of vaccines. In the title, the common and irritating mistake is made of suppressing the diphthong, although the following adjective shows plainly that the Latin form of the word is intended. Really editors should respect the spelling of a dead language.

Doctor Sandert, in the guise of a general practitioner, and a specialist under the name of Sir Wilfred Gower play important roles in a melodramatic story in the January *Strand*, The Corot Landscape, by Martin Swayne. That will amuse the doctors, while The Secret of Smart Dressing, by Gordon Meggy, beautifully illustrated, will entertain and instruct their wives. There is also a good story for lawyers, The Winning Move, by Raymund Allen.

Meetings of Local Medical Societies.

Monday, *February 9th.*—Roswell Park Medical Club, Buffalo; Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Williamsburg Medical Society, Brooklyn; New Rochelle, N. Y., Medical Society.

Tuesday, *February 10th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); Associated Physicians' Economic League of New York; Medical Society of the County of Wyoming, N. Y.; Medical Society of the County of Schenectady, N. Y.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine); New York Obstetrical Society; Onondaga Medical Society.

Wednesday, *February 11th.*—Alumni Association of Norwegian Hospital, Brooklyn; Schenectady Academy of Medicine; New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx; Richmond County, N. Y., Medical Society; Dunkirk and Fredonia Medical Society; Rochester Academy of Medicine; Medical Society of the County of Montgomery, N. Y.; Brooklyn Medical Association.

Thursday, *February 12th.*—New York Academy of Medicine (Section in Pediatrics); Gloversville and Johnstown Medical Association; Physicians' Club of Middletown; West Side Clinical Society, New York; Brooklyn Pathological Society; Blackwell Medical Society of Rochester; Jenkins Medical Association, Yonkers; Society of Sanitary and Moral Prophylaxis, New York; Buffalo Ophthalmological Club; Jamestown Medical Society; Society of Physicians of Village of Canandaigua; Cayuga County Medical Society.

Friday, *February 13th.*—New York Academy of Medicine (Section in Otology); Society of Ex-Internes of the German Hospital in Brooklyn; Flatbush Medical Society, Brooklyn; Eastern Medical Society of the City of New York; Society of Alumni of St. Luke's Hospital, New York.

Saturday, *February 14th.*—New York Association of the Medical Reserve Corps of the United States Army.

Official News.

United States Public Health Service:

Commissioned and other officers of the United States Public

Carrington, P. M., Surgeon. Directed to proceed to San Francisco, Cal., when necessary, in the investiga-

tion of the migration of tuberculous persons in interstate traffic. **Collins,** G. L., Passed Assistant Surgeon. Directed to proceed to Hindman, Ky., and report to Surgeon John McMullen for duty in connection with the prevention of trachoma. **Gillespie,** J. M., Assistant Surgeon. Relieved from duty at Hongkong, China, and directed to proceed to the San Francisco quarantine, Angel Island, Cal., and report arrival to bureau. **Grubbs,** S. B., Surgeon. Directed to proceed, at such times as may be necessary, to Boston, Mass., for observation and consultation regarding reexamination of aliens at that port. **Lavinder,** C. H., Surgeon. Directed, at the request of the commissioner general of immigration, to make an examination of an alien, Elje Hoffman, now undergoing treatment at Garfield Hospital. **Lloyd,** B. J., Surgeon. Directed to confer with the secretary of the Washington State Board of Health, relative to typhoid fever outbreak; also to visit cities in the vicinity of Seattle, Wash., on business in connection with measures taken for the suppression of bubonic plague. **Ridlon,** J. R., Passed Assistant Surgeon. Detailed for duty at Philadelphia, Pa., under Senior Surgeon Fairfax Irwin. **Roberts,** Norman, Passed Assistant Surgeon. Detailed for duty at the State quarantine station, Marcus Hook, Pa., in connection with the fumigation of vessels and quarantine operations on the Delaware River. **Robinson,** D. E., Surgeon. Directed to proceed to Washington, D. C., and report to the director of the hygienic laboratory for temporary duty precedent to special field studies of tuberculosis. **Von Ezdorf,** R. H., Surgeon. Directed, on request of the State Board of Health of North Carolina, to proceed to Raleigh, N. C., for conference and to devise plans for antimalaria investigations in that State during the coming season; also directed to stop at Columbia, S. C., en route to attend the meeting of the Southeastern Sanitary Association to be held there February 12 to 13, 1914. **Wertenbaker,** C. P., Surgeon. Authorized to accompany battleship *Ohio* from Charleston quarantine station to the Delaware Breakwater quarantine station and thence to the League Island Navy Yard, Philadelphia, Pa. **White,** J. H., Surgeon. Authorized to proceed to Chicago, Ill., February 7, 1914, to attend meeting of the committee of the American Medical Association. **Woodward,** R. M., Surgeon. Granted two months' leave of absence from January 19, 1914, on account of sickness.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending January 31, 1914

De Witt, Wallace, Major, Medical Corps. Granted leave of absence for seven days. **Ford,** C. S., Major, Medical Corps. Granted sick leave of absence for two months; at expiration will report to the commanding officer of the Walter Reed General Hospital, Washington, D. C., for observation and treatment. **Gosman,** G. H. R., Major, Medical Corps. Granted leave of absence for three months with permission to go beyond the sea. **Kinard,** K. W., First Lieutenant, Medical Corps. Ordered to Fort Sam Houston, Texas, for temporary duty. **Philips,** H. F., First Lieutenant, Medical Reserve Corps. Ordered to Presidio, Texas, for temporary duty. **Quintant,** Edward, First Lieutenant Medical Reserve Corps. Resignation of commission in Medical Reserve Corps accepted, effective January 26, 1914. **Turnbull,** S. J., First Lieutenant, Medical Corps. On January 26th is relieved from treatment at the Walter Reed General Hospital, Washington, D. C., and from duty with Ambulance Company No. 3, Second Division, and will proceed to Fort H. G. Wright, N. Y., and report in person to the commanding officer of that post for duty.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending January 24, 1914:

Baker, B. G., Acting Assistant Surgeon. Detached from the Naval Recruiting Station, Chicago, Ill., and ordered to the Naval Recruiting Station, Kansas City, Mo. **Dorsey,** B. H., Passed Assistant Surgeon. Detached from Camp Elliott, Canal Zone, and ordered to the *Connecticut*. **Farley,** H. R., Acting Assistant Surgeon. Appointed an acting assistant surgeon from January 19, 1914. **McClelland,** N. M., Assistant Surgeon, Medical Reserve Corps. Ordered to the Navy Yard, Charleston, S. C. **Rose,** M. E., Acting Assistant Surgeon. Detached from the Naval Recruiting Station, Kansas City, Mo., and granted sick leave.

Births, Marriages, and Deaths.

Married.

Emerson—Franklin.—In New York, on Saturday, January 10th, Dr. Linn Emerson, of Orange, N. J., and Miss Marie Franklin. **Hudson—Mulford.**—In West Point, Va., on Saturday, January 17th, Dr. Alvah S. Hudson and Mrs. J. L. Mulford. **Reynolds—Fitzgerald.**—In Richmond, Va., on Monday, January 12th, Dr. John Gilmer Reynolds, of Chatham, and Miss Blanch Edith Fitzgerald. **Wessel—Roethemeier.**—In Herman, Mo., on Sunday, January 18th, Dr. W. C. Wessel and Miss Anna Roethemeier.

Died.

Barrows.—In Utica, N. Y., on Monday, January 19th, Dr. Frederick E. Barrows, aged sixty-four years. **Belisle.**—In West Rutland, Vt., on Friday, January 16, Dr. L. George Belisle, aged thirty-five years. **Bourke.**—In West Sayville, L. I., on Thursday, January 22d, Dr. Godfrey R. Bourke, aged sixty-eight years. **Bowman.**—In Millersburg, Pa., on Tuesday, January 13th, Dr. John F. Bowman, aged seventy-three years. **Brooks.**—In Lake Toxaway, N. C., on Saturday, January 17th, Dr. Whitfield Brooks, aged seventy-four years. **Buck.**—In Chicago, Ill., on Friday, January 16th, Dr. James P. Buck, aged fifty-three years. **Cloutier.**—In Holyoke, Mass., on Monday, January 19th, Dr. Felix J. Cloutier, aged fifty years. **De Montluzin.**—In Bay St. Louis, Miss., on Friday, January 16th, Dr. Roger De Montluzin, aged forty-seven years. **Dew.**—In New York, on Monday, January 26th, Dr. James Harvie Dew, aged seventy years. **Feil.**—In Denver, Col., on Saturday, January 17th, Dr. Gustave R. Feil. **Fowler.**—In Pelham Manor, N. Y., on Thursday, January 29th, Dr. Edward P. Fowler, aged eighty years. **Garlington.**—In Cedartown, Ga., on Monday, January 19th, Dr. T. R. Garlington, aged fifty-eight years. **Hassard.**—In Thomaston, Conn., on Wednesday, January 21st, Dr. Robert C. Hassard, aged seventy-two years. **Holden.**—In Omaha, Neb., on Friday, January 23d, Dr. Horace Holden, aged forty-three years. **Hopkins.**—In Seneca, S. C., on Thursday, January 15th, Dr. John Hopkins, aged eighty-one years. **Jackson.**—In Constitution, Ga., on Sunday, January 18th, Dr. J. F. Jackson. **Lincoln.**—In Mondovi, Wis., on Sunday, January 25th, Dr. W. H. Lincoln, aged fifty-seven years. **Miller.**—In St. Louis, Mo., on Tuesday, January 20th, Dr. James L. Miller, aged fifty-three years. **Paschall.**—In San Antonio, Texas, on Monday, January 19th, Dr. John Graham Paschall, of Dallas, Texas, aged thirty-three years. **Pomeroy.**—In Stuyvesant Landing, N. Y., on Friday, January 23d, Dr. George P. K. Pomeroy, aged fifty-eight years. **Poston.**—In Chattanooga, Tenn., on Monday, January 19th, Dr. J. M. Poston, of Cleveland, Tenn. **Reilly.**—In Chicago, Ill., on Friday, January 16th, Dr. John L. Reilly. **Ritchey.**—In Nashville, Tenn., on Wednesday, January 21st, Dr. A. L. Ritchey, aged seventy-three years. **Smith.**—In Whitesboro, N. Y., on Sunday, January 25th, Dr. Charles E. Smith, aged seventy-seven years. **Stine.**—In Philadelphia, on Friday, January 23d, Dr. Luther K. Stine, aged seventy-seven years. **Webb.**—In St. Louis, Mo., on Wednesday, January 21st, Dr. William Webb, aged eighty years. **Wood.**—In Hazlehurst, Miss., on Friday, January 16th, Dr. H. Wood. **Wright.**—In New Britain, Pa., on Saturday, January 24th, Dr. Elmer W. Wright, aged seventy-two years.

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Original Communications.

THE POSITIVE AND NEGATIVE DIAGNOSIS OF GASTRIC CANCER BY MEANS OF SERIAL ROENTGENOGRAPHY.

BY LEWIS GREGORY COLE, M. D.,
New York,
Professor of Röntgenology, Cornell University Medical College.

The value of an early positive diagnosis of gastric cancer is evidenced by Mayo's recent statement[1] that thirty-six per cent. of gastric carcinomas have been cured by surgical procedure. His further statement that an early diagnosis can be made only by surgical exploration is paradoxical, as it eliminates the possibility of such diagnosis in the majority of cases, because patients will not usually submit to a laparotomy until they have definite or severe symptoms, and such symptoms do not generally occur until the process has passed beyond the incipient stage.

The negative or positive diagnosis of gastric carcinoma may be made with as great a degree of accuracy by serial röntgenography as by exploratory laparotomy, as a study of 616 cases has shown. Moreover, this examination may be made without risk to the patient. Therefore patients presenting very slight symptoms would welcome such an examination, while absolutely refusing an exploratory operation.

The more extensive growths may be detected readily by röntgenoscopy (fluoroscopy) or by two or three röntgenograms. But the negative or positive diagnosis of small, indurated ulcers or early carcinomas necessitates a careful study of several series of röntgenograms, made with the patient in both the prone and erect postures, and at various intervals after the ingestion of barium and buttermilk. The author is not content with less than forty röntgenograms, and frequently makes seventy or eighty, which are set up where they may be studied individually and collectively, and superimposed for comparison. If expedient, they are reduced in size and reproduced cinematographically. The examination is necessarily an expensive one, but like surgery it may be placed within the means of all patients. The technic of serial röntgenography has been described in previous communications, and may be omitted here.

The röntgenological diagnosis of new growth of the stomach described herein is based on permanent, constant deformities in the gastric wall, which interfere with the systole and diastole of the stomach, and the progression pylorusward of the peristalsis. These lesions may be detected at practically any stage of development, and in many cases they may be differentiated with a reasonable degree of certainty. In this communication carcinoma, adenoma, myoma, sarcoma, and indurated ulcer will be regarded as gastric cancer, because the surgical indications for all of them are the same, and one can be differentiated from the other only by a careful microscopical examination of the specimen after its removal. In many instances the surgeon does not know whether he has cured a case of cancer or prevented one until he receives his pathological report. Such growths should therefore be considered malignant until proved otherwise.

Syphilis of the stomach sometimes resembles cancer so closely that it would be a wise precaution to have the Wassermann test made in every case to eliminate the possibility of confusion. There are, however, röntgenological findings which have enabled me to make the diagnosis of gastric syphilis in cases where I had not suspected such a condition; and the subsequent history and Wassermann reaction have corroborated my diagnosis.

The röntgenographic appearance of carcinoma of the gastric wall depends upon the nature and form of the growth. Where a large rounded mass projects into the stomach it prevents the bismuth from filling this portion of the lumen. The area of involvement is constant in size, shape, and position. (Figs. 2 and 4.) If the growth occupies the body or fundus of the stomach, obstruction and gastric retention do not result.

Multiple nodular growths, reaching out like peninsulas and islands into the normal tissue, present a peculiar appearance of fingerprints. (Figs. 5 and 18.) They are likely to occur on the posterior wall, and cause an obstruction. (Fig. 5.) Victims of this type of cancer are singularly free from symptoms.

If the growth is annular, progressing in the form of a cone, the stomach has the appearance of a funnel, drawn out toward its apex in a small constricted lumen, containing bismuth, sometimes converging to the point of complete obliteration. (Fig. 8.) The cone or floor of the funnel may be filled and emptied during each gastric cycle by the peristalsis of the normal portion of the stomach. The peristaltic contractions cease abruptly in their progress pylorusward when they reach the involved area. A wormeaten appearance with overhanging edges sometimes indicates the line of invasion. (Fig. 19.) The constricted lumen remains constant

[1] Meeting of the A. M. A., Minneapolis, 1913.

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in size, shape, and position, and is devoid of rugæ, which are present in normal tissue, and which are exaggerated in cases of adhesions and pylorospasm.

The sclerotic or scirrhous type of cancer (Figs. 13 and 14) may involve large areas of the wall of the stomach without protruding into its lumen. In such cases the position of the stomach is usually high, and frequently there is an area of immobility on the lesser curvature. The most notable characteristic is the absence of peristaltic contractions, or an attempt at peristalsis, which produces unusually broad waves, showing a lack of pliability of the affected tissue. The point to observe in these cases is that when the serial plates are matched over each other the contour and detail of the involved area is exactly the same in all the röntgenograms.

Extensive inoperable tumors may occur in the pars media without causing any obstruction or dilatation. In such cases the stomach usually evacuates itself with abnormal rapidity. In cases of extensive carcinoma, involving the entire pars pylorica and pars media, inefficient peristalsis may prevent the gastric dilatation, which one would ordinarily expect. If the growth involves the pylorus and diminishes its lumen, gastric dilatation and stasis of food occur early. (Fig. 20.)

Small, round, punched out ulcers of the pars pylorica frequently have the röntgenological appearance of duodenal ulcers, the pathology of which has been described by Moynihan and Codman. (Figs. 17A and 17B.) In such cases surgery is undoubtedly indicated. Whether the lesion is malignant or nonmalignant can be positively determined only by microscopical examination of the specimen.

Röntgenologically, tumors of the stomach may be grouped into two classes, inoperable and operable, according to their size, location, and state of mobility. Unfortunately many cases come under the first or inoperable group, because the symptoms of incipient cancer are often so mild that the patient does not consult a physician, or if he does seek medical advice, the physician watches the case, perhaps carefully, until classical symptoms of cancer appear. The röntgenological findings in nearly all such instances have shown tumors which were beyond the stage for satisfactory removal. Even in advanced cases, the röntgenological examination is of great value. One can determine the location and extent of the tumor, whether a gastroenterostomy is necessary, and if it is necessary, whether enough healthy gastric wall remains to make the operation possible, and whether a posterior gastrointestinal anastomosis is possible, or whether an anterior gastroenterostomy must be resorted to. In the great majority of inoperable cases surgical procedure, particularly exploratory operation, is thus rendered unnecessary, and the patient is saved the inconvenience, expense, and suffering of an operation. This in itself would justify a most careful röntgenological examination.

Most of the early carcinomas and indurated ulcers considered here have been found in the practice of a few of those physicians who have all doubtful cases examined röntgenologically. By such procedure, and only by such procedure, can malignant gastric lesions be detected in their incipiency. These few physicians reap the reward for their confidence in röntgenological examination by making use of an early and accurate diagnosis, for which they themselves get the credit, so far as the patient is concerned.

A study of a number of cases, classified as above, will best illustrate the value of this method of diagnosis. The röntgenological findings and diagnosis are extracts from the original reports. But the question of the advisability of surgical procedure has been considered in the light of the subsequent clinical histories or surgical findings, and the conclusions following the descriptions of the cases, are drawn from a retrospective study of the entire series of cases in all their aspects.

Case I. Referred by Dr. William Van Valzah Hayes. *Röntgenological findings and diagnosis* (Fig. 1): The gastric lumen expanded and contracted uniformly, exhibiting the three cycle type of unobstructed peristalsis. The cap was well filled and corresponded perfectly in size and contour with the terminal portion of the pars pylorica. The space of three sixteenths inch, dividing the cap from the stomach, showed the smooth, clear cut outlines of a normal pyloric sphincter, except for the slight fold on the lesser curvature, a finding which has so frequently proved of no pathological significance, that it may be considered of congenital origin. The lumen of the pyloric sphincter was centrally located with respect to both its gastric and duodenal surfaces.

Conclusions: This röentgenogram is introduced to illustrate an uninvolved stomach, pyloric sphincter, and cap, with which the pathological findings herein reported may be compared.

EXTENSIVE GROWTHS, ONE LARGE TUMOR.

Case II. Referred by Dr. William Van Valzah Hayes. The patient was a woman in robust health, with few gastric symptoms, and none of the classical symptoms of carcinoma. There was no gastric retention.

Röntgenological findings and diagnosis (Fig. 2): A great mass occupied the pyloric end of the greater curvature, projecting into the gastric lumen so that it was reduced to about one half inch in diameter. The röntgenologic diagnosis was extensive growth of the stomach, probably carcinoma.

Surgical findings: The surgeon found an immense growth, as large as two fists. Half of it involved the lumen of the viscus, and the other half extended beyond the normal contour of the stomach wall. Unfortunately the operation was unsuccessful, and the patient died.

Conclusions: The tumor was obviously too extensive to offer a good opportunity for removal, and as there was no obstruction, gastroenterostomy was not indicated. In cases of this sort, unnecessary operation may be prevented by a röntgenographic examination, and the patient may live for some time without severe symptoms.

Case III. Referred by Dr. W. Gilman Thompson. The general health of this patient was good. His gastric symptoms, which had been present for four years, were attacks of pain in the left side, occurring every few days and lasting several hours, loss of appetite, and a reduction in weight of twenty pounds in six weeks.

Röntgenological findings and diagnosis (Fig. 3): Two indentations presented on the lesser curvature, about three inches from the pylorus, resembling peristaltic contractions, except that their position and size were constant. Their failure to relax and contract, and to move pylorusward during the gastric cycle, and the fact that their contour presented slight indentations suggested a malignant nodular growth. The patient refused operation and died within six months.

Conclusions: The location of the tumor rather than its size rendered this case unfavorable for removal. It offered the surgical difficulties encountered in Case XVI. As there was no evidence of pyloric obstruction or gastric retention, a palliative gastroenterostomy was not indicated.

Case IV. Referred by Dr. William Seamans Bainbridge. An exploratory laparotomy had been performed on this patient by a Philadelphia surgeon, who found an "inoper-

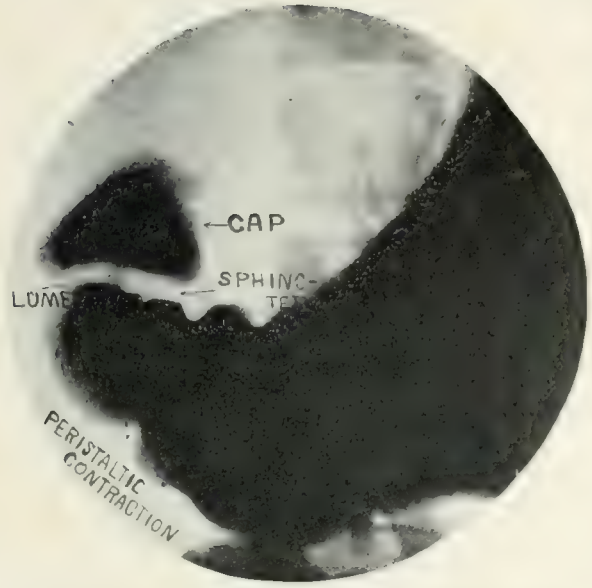


FIG. 1.—Showing uninvolved stomach, pyloric sphincter, and cap (Case I).

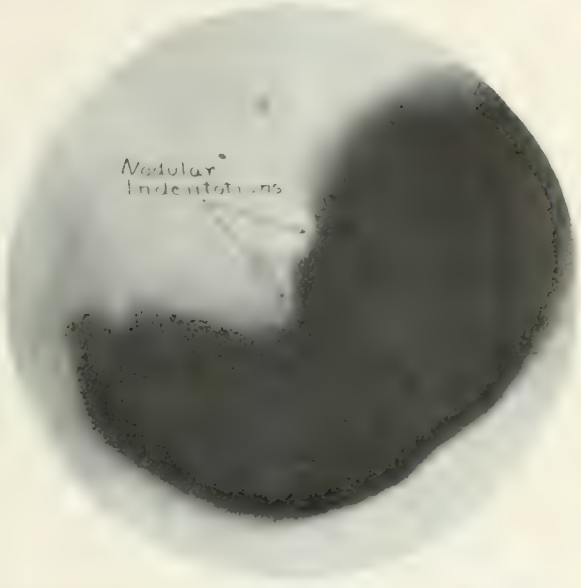


FIG. 3.—Showing [illegible] growth.

able cancer of the stomach." No specimen was taken. It was prophesied that the patient would die in six weeks. Several months later the patient was still living and the symptoms were no more severe. Röntgenography was employed to determine why the surgeon's prophecy had not been fulfilled.

Röntgenological findings and diagnosis (Fig. 4): The lumen of the pars pylorica was constricted in funnel shape to one quarter inch in diameter at the narrowest point. The posterior wall of the greater curvature was distorted for a space of three inches from the pyloric sphincter and indented by two constant nodules. The lesser curvature appeared to be involved only slightly.

Conclusions: The lumen of the stomach was patent. The interesting question is—was the growth benign or malignant?

EXTENSIVE NODULAR GROWTHS.

CASE V. Referred by Dr. Alexander Lambert. The patient's only gastric symptom was eructation of gas.

Röntgenological findings and diagnosis (Fig. 5): This case was referred with colonic symptoms, but I followed the procedure, which I have since adopted as a routine, i. e., a complete gastrointestinal examination. An inoperable carcinoma was thus revealed, where there was not the slightest suspicion of such a condition. The whole gastric lumen was distorted and constricted. It was considered impossible that so extensive a growth should cause no symptoms.

Surgical findings: Surgery relieved the colonic symptoms and confirmed the röntgenological diagnosis. Symptoms of gastric carcinoma did not appear until several months later.

Conclusions: There was no röntgenological indication for operation on the stomach, as the growth was too extensive for removal, and a gastroenterostomy was unnecessary. A posterior gastroenterostomy would have been impossible. The röntgenographical examination of the colon showed that the patient's symptoms were due to adhesions of the first portion of the transverse colon, entirely independent of the gastric carcinoma.

CASE VI. Referred by Dr. Max Einhorn. *Röntgenological findings and diagnosis* (Fig. 6): The röntgenological report, made at the time of the examination, read: "From a study of the plates one is justified in making a diagnosis of new growth of the pyloric end of the stomach,

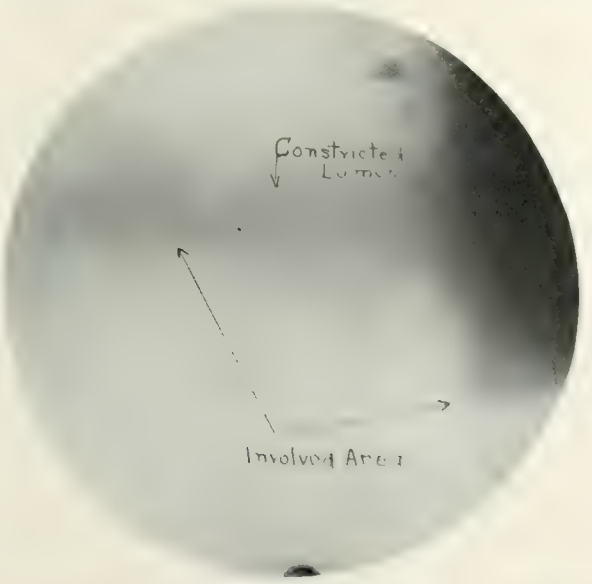
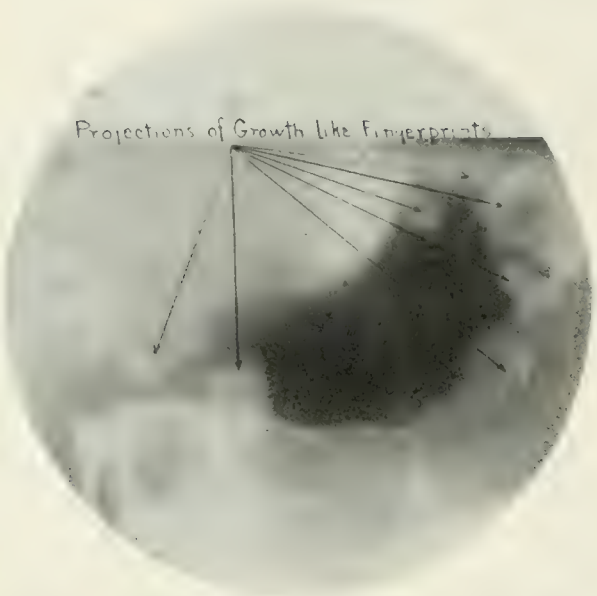


FIG. 2.—Showing constant area of involvement, [illegible] carcinomatous (Case II).



FIG. 4.—[illegible]



Another fingerprint appearance on posterior wall. Inoperable carcinoma (Case V).

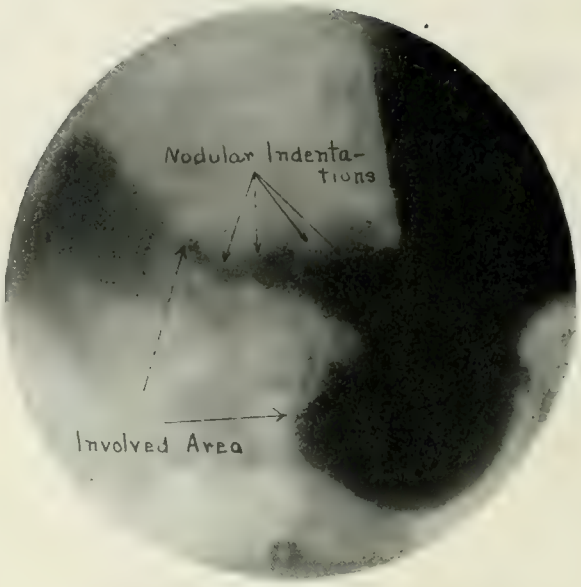


Fig. 7.—Adenocarcinoma of pylorus (Case VII).

the lumen being almost completely obstructed for a distance of 2.5 or 3 inches."

Surgical findings kindly reported by Dr. William H. Mayo: "Patient had two ulcers, one in the stomach and one in the duodenum. The ulcer in the stomach was indurated and adherent to the pancreas. There was marked obstruction. There was a peculiar soft tumor four or five inches from the origin of the jejunum, rendering an anterior gastroenterostomy necessary. The ulcer in the stomach was almost continuous with the one in the duodenum. While a good many glands were found to be involved, we were unable to positively establish malignancy. There were also many nodules in the liver, apparently secondary to the original growth in the stomach."

Conclusions: Here was an indurated ulcer of the stomach, with extensive adhesions to the pancreas and much glandular involvement, and a nodular growth on the liver, yet malignancy was not established by an exploratory laparotomy at a clinic where there was every facility for making a diagnosis by such means. Why should the röntgenologist be expected to differentiate between malignant and nonmalignant tumors of the stomach if malignancy cannot be established by exploratory operation and pathological examination?

The extensive involvement of the pars pylorica and pars media, with adhesions to the pancreas, which the röntgenograms demonstrated, was another good reason for not doing a posterior gastroenterostomy.

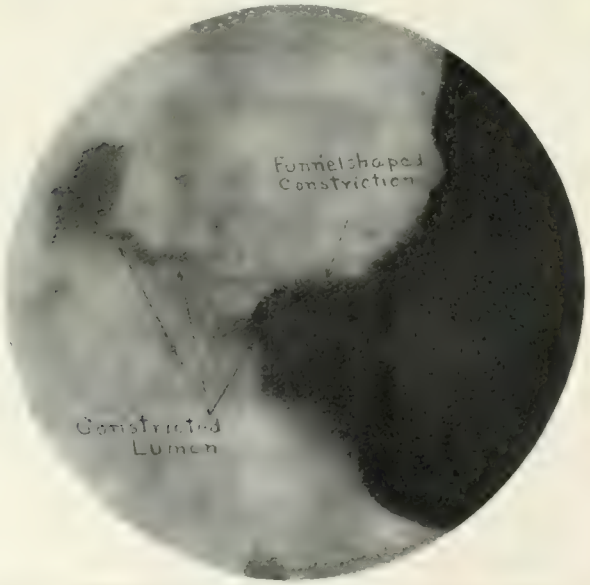
EXTENSIVE ANNULAR GROWTHS.

CASE VII. Referred by Dr. Maurice H. Gross. *Röntgenological findings and diagnosis* (Fig. 7): An annular growth occupied the pars pylorica, leaving a remnant of lumen about one half inch in diameter along the lesser curvature. Its outline, devoid of peristalsis, presented constant nodular deformities on both curvatures, and justified a diagnosis of malignancy.

Surgical findings, by Dr. A. A. Berg: "A pylorectomy and gastroenterostomy for adenocarcinoma of the pylorus were performed."

Conclusions: This is the most extensive of the growths herein described for which pylorectomy has been performed successfully. Doctor Berg writes that the patient is free from symptoms seventeen months after the operation.

CASE VIII. Referred by Dr. Max Einhorn. *Röntgenological findings and diagnosis* (Fig. 8): The lumen of the pars pylorica and pars media was constricted to a diameter



[illegible] of stomach and [illegible] not established.



FIG. 8.—Funnel appearance, verging to obliteration. Extensive annular carcinoma (Case VIII).



FIG. 9. Extensive inoperable carcinoma (Case IX)

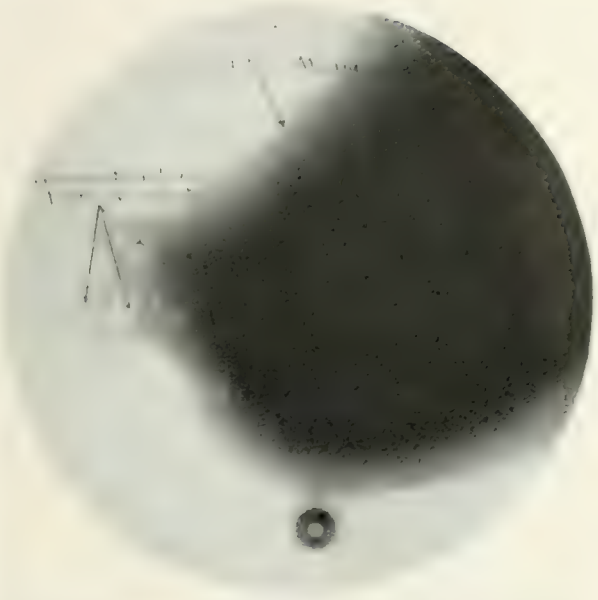


FIG. [illegible] (Case XI)

of one quarter inch, expanding in funnel shape where it joined the apparently uninvolved cardiac region. The lesion was diagnosed as an extensive annular carcinoma, requiring immediate surgical procedure.

Subsequent history: Five months after the röntgenological examination the patient wrote that his condition was somewhat improved, and that he was going to the mountains of Arizona to recuperate. Three months later, after having lost nine months of valuable time, he was operated upon, and the röntgenological diagnosis was confirmed, unfortunately too late even for a gastroenterostomy.

Conclusions: Lack of cooperation between the patient, his physician, and the röntgenologist deprived this man of the valuable information derived from the examination. A proper demonstration of the röntgenograms would have proved to him beyond any question of doubt the conditions which existed.

CASE IX. Referred by Dr. William Van Valzah Hayes and Dr. Theodore Bailey. The patient was a woman, aged forty-four years, who had had a poor digestion, and constipation for thirty years. For a year she had complained of constant belching and entire lack of appetite. In three months she had lost thirty pounds. A month previous there had been a slight hematemesis.

Röntgenological findings and diagnosis (Fig. 9): The lumen of the stomach, from the cap to the pars media, was constricted to one quarter inch in diameter by a growth, which apparently extended also posteriorly along the lesser curvature up toward the cardia. It was diagnosed as an inoperable carcinoma.

Surgical findings: The surgeon found a carcinoma so extensive that an anterior gastroenterostomy could not be performed.

Conclusions: The growth was so extensive that it was not advisable to attempt even an anterior gastroenterostomy. The lumen of the stomach was of sufficient size to allow fluids and semisolids to pass into the duodenum, but as the digestive function of the stomach was entirely destroyed, carbohydrates and predigested proteids constituted the proper diet.

CASE X. Referred by Dr. John Douglas. *Röntgenological findings and diagnosis* (Fig. 10): The greater and lesser curvatures, from the cap to the fundus, were denticulated by the inroads of a growth, which so diminished the lumen that it tapered out to a mere point at the pyloric

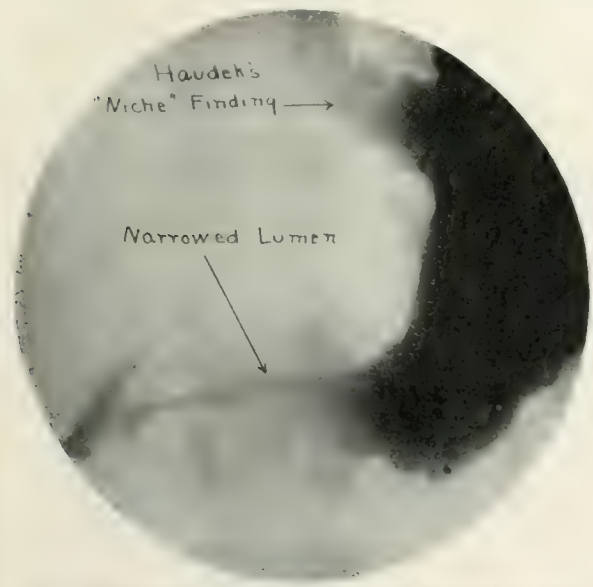


FIG. 10. Growth similar to that shown in Fig. 9 (Case X)

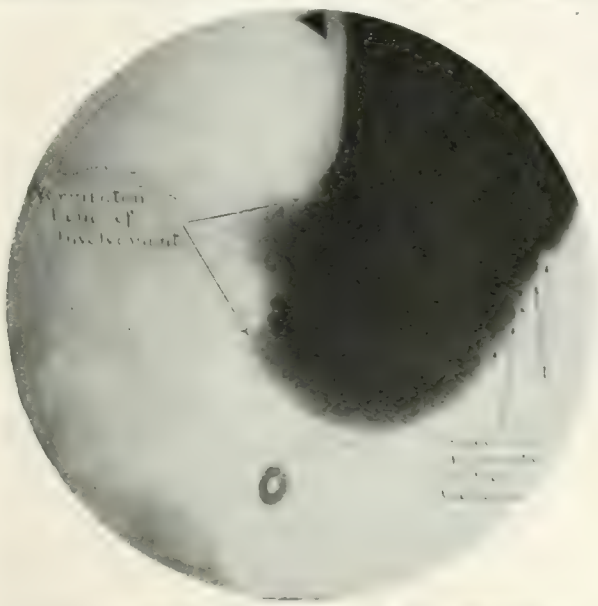
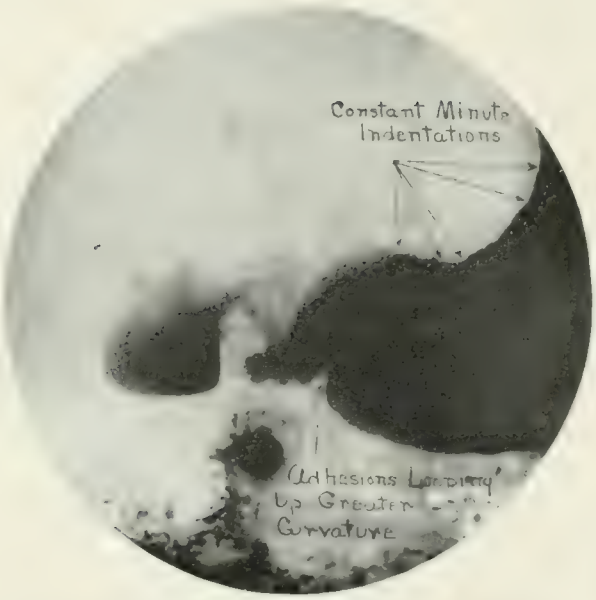


FIG. 12. Extensive carcinoma in [illegible] (Case XII)



[illegible] Scirrhous type of cancer, inoperable (Case XIII).

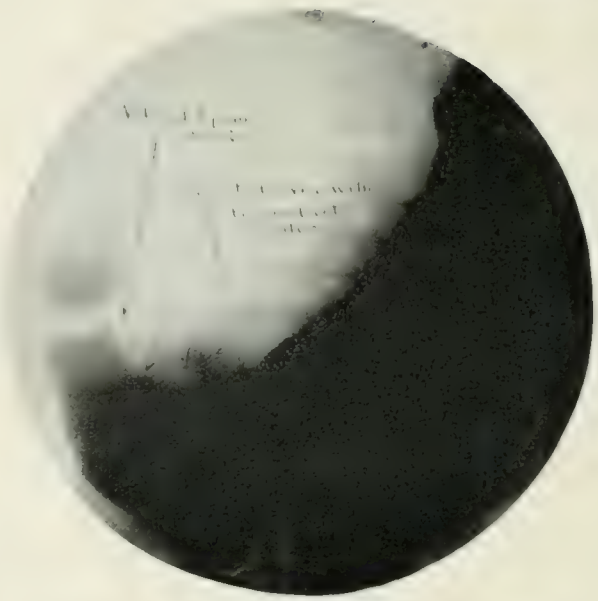


Fig. 11.—Indurated gastric ulcer, no signs of malignancy (Case XV).

sphincter. On the lesser curvature near the fundus a small bismuth shadow projected from the adjacent mass, as if in a pocket, resembling Haudek's "niche" findings for perforating ulcer. In this instance the phenomenon accompanied an extensive malignant growth.

Conclusions: As the growth was similar to the one just described, which proved too extensive to provide space even for an anterior gastroenterostomy, I advised against operation.

Case XI. Referred by Dr. Carlyle E. Sutphen, Jr. *Röntgenological findings and diagnosis* (Fig. 11): The röntgenograms showed the typical nodular indentations with wormeaten edges, which are characteristic of carcinoma. The lumen of the pars pylorica was so narrowed as to cause pyloric obstruction and dilatation of the stomach.

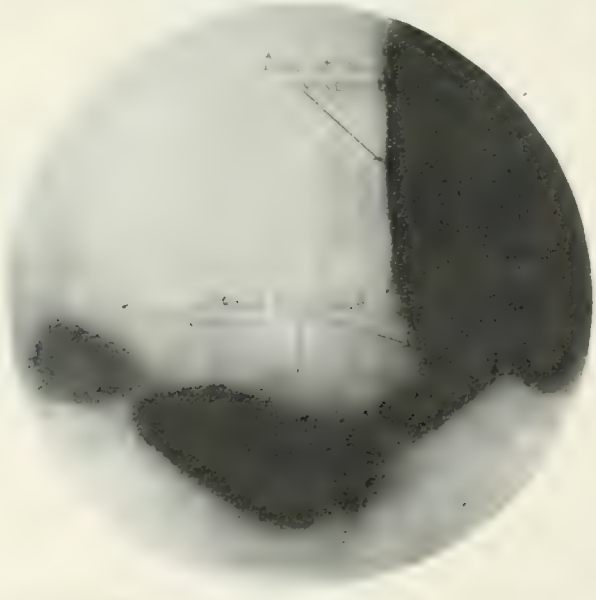
Surgical findings, by Dr. Carlyle E. Sutphen, Jr.: Carcinoma of the pylorus, involving the greater omentum and transverse colon, causing almost complete obstruction. As a posterior gastroenterostomy was impossible, an anterior gastroenterostomy was performed. This afforded only temporary relief.

Conclusions: Unfortunately this is but one of the many cases which are submitted to the röntgenologist for diagnosis too late for permanent surgical relief, and after the growth has become so extensive that it is impossible to determine whether it originated in one wall or was annular at its incipiency.

Case XII. Referred by Dr. William Van Valzah Hayes. *Röntgenological findings and diagnosis* (Fig. 12): The pyloric portion of the stomach was almost completely occluded by a carcinoma as far back as the pars cardiaca, the greater and lesser curvatures of which showed a wormeaten contour.

Surgical findings, by Dr. John Wyeth and Dr. J. Prescott Grant: "An extensive carcinoma, involving most of the lesser curvature and gastrohepatic omentum; also much of the greater curvature. It was difficult to find space for a gastroenterostomy."

Conclusions: The growth was altogether too extensive to offer any hope of removal. The interesting point to determine was whether or not to attempt a gastroenterostomy. The small amount of normal tissue, which the röntgenograms defined with remarkable accuracy, as operation proved, would lead me in the future to urge against any attempt at surgical treatment, even a gastroenterostomy. Deaths immediately following operations immeas-



[illegible] Scirrhous cancer of pylorus, causing a large ulcer, inoperable.



Fig. [illegible] Indurated ulcer, probably malignant (Case XVI).

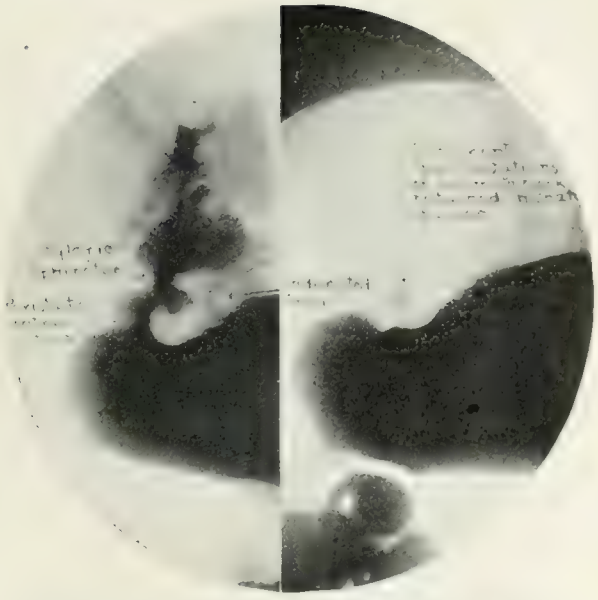


FIG. 17A.—Growth resembling duodenal ulcer, but of undetermined malignancy (Case XVII).

FIG. 17B.—Same as 17A.

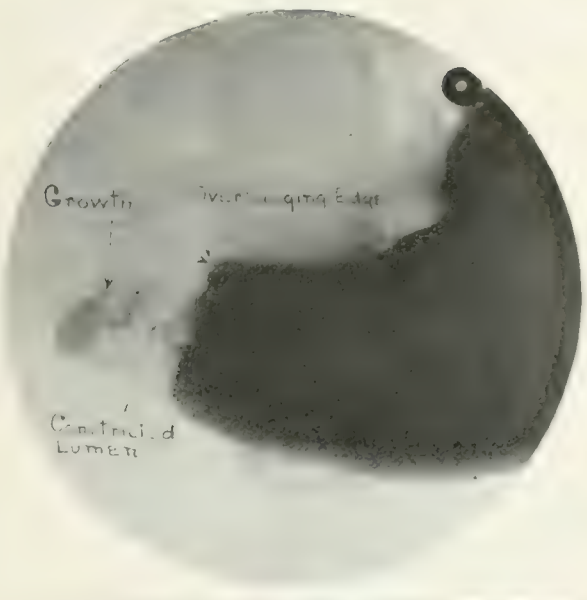


FIG. [illegible]—Showing [illegible] of pylorus (Case XIX).

urably increase the percentage of mortality from surgical procedure. Such fatalities prevent many patients from consenting to an operation which would mean their salvation.

SCLEROTIC GROWTHS.

CASE XIII. Referred by Dr. Frederick M. Johnson, Jr. The patient was a man, aged thirty-six years. His symptoms were of six months' duration, increasing markedly for two months. He complained of pain in the epigastrium and right hypochondrium, radiating through to the back, occurring fifteen to twenty minutes after eating, and especially at night. There was marked heartburn, and at times regurgitation. He had lost thirty pounds in two months.

Röntgenological findings and diagnosis (Fig. 13): Constant minute indentations along the lesser curvature indicated an inoperable carcinoma. Adhesions looped up a portion of the greater curvature of the pars pylorica.

Conclusions: The deformity of the cap and the permanent fold in the greater curvature, one inch from the sphincter, distract one's attention from the permanent, slight irregularities along the lesser curvature, where peristalsis was absent. They can be detected only by matching the röntgenograms over each other or reproducing them cinematographically. I could not conscientiously urge surgical procedure, and the patient refused operation.

CASE XIV. Referred by Dr. James D. Miller. The patient was a woman, aged fifty-nine years. For about two years she had been vomiting every day or two after meals, and upon arising in the morning. Hematemesis occurred several times. There were pain and distention over the whole abdomen. She complained of constant belching and regurgitation of liquid. There was a loss of about thirty pounds in six months. On three occasions her trouble had been diagnosed as gallstones.

Röntgenological findings and diagnosis (Fig. 14): The lumen of the stomach was constricted from the pyloric sphincter to the pars cardiaca, the greater and lesser curvatures being about equally involved. The lesion was most extensive at the pars media. The affected area was devoid of rugæ and wormeaten in appearance.

Conclusions: The sclerotic involvement of the pars

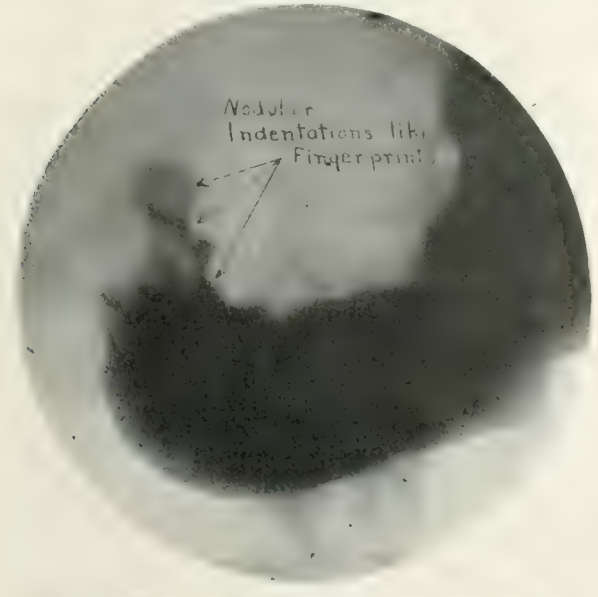


FIG. [illegible]—Fluid view of fingerprint appearance, multiple carcinoma (Case XVIII).



FIG. 20.—Malignant growth [illegible].

media was too extensive to make its removal possible, and as the size of the lumen was adequate, a gastroenterostomy was not indicated. Indeed it is doubtful if a gastroenterostomy could have been performed.

LOCALIZED AREAS OF INDURATION.

Case XV. Referred by Dr. C. G. Haven. The patient, a man, aged fifty-three years, stated that for three months he had had moderate pain or distress after eating. This was his only symptom, except frequent hiccoughing.

Röntgenological findings and diagnosis (Fig. 15): The röntgenograms revealed an area of infiltration for about two inches along the lesser curvature. Its depressed centre corresponded to descriptions of the "saddle" ulcer. Immediate surgical procedure was advised.

Surgical findings, by Dr. Charles H. Peck: Operation revealed an indurated gastric ulcer, but it was impossible to determine whether the lesion was a simple ulcer with indurated edges or an ulcer with carcinomatous degeneration at the base. A microscopical examination of the specimen showed no evidence of malignancy.

Conclusions: Neither the attending physician nor the surgeon found sufficient clinical evidence of any abdominal lesion to warrant an operation. But the röntgenological evidence was sufficiently definite to justify surgery, even in the absence of clinical evidence.

Case XVI. Referred by Dr. William Van Valzah Hayes. The patient was a woman, aged forty-six years. She com-



Fig. 14.—Gastric carcinoma (Case XVI).

plained of nausea, vomiting, and pain and soreness in the epigastrium. She had lost twenty-six pounds in five months.

Röntgenological findings and diagnosis (Fig. 16): The deep constant sulcus on the lesser curvature was diagnosed as an area of induration, requiring immediate surgical procedure, because, although it resembled a broad peristaltic contraction, it did not relax with diastole nor progress pylorusward.

Surgical findings, by Dr. William A. Downes: Indurated ulcer, believed to be malignant, about two inches in diameter, on the lesser curvature. It extended so far up toward the cardia that complete excision was not done, but a posterior gastroenterostomy was performed.

Conclusions: Note the constant crease on the greater curvature, and its absence on the lesser curvature, as in Case XIV. The interesting factor was that, although the tumor was only moderate in size, its location rendered its removal inadvisable. No section was taken for microscopical examination.

Case XVII. Referred by Dr. George Emerson Brewer. For three years the patient had experienced a raw, burning hunger pain in the epigastrium about two hours after eating.

Röntgenological findings and diagnosis (Figs. 17-A and 17-B): The pyloric sphincter was three times the normal thickness on both curvatures. On the lesser curvature a persistent bismuth fleck corresponded in size and shape with the crater of an ulcer (Fig. 17-B). The lumen of the sphincter entered the cap anteriorly. The cap, although somewhat irregular, was less involved than the stomach. The findings corresponded with Moynihan's and Codman's descriptions of postpyloric duodenal ulcer, and yet the ulcer lay nearer the gastric than the duodenal surface of the sphincter, so it might be classed as either postpyloric or prepyloric.

Surgical findings, by Dr. George Emerson Brewer: The ulcer was discovered in the first portion of the duodenum on its anterior surface, just beyond the pylorus. The pylorus was thickened and covered with adhesions, old and new.

Conclusions: This case demonstrates that the small, round perforating ulcers of the pars pylorica and the slight induration surrounding them give unmistakable röntgenological findings, indicating the size and extent of the lesion. Only a microscopical examination of the specimen can determine the question of malignancy.

SMALL NODULAR GROWTHS.

Case XVIII. Referred by Dr. James D. Nisbet. *Röntgenological findings and diagnosis* (Fig. 18): Three identations like fingerprints were observed near the pylorus. This group of nodules and the wormeaten character of the adjacent region formed a typical picture of the multiple carcinoma.

Subsequent history: Owing to the age of the patient and the fact that an eminent gastroenterologist stated that he found no evidence of a new growth, surgery was not resorted to. The patient improved under regulation of diet and medical treatment for about eight months, and then rapidly manifested unquestionable symptoms of carcinoma, from which she died fourteen months after the röntgenographical examination.

Conclusions: This case shows how careful diet and medical treatment may mask incipient malignancy until the growth becomes inoperable.

SMALL ANNULAR GROWTHS.

Case XIX. Referred by Dr. William Van Valzah Hayes. The patient was a middle aged woman, whose principal symptoms were gastric retention and loss of weight and strength.

Röntgenological findings and diagnosis (Fig. 19): The röntgenograms presented a typical picture of annular carcinoma of the pylorus, the lumen of which was constricted to one eighth inch in diameter, widening out in funnel shape at both ends where the uninvolved region adjoined. The conical areas had a wormeaten appearance.

Surgical findings, by Dr. Oliver C. Smith: A gastroenterostomy was safely performed, but the patient's condition did not justify a gastrectomy. A small growth was found, without glandular involvement, which the surgeon considered benign. However, the patient failed to gain strength and weight and the surgeon expressed the opinion that the röntgenological diagnosis was probably correct. Death ensued about two and one half years later.

Case XX. Referred by Dr. William Francis Honan. *Röntgenological findings and diagnosis* (Fig. 20): An annular growth circumscribed the pars pylorica, constricting the lumen for one and one quarter inch to so narrow a passage that only a hairline of bismuth was visible. As a result the stomach was immensely dilated. Successful removal of the growth was deemed possible, on account of its location, and prompt surgical interference was recommended.

Surgical findings, by Dr. William Francis Honan, agreed with the röntgenologist's even to the exact measurement of the tumor. He described it as "a malignant growth at the pylorus about one and one quarter inch wide." The patient was so emaciated from inanition that he did not recover from the operation.

Conclusions: This case was kept under careful observation for six weeks, and because of a practically normal

gastric secretion the possibility of gastric carcinoma was dismissed. Röntgenologically the growth was one that offered an exceptional opportunity for removal.

Case XXI. Referred by Dr. George Emerson Brewer. The patient presented the classical symptoms of gastric carcinoma.

Röntgenological findings and diagnosis (Fig. 21): An annular growth confined the pars pylorica. It was more extensive on the lesser than on the greater curvature and involved the anterior more than the posterior aspect. The lumen of this region was reduced to one eighth inch in diameter and presented an identical contour in all the röntgenograms of the series. Immediate surgery was recommended.

Surgical findings, by Dr. George Emerson Brewer: Operation proved that the röntgenological findings were entirely correct.

Conclusions: This carcinoma had escaped detection by plain röntgenography, when only two or three röntgenograms had been made. But when a large series of plates were studied individually and collectively, and matched over each other, there was no question of the presence of a growth requiring surgical procedure.

These few cases have been selected from a large number to illustrate various types of gastric carcinoma. While many of those omitted are of equal interest from a röntgenological and clinical standpoint, little would be gained by showing analogous cases.

A negative or positive diagnosis of gastric cancer has been made in each of the 616 cases examined by means of serial röntgenography, and in not a single case (to my knowledge),[2] where I have made a negative diagnosis of gastric cancer or indurated gastric ulcer, has surgery or autopsy proved the existence of such lesion, nor has surgery or autopsy failed to reveal a definite organic lesion, requiring surgical procedure, in any case, where a positive diagnosis of carcinoma or indurated ulcer has been made.

Six hundred and sixteen cases have been examined by serial röntgenography. Ninety-seven cases have been operated in. In ninety-four of the cases the röntgenological diagnosis was proved absolutely correct. In three cases the surgical findings were more or less at variance with the röntgenological findings.[2]

As evidence of the accuracy of this method these statistics are so remarkable as to appear almost incredible. It may be that some surgeons have failed to report errors, but such is not likely to be the case.[3]

Gastric cancer at any stage of development or indurated gastric ulcer may be detected by the use of serial röntgenography with as great a degree of accuracy as renal calculi or bone fractures may be detected by plain röntgenography. The time has come when a surgeon has no more right to operate on a chronic gastroduodenal lesion without a thorough röntgenological examination than he has to operate for a kidney stone or to treat a fracture without an x ray examination.

103 Park Avenue.

[2] In one case I made a diagnosis of adhesions from gastric ulcer with a possibility of a malignant base, and surgery showed that the lesion was due to cholecystitis with gallstones. In two cases the future clinical history indicated that the patients died of carcinoma. Upon further study of the röntgenograms of one of these cases, unquestionable evidence of malignancy presents at the cardia just on the edge of the plate. In the other case it is simply a question of röntgenological evidence versus clinical evidence.

[3] If the reader knows of any positive or negative diagnosis of gastric carcinoma, made by the author, which has since been disproved by surgery or autopsy, a report of it would be greatly appreciated.

NOTES ON SOME ANEURYSMS.

From the Pathological Museum of the Philadelphia General Hospital (Blockley).

By Robert A. Keilty, M. D.,

Philadelphia,

Instructor in Pathology, University of Pennsylvania; Pathologist, Philadelphia General and University Hospitals.

In the pathological museum of the Philadelphia General Hospital (Blockley) there are to be found many interesting specimens, and not the least interesting of these is the collection comprising the aneurysms. Without much difficulty I was able to gather seventy-one specimens illustrating nearly all the phases of the subject. This does not comprise the entire number because I am sure that careful search through the shelves would bring the total somewhere near a hundred.

These specimens range in time from 1860 on, the oldest being a dried specimen preserved by numerous coats of varnish. Following the varnished



Fig. 1. Posterior view of dilating and dissecting aneurysm of thoracic aorta with erosion of vertebræ. This erosion was marked enough to fracture the spinal column, producing angulation of the cord.

specimens, the fluid of election seems to have been alcohol and outside of their historical interest these specimens can be said to be of little value. This latter statement is probably truer in connection with some of the other groups than in connection with the aneurysms, because the gross anatomical features are still preserved. There are a number of specimens preserved in various fluids, the exact constituents of which I was unable to determine. They are mostly of an alcoholic nature, acting upon the hands much like strong acetic acid. Their main value seems to have been a preservative in its simplest sense. Of late years the Kaiserling method has enjoyed favor and many of these specimens are most beautifully preserved, especially as to color.

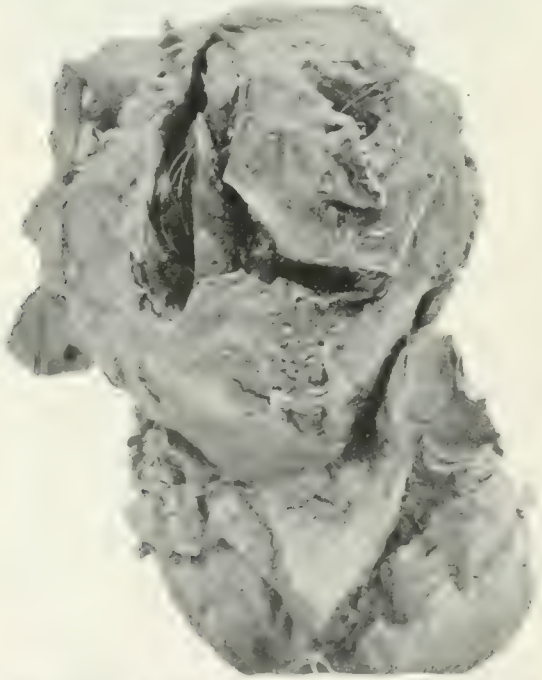
The difficulties encountered in looking up the records of the older specimens are well known, and unfortunately many of the best specimens have no

references at all. The histories of the later cases are quite typical and give all the classical symptoms as a rule. This is probably due to the fact that the hospital gets these cases only when far advanced.



Fig. 2.—Cylindrical aneurysm of ascending arch of descending and thoracic aorta with erosion of the vertebræ (by Foss).

They have occurred in patients forty years old and above, the oldest being seventy-one. The histories show the usual hard life, alcoholism, etc., so common to patients of this class. They seem to have been benefited by no one treatment, except possibly, by rest in bed. The effects of wiring from the four cases found would seem to be against this procedure. From a study of the clinical histories the cases were apparently worse after the wiring than before. The histories show most of the deaths to have been sudden, due to rupture, and few have had an intercurrent cause of death.



[illegible] Multiple aneurysm of ascending portion and arch [illegible] rupture. This aneurysm [illegible]

The classifications given in the standard textbooks hold as well as any in a study of these specimens. From them we still divide into two types, true and false; the dilating, fusiform, and cylindrical types as evidences of the true form, that is their coats are well preserved, while the saccular types belong to the false group. The larger the aneurysm the greater the tendency for its limiting membrane to be made up of fibrous tissue and the tissue upon which it may encroach. However, one of the smallest aneurysms occurred upon the first part of the ascending aorta, had an opening five mm. in diameter into a cavity about one cm. in diameter, and the bulge of the sac equalled its diameter. The



Fig. 4.—Same as Fig. 3, showing opening through aorta. At the point *A* there is a smaller opening into a second sac below.

cavity was filled with a clot and the limiting wall was extremely thin, apparently eroded into some of the softer structures near at hand.

There seems to be some confusion in the textbooks over the term varix. Aneurysmal varix used to describe a traumatic aneurysm in which there is some communication between the vein and artery with the production of an aneurysm, while varicose aneurysm describes a tumor mass between the artery and vein, or, on the other hand, an aneurysmal varix is a small vessel distorted like a varicose vein. Unfortunately there were no specimens illustrating this point. The nearest approach was a large cylindrical aneurysm of the innominate, which was in close apposition to the superior cava. It bore the same relation to the vein as it did to any of the other structures encroached upon.

Of the pathological complications, pressure, erosion, and rupture are the most important. Almost all of the specimens which had reached any size showed some type of erosion, and I am using the term in its broadest sense to include not only bony structures but soft tissues as well. The ruptures



FIG. 5. Two small aneurysms in the first part of ascending arch of aorta; *a*, dilating type; *b*, small saccular dilatation.

took place into the usual situations described, pleural cavities, lungs, etc.

In studying the post mortem records as to the pathology of the other parts of the body, chronic fibrous processes predominate. Valvular lesions of a sclerotic nature, with various types of atheroma and calcification of the aorta, are an almost constant factor. Nephritis of some form, usually chronic interstitial, was present. Cirrhosis of the liver was equally common. Pulmonary tuberculosis seems to have had its share in the number of complications, and one case occurred in a tabetic.

Following is a chart compiling a few statistics on the gross specimens. The total number examined was seventy-one. The points of occurrence, the types, the incidence of erosion, and rupture were noted. In this group of cases it will be seen that eighty-four per cent. occurred in the aorta. Osler reports 631 cases occurring over a period of thirty years at St. Bartholomew's Hospital in which 468 or seventy-four per cent. were of aortic origin. The similarity of result in a large number of cases of aortic occurrence may be assumed to make a percentage basis of comparison of a small number of cases fairly accurate. The one error in this series probably lies in the percentage of ruptures, which is too low. Without actual clinical notes this was impossible in the case of some of the specimens. The following table is a brief résumé of some of the most interesting cases:

SITES OF RECURRENCE.

		Percentage of heart
Aortic	60 cases	.84
Arch	40 "	.57
Ascending	16 "	.22
Transverse	13 "	.18
Descending	12 "	.17
Thoracic	13 "	.18
Abdominal	10 "	.13
Splenic	1 "	.01
Cerebral	1 cases	.01
Innominate	2 "	.02
External iliac	1 "	.01
Internal iliac	1 "	.01
Femoral	1 "	.01
Heart	4 "	.05

INCIDENCE OF RUPTURE.

Total	16 cases	.22
Lung	4 "	.05
Sternum	4 "	.05
Ribs	1 "	.01
Bronchi	2 "	.02
Esophagus	1 "	.01
Left pleura	1 "	.01
Abdomen	1 "	.01
Wired	4 "	.05

TYPES.

Saccular	24 cases	.33
Fusiform	5 "	.07
Cylindrical	1 "	.01
Dilating	9 "	.12
Stratified	6 "	.08
Multiple	8 "	.11
Dissecting	9 "	.12

INCIDENCE OF EROSION.

Total	32 cases	.45
Vertebræ	16 "	.22
Sternum	9 "	.12
Lung	6 "	.08
Ribs	5 "	.07
Esophagus	2 "	.02
Bronchi	2 "	.02
Trachea	2 "	.02
Pericardium	1 "	.01

CASE I. J. R., admitted November 30, 1901, died March 22, 1902. Clinical diagnosis, myocarditis and nephritis, pathological diagnosis, cardiac aneurysm of the left ventricle, arteriofibrosis of the kidneys, hemorrhagic infarction of the left lung. Description: The specimen was a heart opened through the left ventricle, the incision continuing into the aorta. The lower part of the left ventricular wall close to the septum showed a cuplike dilatation. The musculature was lost at this point with probable replacement by fibrous tissue. The possibility of infarction with organization and subsequent dilatation was a likely one.

CASE II. Specimen was a small and contracted heart evidently from an old person. The left ventricular wall below the anterior leaflet of the mitral showed a dilatation the size of a walnut. This dilatation involved the myocardium and was firmer grossly than the surrounding mus-

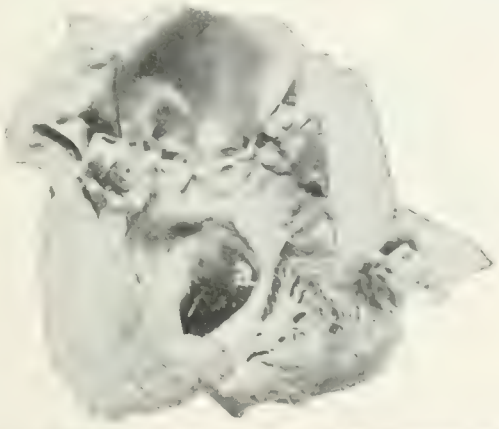
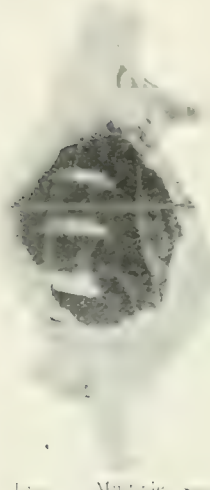


FIG. 6. Saccular [illegible] cavity at [illegible]

culature, probably from an infiltration of lime salts. The cavity contained a small amount of fibrin, some of which was partially organized.

CASE III. Above the aortic cusp line was an aneurysmal dilatation arising from the sinus of Valsalva extending

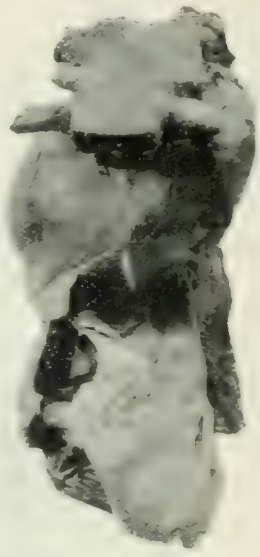
toward the right auricle into which it slightly bulged. The margins were irregular in outline and the aneurysm was 2.5 cm. in its long axis; 4.5 cm. above the aortic orifice was a similar opening on the superior aspect of the arch of the aorta. This opening measured 4 mm. in diameter, was rather regular and entered a sessile elevation measuring about one cm. in length. The limiting membrane was extremely thin and had without doubt been the seat of an erosion of the surrounding structures. This looked like an example of the rupture of a fatty atheromatous plaque, resulting in the formation of a miliary saccular aneurysm whose walls would necessarily from the beginning be made up of those parts adjacent to it.



[illegible] Musculo-skeletal [illegible] *a*, and dilating aneurysm of arch and thoracic aorta with erosion of vertebral column at two points.

Case IV. J. G., aged sixty-four years, white, male, admitted November 3, 1900, died January 28, 1901. Clinical diagnosis, aneurysm of the arch of the aorta. Death caused by rupture into the left pleura. Description: Left lung completely collapsed; beginning 5.5 cm. from the aortic margin was an aneurysmal dilatation directed upward and forward. When laid open the diameter was found to be 12.5 cm. The innominate, carotid, and subclavian arteries passed off from its superior and posterior aspects. This aneurysm showed a rupture into the pleura just at the margin of the pericardium. The rupture was irregularly lacerated, was three cm. long and the cavity contained partially organized clot which became continuous with more recently formed thrombi. The wall varied in thickness 2 to 5 mm. The aorta above and below was slightly atheromatous.

Case V. J. C., admitted March 26, 1909, died May 22, 1909. Clinical diagnosis, aneurysm of the aorta. Clinical history, patient complained of pain, dyspnea, cough, and expectoration. Pain in the chest and dyspnea were of one year's duration; chronic cough, becoming worse. Patient worked until four weeks before admission and had never been in bed. March 26th, left chest aspirated and three pints of clear serous fluid removed, affording relief. Physical examination: Metallic voice and ring to cough; tongue tremulous and coated; pulse high tension, regular, and not forcible. The left radial was stronger than the right. Chest bulged on the left side, unequal motion on the left, retarded, clavicular space prominent. Three areas of pulsation, seventh interspace midclavicular line on the left, upper anterior chest on the left, and the epigastrium. The heart extended from the right side of the sternum to beyond the nipple line, and from the clavicle to merging with abdominal dullness. Pulsation in the left upper chest was easily palpable. Tracheal tug present. Heart sounds were weak, most of them replaced by murmurs not transmitted The lungs showed dullness over the left upper and lower lobes, with the exception of a space in the axilla. Fremitus was diminished over the left lung. Both lungs had moist rales. April 12th: Pulsating mass larger and more noticeable. April 24th: Wired by Doctor Lavenson, 12 feet of gold wire used. The galvanic current, strength 5 milliamperes, passed for three minutes and increased five every three minutes for thirty minutes. A total of 60 maintained for ten minutes and reduced 10 milliamperes every three minutes. The anode was attached to the wire and the cathode to a plate beneath the loin. Pulsation less prominent during the operation; patient stood the treatment well and complained of no pain. April 25th: Visible and palpable pulsation at the site of operation, heart feeble, patient pallid, cough increased. May 2d: Left lung since operation dull, fremitus increased, distant breath sounds, bronchopneumonia. Pleural sac on the left side punctured and no fluid. May 3d: Up for one half hour, but exhausted. May 15th: Cough worse, nearly comatose, painful swelling at the site of operation. May 17th: Swelling disappeared, cough no better, laryngoscopic examination showed fixation of the left vocal cord. X ray showed aneurysm of the arch of the aorta. May 22d, died. Pathological description: The specimen consisted of the aneurysmal mass only. The outer surface was torn and ragged. The sac was almost the size of an adult head and involved the best part of the arch of the aorta in a saccular fashion. The wall was made up of dense fibrous tissue and upon section of the lower part, laminated, stratified, and partially organized clot was present. Coils of gold wire could be seen imbedded in the clot.



[illegible] Large saccular aneurysm of arch of the aorta, with erosion of sternum which is still attached to the specimen.



[illegible] aneurysm, showing erosion of vertebræ. Note persistence of intervertebral discs.

Case VI. The aorta, beginning about 2 or 3 cm. below the transverse portion, showed a large aneurysm 15 by 15 cm. The sac was intact and there were no signs of hemorrhage into the surrounding viscera. The process had deeply eroded the vertebræ and penetrated into the spinal canal. At its point of deepest erosion the spinal column was fractured and showed a distinct angulation over which the spinal cord was stretched, producing a flattening of the organ.

I am indebted to the various chiefs of the Philadelphia Hospital, in whose services these cases occurred, and to Dr. Allen J. Smith for his many kindnesses in the preparation of this communication.

Laboratory of Pathology, University of Pennsylvania.

INTESTINAL RESECTION

Successful removal of more than twelve feet of bowel, with observations on the subsequent metabolism.

By Raymond C. Turck, M. D.
Jacksonville, Florida.

The following case is not brought to attention because of its operative features, nor especially through a desire to record the successful removal of a relatively large amount of intestine, but rather to discuss certain dietetic problems and metabolic disturbances which, to a greater or less degree, are the annoying features in the aftertreatment of such cases.

*Read before the Southern Surgical and Gynecological Association, Atlanta, Ga., December 18, 1913.

Case. J. H., white male, aged thirty-five years, was admitted to St. Luke's Hospital in December, 1912, suffering from partial intestinal obstruction, fecal fistula, a large suppurating wound in the right iliac region with several loops of bowel incorporated in the scar, and granulation tissue and multiple sinuses leading into the abdominal cavity; the result, primarily, of an appendicular abscess with subsequent drainage, in 1904, and secondarily—nine operations, eight in New York and one in Jacksonville—for the relief of adhesions. The patient was extremely neurotic, badly nourished, and had constant pain in the right iliac and umbilical regions. There was practically inevitable vomiting of food and drink, together with obstipation and an accompanying distention that necessitated most stringent measures for even temporary relief.

First operation January 2, 1913, at St. Luke's Hospital. Ether anesthesia. A long oval incision was made, well out in healthy tissue. The peritoneum was opened beyond and on all sides of the adherent bowel, and the agglutinated mass, including the fecal fistulous tract and sinuses, together with the entire old wound, was packed off and delivered as far as possible. Approximately, ten feet of small intestine were involved. The adhesions were of every variety, ranging from the soft type, the result of the last operation, to old firm fibrous bands of several years' standing. There were numerous kinks, partial obstructions, and acute flexions. The cecum was contracted and intimately adherent to the mass of ileum. The fistulous opening was approximately seven feet from the ilioceal valve. The adhesions were, with some difficulty, entirely cleared. In view of the extensive raw areas, the sinuses and fistulous tracts and the probability of a recurrance of adhesive obstruction, it was decided to remove the lower ileum, together with the cecum and ascending colon rather than shortcircuit the mass of bowel. During the clearing of the adhesions the old wound, with its scar and granulation tissue, was entirely removed. The ileum was divided well above the fistulous opening and mesenteric ligation begun. The patient ,at this time, went into severe shock, which necessitated intravenous transfusion and other measures. That portion of ileum corresponding to the ligated mesentery was removed and an end to end anastomosis made with a Murphy button. The cecum was straightened out and attached to the lateral peritoneum. The wound was closed without drainage. The section of bowel was measured without stretching four hours after removal and was found to be three feet, two and one half inches in length. The shock was severe for twenty-four hours. Patient began passing flatus in forty-eight hours. The bowels moved freely after the fourth day. The wound showing signs of infection, was opened on the sixth day.

January 29, 1913, the patient was in good condition; no vomiting, no pain; bowels moving freely; wound filling in; button not yet passed. March 15, 1913, under daily dressings the wound had gradually healed by granulation. The button, if passed, had been unobserved. The patient's bowels moved daily with carthartics or enemas. There had been for past month great distention principally in right side of abdomen. Nausea and vomiting began early in February and continued at intervals. During March he vomited one or two meals each day. Upon exertion there was decided pain in the right side. A radiograph of the abdomen taken March 14, 1913, did not reveal the presence of the Murphy button.

The patient refused secondary operation, left the hospital, and attempted to work, but the nausea, pain, and distention returning acutely, he was readmitted. He had, however, gained in weight and was in fair general condition.

Second operation March 20, 1913, St. Luke's Hospital. Ether anesthesia. A six inch incision an inch to the right of the median line was made. The free peritoneal cavity was entered. The adhesions of omentum and bowel to the anterior abdominal wall at the site of the old scar were very dense and extremely extensive. A section of bowel about nine inches in length, evidently the site of the anastomosis, was immediately incorporated in the scar tissue of the old wound. The proximal free loop of ileum leading into the adherent mass of small intestine was ligated, divided, cauterized, and inverted by a purse string suture immediately above the adhesion area. A lateral anastomosis was made between the ileum and the transverse colon with two rows of sutures, first a Connell suture of No. 1 chromic gut and an outer reinforcing stitch of silk after Cushing's method. The adherent mass of small intestine was removed nearly to the ilioceal valve when the patient again went into sudden and extreme shock, therefore it was not deemed advisable to remove the cecum and ascending colon. The lower end of the ileum was ligated, divided, and inverted after cauterization. The anastomosis was tacked to the anterior abdominal wall at the upper angle of the wound and the remaining raw surfaces covered as well as possible by bringing down the remains of the great omentum. A cigarette drain was inserted and the wound closed. The intestine was measured immediately after removal and was found to be seven feet five and one half inches in length. The recovery was satisfactory though shock persisted for forty-eight hours. There was but little vomiting and no especial distress. On the fifth day following operation he was given liquid nourishment by mouth; previously nourishment had been administered per rectum with most satisfactory results. The nourishment, consisting of four ounces of peptonized milk, the whites of three eggs well beaten and two drams of whisky, was given very slowly by the drop method, then nothing for four hours, then normal saline solution by the drop method for four hours, then nothing for four hours, then nourishment again and the cycle repeated.

March 28, 1913, the old wound broke down with fecal discharge, evidently from a fistula of the cecum. The last wound healed kindly; the drainage came out clean; there was no evidence of leakage from the anastomosis or from the ligated bowel ends. During April there was a continuous variable fecal discharge from the fistula. Diarrhea was constant. There were from six to ten daily liquid bowel movements. The patient did not gain in general health or strength, though able to walk about. May 13, 1913, fecal fistula entirely closed; both wounds apparently sound; patient markedly neurasthenic; bowels moving from five to eight times daily; occasional vomiting. Refused further operation and returned to his home in New York. June 20, 1913, patient wired that his old wound had again opened with discharge of large amount of fecal matter; that he was in very bad condition, having numerous bowel movements and severe vomiting. He refused operation in New York and returned to Jacksonville. He arrived apparently in good general condition but was extremely neurotic, was vomiting intermittently and having from six to ten bowel movements daily. He was returned to St. Luke's Hospital where he was observed and treated by Dr. Graham Henson with marked improvement, so much so that he refused further operation and again returned to his home in New York city. Soon after his arrival there all symptoms increased and he was obliged to enter hospital for treatment. He again refused operation and in November returned to Jacksonville. There was at this time a marked ventral hernia at the site of the old wound, but with no sinus or fistulous tract. An extremely dilated hepatic flexure was readily demonstrated. Believing that fecal stasis in the blind pouch, consisting of the cecum, ascending colon, and hepatic flexure, was causing his vomiting, abdominal distress, and possibly his neurasthenia, he was again admitted to St. Luke's Hospital.

Third operation, November 17, 1913, St. Luke's Hospital. Ether anesthesia. The old scar was dissected out. The anastomosis was found to be in excellent condition and free from adhesions. There was a decided enlargement and an apparent hypertrophy of the small intestine above the anastomosis as far as examined. The hepatic flexure and ascending colon were greatly dilated and filled with fecal matter. The transverse colon was ligated, divided, cauterized, and inverted immediately below the anastomosis. The colon was then removed from this point back through and including the cecum and stump of the ileum, thus completing the removal of all intestine outside the anastomotic short circuit. The removed colon was straightened out without tension and was found to be fifteen and one fourth inches in length. The stump of the ileum measured two and three fourths inches exclusive of the inverted portion. The wound was closed by imbricating the fascia. There was apparently no shock from this operation. Recovery was satisfactory except for a moderate dilatation of the stomach, which was readily con-

trolled. December 1, 1913, patient on full diet; bowels moving without difficulty; sitting up in bed.

So far as the length of the resected bowel is concerned, there was removed ten feet, ten and three fourths inches (332 cm.) of the lower portion of the ileum, and one foot, three and one fourth inches (38 cm.) of colon, making a total removal of twelve feet two inches (371 cm.).

Attention is called to the fact that this bowel was measured under the most unfavorable circumstances, that is, along the mesenteric border and after it had been removed. According to McGuire, there is a decided longitudinal shrinking of the intestine after removal. Therefore it is probable that had this bowel been measured before removal the length of resected ileum would have exceeded eleven feet. However, in view of the fact that, as Monks has demonstrated, the human small intestine varies from fifteen to twenty-five feet in length, and, further, since severe metabolic disturbances have followed the removal of relatively small amounts of intestine, while cases of very extensive resection have shown no disturbance whatever, it would appear that the removal of a few inches, or indeed a few feet, more or less, is a matter of no special scientific interest, unless there can be shown in that particular individual the total length of small intestine. It is certainly reasonable to presume that the removal of eight feet of intestine from a patient having a total of but fifteen feet, would have a very much greater effect upon the digestive and assimilative functions than the removal of twelve feet from a patient having a total bowel length of twenty-five feet. Therefore it would not seem possible to lay down an absolute rule as to the amount of intestine that may safely be removed. According to J. M. Flint (The Effect of Extensive Resection of the Small Intestine, *John Hopkins Hospital Bulletin,* May, 1912), whose most excellent work on this subject is deserving of more than passing mention, it seems safe to assume that not more than one half of the human small intestine may be removed without serious metabolic disturbance and actual danger, though "the resection of smaller amounts may, however, be followed by severe metabolic disturbances, and even inanition and death." Flint further states that "if we are justified in generalizing from these cases, we may say that there is not great danger in removing as much as 275 cm. of the small intestine, but that beyond that limit death from marasmus may occur." As to whether it is safer to remove large sections of intestine from the upper or lower portion of the tract, the literature is most conflicting. Accepting the hypothesis that absorption takes place largely in the ileum, and that true intestinal or pancreatic digestion occurs principally in the jejunum, it would seem that the greatest amount of intestine might be removed with safety from the central portion of the tract, and that as much as possible of the lower ileum and upper jejunum should be left in place.

Fantino's suggestion that, in cases of extensive resection, a vicious circle should be established in the remaining segment of bowel in order that the intestinal contents may circulate long enough to complete the digestive and assimilative processes, seems worthy of consideration and trial.

A review of the literature, and a study of case histories point plainly to the fact that, from the viewpoint of ultimate results, shortcircuiting, whenever possible, is much to be preferred to resection, particularly if the lower ileum is involved. In the case reported above, while circuiting was decided against at the time of operation because of the indescribable adhesions, the foul sinuses, and fistulous tracts, it is probable that a better ultimate result would have been attained had the worst segments been removed, and the remaining adherent gut shortcircuited in one or two places. This patient certainly has not enough small intestine to permit of thorough absorption, though compensatory intestinal hyperplasia provides adequate digestion.

In the aftertreatment of this patient, as in other similar cases, we were working at a disadvantage because we are singularly lacking in definite data as to how or what to feed these patients to prevent the distressing diarrhea as well as the early or late malnutrition which so often follows. Observers have stated that these cases do about as well on general as on special diets. Flint has concluded from his own experiments and from the study of the work of others that "the diet in these cases should be rich and easily assimilated, but it should not contain too great a percentage of fats. The complete utilization of the carbohydrates suggests the advisability of increasing these elements of the food."

Since this case involved the removal of almost the entire ileum, studies of this patient's metabolism should be of some interest and value. The case was referred to Dr. Graham E. Henson, of Jacksonville, who is making studies in the metabolism, and as a result of his preliminary investigations has devised a system of feeding which is giving most satisfactory results.

Dr. Henson has summarized the medical and physiological aspects of this case as follows:

The patient first came under the writer's observation in July of the present year. His hospital record previous to this time may be divided in two periods, one in which he received the regular hospital diet with no medication, the other in which with the same diet he received astringents and intestinal digestive ferments. During the first the average number of stools was 6.4 per diem, for the second period 6.3—demonstrating the fact that medication did not relieve his diarrhea to the slightest degree. Beginning July 26th, an attempt was made to regulate his diet and a study of his metabolism anticipated with a view of ascertaining, if possible, the diet most suited to his needs.

The following table shows the average number of stools per diem under a variety of restricted diets:

TABLE I

The patient deserted a few weeks after these observations were commenced and before any attempt was made to study his metabolism.

Reentering the hosiptal, November 17th, he again came under the writer's observation on December 5th, having been on the regular hospital diet for several preceding days. Upon this date the first examination of his feces was conducted, resulting in the following findings:—stool, fluid; quantity, 700 grams; color, light yellow; odor, not especially offensive. Reaction, acid to both litmus and phenolphthalein. Chemical tests for starch, erythrodex-

trin, sugar, and occult blood were all negative; for mucin, only slightly positive. The stool, macroscopically, showed a moderate lientery, which upon microscopical examination, was found to be due to an azotorrhea. The fibres were mostly digested to the point that the transverse striations and nuclei were not shown, but in some both longitudinal and transverse striations could be observed. Steatorrhea not present, nor were crystals of any form in excess.

On December 8th the patient was placed upon the following diet:

	Grams.	Albumin, per cent.	Fat, per cent.	Carbohydrates, per cent.	Calories.
Zwieback	100.00	8.00	1.00	75.00	349.69
Toast	200.00	14.00	1.00	110.00	517.79
Potatoes	192.00	2.60	....	38.40	168.10
Eggs (4)	28.20	22.00	....	....	326.02
Butter	30.0	....	23.00	....	214.66
Cream	125.00	4.62	34.24	4.50	370.96
Milk	250.00	8.96	6.40	9.98	137.37
Sugar	40.00	.14	....	37.33	164.00
	946.00	60.52	87.64	275.21	2,248.31

(Weight of patient, 63 kilos, 35 grams to kilo 2,205 required calories at rest.)

It is worthy of note that during all preceding periods in which his urine was examined for indican this constituent was constantly and markedly in excess, but that two days after being on the foregoing diet the indicanuria almost entirely disappeared. While on the diet tabulated his average urinary output was 456 c. c. per diem, the specific gravity of a twenty-four hour specimen was 10.28, the total urea output in the twenty-four hours was 7.84 grams. His stools following the use of this diet averaged three per diem. The feces within a short time became semiformed with an average weight per diem of 755.20 grams. There were no chemical or microscopical findings different from what has already been recorded while the patient was on the regular diet, with the exception, of course, that the azotorrhea was not present. Further tests for starch, erythrodextrin, and sugar were all negative. In this case it would seem probable that a compensatory hyperplasia of the small intestine and a compensatory production of the ferment enterokinase was at least commenced. We know that amylopsin and steapsin are capable of exercising their functions with little auxiliary aid from enterokinase, but that trypsin is dependent very largely on auxiliary aid from this ferment. It is reasonable, therefore, to presume that the compensatory production of enterokinase in this patient has reached the point where, together with the enzymes of the pancreatic juice, it is sufficient to digest pretty thoroughly the intake of carbohydrates and fats, but that this compensatory production has not reached the point of thoroughly digesting proteids.

For the purpose of demonstrating to what extent the absorbability of the intestine is interfered with, Sahli's method was tried, the patient being given 0.15 gram of iodoform in a salol coated gelatin capsule with a Ewald test meal. The appearance of the iodine reaction in the saliva on two different occasions was delayed six hours, hourly tests being conducted.

A blood examination showed

Total red cells	[illegible]
White cells	9,800
Hemoglobin (color index)	75

Differential count

Polyneuclear neutrophiles	[illegible]
Small lymphocytes	[illegible]
Large lymphocytes	3.6
Large mononuclears	2.0
Eosinophiles	[illegible]

Arneth count—

[illegible]

Shift to the [illegible]

The writer fully realizes that the studies in this individual are far from complete, in fact, hardly more than commenced, but it is hoped later to be able to present the results of a more detailed metabolic study.

SOME SCIENTIFIC ASPECTS OF INOCULATION THERAPY.*

The Relations of Immunity So Induced to That Spontaneously Acquired.

By Will Walter, M. D.,
Chicago.

True specialism must be something apart from localism, and the specialist must never become a localist. When he loses sight of the body appended to his elected site, he becomes a menace to progress.

Infections are generally local—there are few exceptions to this—so also, the resistance to infection has at least its inception *in loco* and the old theory of *locus minoris resistentiæ* is today tenable and has a scientific basis, and is demonstrable. So also, do we find in the evidences of autointoxication on the one hand, and antibody formation on the other, scientific proof of the old theories of humoral pathology.

When Mithridates, in the century before Christ, undertook to toughen himself against the poisoned arrows of the enemies of his people by gradually increasing doses of the arrow poison, he but applied empirically the principles of immunization as studied today.

The problems confronting us in our field of endeavor may be studied with profit from a viewpoint made possible by the evolution of latter day research; and what we have to offer may within limits be applied to other fields of specialism, being subject only to regional variations, the variations in sensitiveness to invasion by specific microorganisms.

The eye is peculiarly liable to certain types of exogenous infection, as by the gonococcus and other organisms—types to which the nose and throat are largely immune. On the other hand, the diphtheria types are largely innocuous upon the conjunctiva, as is also the skin type of staphylococcus, whereas at least one strain of diphtheroid discovered by Cautley, and Bacillus septus, to which we gave the name of Bacillus segmentosus, was shown to be the only organism present in some thirty-three per cent. of the cases of acute rhinitis studied and reported by me at the A. M. A. meeting, in 1910, and while the staphylococcus—particularly the hemolyzing strains—probably cause a proportion, perhaps five per cent., of cases of acute rhinitis, and while Staphylococcus aureus will cause furuncles at the atrium nasi and the common stye in the tarsal conjunctiva, they are probably largely saprophytic when found in diseases of the mucosa of the nose or its annexa.

When this report was made (the study really covers about 400 cases of rhinitis, of which 100 were tabulated), we felt that the foundations for prophylactic inoculation, the prevention of common cold, could be laid. Now, however, it is necessary to report that since 1910 when this study was made, the then predominant bacteria, viz., Bacillus segmentosus and Bacillus catarrhalis, have been encountered, the former not at all and the latter but

[illegible]

a few times, and in their stead has come the wave of streptococcus infections which has swept this country during three years and which appeared in London in August, 1912, where we isolated the organism in several cases which came under observation there.[1]

Now, this streptococcus strain will grow upon the conjunctiva in some measure, in the nose strongly, markedly in the pharynx, in the trachea persistently, and in the ear with increasing virulence, as we all know, also in the blood stream. Its virulence is also exalted upon the meninges. *Streptococcus pneumoniæ* has also often been encountered as a localized, circumscribed, atypical organism. These subjects are susceptible to reinfection and this sensitization is slightly general but markedly local, a "sensitization of the area" such as we called attention to in a paper before the A. M. A. this year. Once involved, the area will light up again upon infection and may even be irritated by vaccines of homologous strains. Clinical examples of this are shown also in joint involvement and in iritis of this type, so prone to recur. We see this also in the eye ,in pneumococcus corneal ulcerations, which come back to us so repeatedly.

This local sensitization is a point to which more attention should be given, as it explains so much and leads the way to a prophylactic regime. Upon this point I would ask you to note that tissues in conditions of vascular stasis, as the tarsal border under prolonged refractive strain, and tissues of low vitality, as adenoid types, are particularly liable *after once being infected* to show recurrences because sensitized, and our problem here is probably not so much one of general as of local resistance. Now, the adenoid types of tissue constituting the Waldeyer ring, while probably a strong wall of defense against the absorption of poison and infection by bacteria, when once infected, particularly by the streptococcus group, become more sensitive to reinfection and thus a menace to health.

After a few infections of this recurrent type, I am sure one may note that at least a relative immunity is attained, and these are the cases where our forefather physicians were right when they said that "these patients will outgrow the tendency to cold"; they do, and by an established immunity not possible by the single attack such as ensues upon scarlet fever, or typhoid and the like. I believe we may observe this with a little care and that it is a point of value, that the increased sensitiveness is a part of the streptococcus immunization and that several repetitions are necessary to its evolution into genuine immunity.

As offering some explanation of these peculiar epidemic waves, we might, in addition to what Flexner says about increasing fastness or virulence of organisms due to conditions of growth, call attention to the variation in immunity produced by the various types of infectors, for the diphtheroid, catarrhalis, and typhoid groups generate, like the variola and scarlet fever infections and possibly the influenza, an immunity lasting a considerable period; whereas the pyrogenic cocci, including the pneumococcus and the various forms of streptococcus, produce but a brief immunity and are followed by increased sensitization.

We see, then, that at least two factors make difficult the prophylactic exhibition of vaccines in our field—the great variation in infectors, both as to kind and as to aggressivity in different years or in different seasons;[2] and, secondly, the probable variation in length of immunity after infection by the various organisms and the increasing sensitiveness to the streptococcus groups, including the pneumococcus, after preinfection.[3] From these observations we may at once realize that the problems of inoculation therapy must also be complex. No cure all method has here been vouchsafed.

May we first, then, to avoid empiricism study a little more into the natural methods of cure of infection before we apply the principles to our chosen field? It may safely be said, however much we may laud ourselves for our accomplishments in combating infection, that we do no more by usual drug methods than render the subject more comfortable pending the evolution of the protective substances. Nor are the responses of the body easy of analyis, for they probably cover a much wider range than is even now our conception. It is presumption to assume that any method of therapy is adequate either for all infections or always for the same infection. Simon is probably right when he says, "so much, however, seems certain—that Nature's ways, so far as we have become familiar with them, are the only specific ways along which progress seems possible, and that drug treatment if it ever shall become of value must start from a different basis, and that basis must be a knowledge of the principles which underlie the interaction between the disease producing agent and the affected organism." So that we may justly conclude that inoculation therapy will be valuable in proportion to our understanding and our adaptation of that understanding of the *natural* methods employed by the body in the cure of disease.

Studies in immunology have brought out the fact that the body response to infection varies according to the infector. In this we are not referring to the action of the leucocytes directly, but rather to the substances in the nature of antitoxins, antibodies, and lysins which come from not entirely understood functions of the body cells. We know that probably in phagocytosis we have the greatest defense, that is, the defense applicable to most infections; but it is certain that phagocytosis fails in many cases and with many organisms, and possibly at times with all organisms. Something else is always necessary to produce phagocytosis, even in the presence of increased leucocytes. We know that agglutinins are particularly active in the typhoid group, that precipitins are put forth in re-

[illegible] undergoes an exaltation in virulence in milk, and thus gives reason [illegible] that have been so prevalent with us and [illegible]

[illegible] appears in these formations after a few days' growth and appears in extensions into sinuses and into the ear, [illegible] the cause of most of the severe types of infection encountered during the past few years. These have been and continue to be diagnosed as grippe, but I have still, as I at that time reported, to note the entire absence of the influenza bacillus in culture or smear from these cases.

[illegible] finding of Bacillus segmentosus only in autumn epidemics.

[illegible] This latter factor has to be considered, too, in the exhibition of vaccines of this group, since in lieu of immunity the possiblity of increasing the sensitiveness cannot be gainsaid.

sponse to certain types of albuminous substances parenterally exhibited, that cytolysins or solvents of cells are evolved from certain cellular toxins, as is possible in sympathetic ophthalmia, if we accept the theory which Elschnig put before us at the last meeting; though, one observes, in other terms than this.

Then we have the bacteriolysins or pure solvents of bacteria, ferments probably contained in the white cells themselves; and finally, most important of all because most general, the opsonins, substances which activate by their presence the otherwise latent leucocytes. Then we have the more or less well known antitoxins, which are formed in response to inoculation, in large quantities by the so called exotoxic group of bacteria. We know that the chief example of bacterium which operates by its excretion or secretion, and is hence purely exotoxic, is the diphtheria organism; and we know that while the bacillus of diphtheria is very mildly infectious, its toxin is extremely virulent; whereas other organisms, the endotoxic types which have to be broken up in order to produce their toxic effects, are relatively more infectious and less toxic. These extreme types tell us again that there must be every variety of response to meet the various types of infectors. There probably is no strictly bacterial nor strictly antitoxic immunity; either would be inadequate to the exclusion of the other. Hence, even the mildly toxic organisms produce some antitoxin in addition to other antibodies, and the diphtheria organism produces other antibodies than antitoxin, though in milder measure. Hence, at once appears the great value of serums containing diphtheria antitoxin to neutralize these extremely toxic substances, and the relatively little antitoxic effect of antiserums of the more purely endotoxic organisms.

Another point in reference to antibody formation is the more than probable fact that natural immunity varies with different periods of life. It was long ago shown by Wells, for instance, that opsonins are absent in infancy, and yet infants are singularly free from infection of the nose and throat, at least for the usual organisms of endotoxic type.[4] The liability of girls at puberty to tuberculosis, of youth and middle age to typhoid, and of youth to acne, are demonstrations of this.

Knowing more of the natural methods of antibody formation, the body response to invasion, the possibilities of the application of such inoculation therapy become greater, though still far from simple. Several possibilities obtain from the immunity side: First, prophylactic inoculation; to employ this we must know in advance the nature of the infector, and we must have an homologous strain for the making of the vaccine. In view of our study of the infectors and their great seasonal variation, we may hope for no better plan than by a study of the prevailing epidemic, to provide ourselves with fresh stock vaccine made from several current cases; and in closely associated groups of individuals in schools or institutes or in families, to prevent the spread of the infection by inoculation with the initial strain. This we do in practice and with seemingly good results. We must bear in mind, however, the relatively short duration of the protection from the streptococcus group compared with that following typhoid for instance, which latter continues for several years as against a few weeks perhaps for the former.

Second, by knowing the tendency of an individual to manifest a known infection at season, he may be protected by his own strain of vaccine carried over from the previous attack. In this, as in all therapy of this type, only a small dose is advocated, on the general basis that sensitization or increased liability to infection, or negative phases of immunity instead of the expected protection, will ensue from large doses in at least a considerable number of cases. The small dose not only has not this possibility, but does all that the large dose will do when it brings forth the desired response of antibody formation. This practice has therefore at least the element of safety.

Third, we may, after the incidence of the attack, shorten its duration, or diminish its severity, or prevent its extension.

I am not in harmony with the observers of this therapy who refrain from its exhibition in acute infections. Originally, Wright withheld the therapy because of his belief that the body was already being provided with such quantities of autogenic vaccines (autoinoculation) as to make it unsafe as well as unreliable to add to them; but clinical observation early compelled him to change this practice. We have never hesitated to employ the therapy in acute cases, and we believe that the attacks are much shortened, even occasionally aborted. Vaccines certainly tend to protect the body against extension through the blood by raising its bacteriotropic pressure or volume of antibodies in the blood stream, and there is certainly an advantage in the reaction which takes place at a site of inoculation away from the infection focus.

We may fail entirely to accomplish our ends in influencing in any way the infection, and particularly in streptococcus groups and where there has been no preinfection our problem is difficult. This has happened in two striking cases of "sterilized" children, children who have been so guarded that they have never had any infections. These went slowly to fatal issues despite all therapy, including the autogenous vaccines early exhibited and carefully administered under opsonic control. In these cases the streptococcus evolves a fastness which renders it invulnerable to antibody attack. The organisms seem to be protected by capsule formation. This is a fine example of what Professor Welch has maintained we must bear in mind, that the microorganism has its form of defense as well as the body. They will manifest this in animal passage, whereas in growth upon ordinary culture media they will lose the capsule and with it their aggressivity.[5]

[4] I believe we have a perfect explanation of this fact in the undeveloped condition of the afferent nerve fibres and the vasomotor control. To this there is not time here to give attention, but we hope some day to present both theories and point along this line as part of a general regime of prophylaxis in relation to these infections.

[5] This is a matter [illegible] the opsonic index in these cases, which it must be [illegible] we are testing the resistance of a body to a [illegible] of [illegible] germs.

In other cases where smears show the bacteria lying without the leucocytes, indicating lack of phagocytosis, and that they are without capsules, we know that a negative chemotaxis has been brought about. Toxins generated locally seem to increase this. Raising the opsonic index by inoculation therapy will often convert negative into positive chemotaxis and the bacteria will later be found within the cells and undergoing phagocytosis.

Fourth, we may mention the cases where there is a "truce" between the infector and the infected. What we have presumed to call a "defensive equilibrium" is attained. This is true in many cases of chronic tonsil inflammation. The body has its protection and so has the organism. Also in innumerable cases of tuberculous foci throughout the body, in sinusitis, and in chronic infections generally. Now, inoculation therapy by increasing the bodily defense will not only furnish protection against further extension or metastases, but in some cases will distinctly aid in the cure.

Fifth, in preoperative inoculation the results are brilliant, as healing is accelerated and often immediate, while at the same time the body is protected from invasion. This practice is distinctly worthy of commendation.

It has been a question whether antibodies circulating in the blood stream would find their way into corneal, conjunctival, and other ocular tissues. It would *à priori* seem unreasonable to find such were not the case. Loeffler first established it as a fact that the cornea partakes in the immunity of the rest of the body. Roemer and his assistant, Grueter, proved it beyond question, and continuously employ it as a principle underlying their therapy. The colloidal nature of these antibodies, however, makes their action more difficult in corneal infections because they do not penetrate so readily tissues of this type. With reference to the circulation of immune bodies through the ocular tissue as offering clinical evidence of the assertions, attention should be called to the relative infrequency of purulent ophthalmia in persons suffering from gonorrhea. The ratio of such secondary infection is so small, while the opportunity for ocular infection is so ever present, that we have a right to think that it is the general immunity which protects the uninfected tissues. So often we pride ourselves upon preventing the development of the infection in a second eye! Is it not possible that the raising of the general immunity from autoinoculation from the first eye does more than we do to prevent this secondary infection? If this is so, to employ the inoculation therapy early in all these cases would be indicated, and in associated individuals for their protection.

Observation of the opsonic index in several hundred cases seems to show that in only a limited number of malignant cases is the general bacteriotropic pressure below normal; the blood usually contains sufficient resistance to infection. This makes us think that the theory of low local resistance must be adopted to account for the primary invasion.

There are many difficulties in isolating the causal organism in a given case even when cultures are available. Experience seems to teach that in acute cases it is the predominant one shown in smears. This applies particularly to acute sinus and middle ear infections. Many times where several organisms appear one must judge symptomatically. In chronic cases saprophytic and secondary infections cloud the judgment. Plating out is the only reliable method in these cases. In iritis and iridocyclitis, and some forms of scleritis and the deeper infections, the difficulty is further enhanced by the lack of direct culture. Here we must and may fall back upon an immunity reaction, the complement fixation test, provided we have some clue to the type and strain of the infector. In a few cases we have applied this test with success and with brilliant results, and in some we have met with failure. But the successful cases demonstrate the value, and the failures only the shortcomings of the method.

Mixed vaccines to be of value must be made by growing the organisms separately, certainly not together; for in the latter case there is much variation in the growth, some being inhibited by the symbiosis, while others are accelerated.

One may say, then, that inoculation therapy raises the bacteriotropic pressure of the blood. Only in so far as this increased pressure in the form of antibodies may be carried to the point of infection and be brought into direct influence upon it, may we expect results. In our field, aside from the diphtheria we encounter the endotoxic organisms almost entirely—types to which the antibacterial immunity is the mode of defense. This latter immunity consists, as we have seen, in the evolution of antibodies of the lytic and opsonic types. These aid in the destruction of the bacteria, both by their binding and dissolving characteristics. Their cooperation with the leucocytes in the production of phagocytosis is well known. Therefore, it would seem reasonable to apply serums containing these antibodies directly to the lesion where it is open and exposed. The antipneumococcus serum has served well in my hands for direct application to pneumococcus corneal ulcers and mucous membrane infections, and appeals to one as being quite as effective and free from the dangers of the circuitous blood route. The antistaphylococcus, the antipyocyaneus, the antistreptococcus, and other serums will be found of advantage in sinus and aural suppurative conditions due to their respective organisms.

When we have the causal organism and our vaccines, we are still far short of success, since these, as we have said, but raise the bacteriotropic pressure, the general resistance. We still have the problems of volume and interval of dose, which are essential prerequisites of success, and we still have to determine the flow of these substances through the area for ideal results. It is the ratio of specific antibody formation to the circulation of the area which determines the incidence of the attack.

In the early stages of acute infection the antibodies are walled off by this stasis, but if we have an adequate bacteriotropic pressure in the blood stream the disease may be aborted by quickly determining the flow of blood through the area. This may be done by measures productive of hyperemia—active as by extreme heat or cold (both of which act much the same), or by stimulating medicaments, or by violet or x rays; or by passive hyperemia, as by negative pressure or by Bier's bandage.

Contact between antibodies and the attacked area is retarded or inhibited in abscess formation and drainage must be employed to restore their flow. The great fatality of meningitis is due to the inability to get the antibodies in contact with the infectors; the action is akin to abscess formation. However, even in severe cases if their pressure is high in volume they will abort or cure; if low, they will fail and the tissues will be further invaded, and nothing but the wall of secondary defense which the tissues throw out will prevent their progress; and these in their turn further tend to prevent contact between the antibodies and the infector. I believe that advocates of negative pressure applied by suction apparatus in ear, nose, and throat, have failed of the mark in their advocacy of this therapy for aspiration purposes. They aid some by this means, but its main value consists in the increased flow of blood through the area, which suction generates. Iodine aids by stimulating lymph flow. A Bier's bandage accomplishes similar results, and this is further aided by sodium citrate and citric acid solutions.

So we find ourselves traveling in a therapeutic circle and coming back to the point of beginning, viz., the area of low resistance, the area of sensitization, the area of stasis. If this circle is to enclose and isolate infection it must have no weak segments. Nothing may be neglected. Details are imperative, and we cannot with a wave of the hand cast aside all the therapy of our experience for a new method. We must call to our aid as much of the old therapy as is consistent with the new thought. We must employ all the usual therapeutic measures which tend to bring out the autogenic defense.

We have had shown us a way to induce natural immunity, whereby the duration and intensity of the disease may be shortened or the infection aborted—perhaps prevented. This induced immunity is, even with our limited knowledge, in many ways superior to that spontaneously acquired—particularly in the vital elements of *time* and of *safety*. All other measures are as essential as ever, and the greatest of these is the normalizing of the areas of the body most subject to infection; areas of low resistance, whether by correction of eye strain in recurring ocular infections, the normalizing of nasal malformations, or the removal of infected foci in nasal, postnasal, or pharyngeal spaces or mastoid bone. Along this line specialists in all branches have done valiant service and have been the means of real progress.

122 South Michigan Boulevard.

BESREDKA'S SENSITIZED VACCINES.

By F. E. Stewart, Ph. G., M. D.,
Philadelphia,
Professor of Materia Medica, Department of Pharmacy and Chemistry, Medico-Chirurgical College

Sensitized vaccines, serovaccines, or serobacterins are suspensions of pathogenic bacteria, living or dead, artificially sensitized by treating them with immune homologous serums, i. e., serums from animals immunized against bacteria of the same kind as those used for producing the vaccines. By this means the amboceptors contained in the immune serums are made to combine with the bacteria and to sensitize them, so when they are injected into the body the complement and phagocytes normally present in the blood of the injected individual immediately combine with and digest them, and the resultant products stimulate the tissue cells to produce antibodies to which the subsequent immunity resulting from the vaccination by the sensitized vaccine is due.

The immune serum for making sensitized vaccines is usually prepared by treating goats intravenously, first, with dead, and later with living cultures of bacteria. Trial bleedings are made at regular intervals, and the serum is tested for amboceptors and other specific antibodies. When the serum shows a sufficiently high titre, a large quantity of blood is withdrawn for use in preparing the sensitized vaccine.

The bacterial cultures to be sensitized are added to a little physiological salt solution, emulsified, turned into a vessel containing the immune serum, allowed to macerate for a few hours: the clear and slightly opalescent liquid separated from the deposit of bacteria, and the latter washed by centrifugation several times in physiological salt solution until the last traces of serum disappear. The white mass thus obtained is of a pasty, semiliquid consistence, and after standardization by bacterial count, and the addition of physiological salt solution in proper amounts, produces an entirely homogenous emulsion which constitutes the sensitized vaccine.

Sensitized vaccines were introduced to science, in 1902, by Besredka, a scientist connected with the Pasteur Institute, and have gradually and progressively attracted attention as knowledge concerning them has been developed by Besredka and his associates. Among the latter are Garbat and Meyer, Gordon, Broughton-Alcock, Boinet, Cruveilhier, Bertrand and Feigan, and other investigators. The researches have been carried on at the Pasteur Institute and the Hôtel Dieu, Paris, also at St. Bartholomew's Hospital, London, and other well known institutions. One of the sensitized vaccines, that used for immunizing against bubonic plague, is prepared from killed sensitized plague bacilli, and is now official in the French Codex.

Normal blood serum, owing to the alexin or complement it contains, and the small amount of natural amboceptor present in the blood, possesses in some degree the power of digesting bacteria and other protein substances. This power is enormously increased during the process of parenteral digestion. This is due to the stimulating effect upon the tissue cells of the protein introduced. For, if a protein is introduced into the tissues, the tissue cells are stimulated to produce a specific amboceptor, the function of which is to sensitize the protein and thus prepare it for digestion. This digestion is accomplished by the joint action of amboceptor and complement. (Vaughan says that all digestive enzymes are composed of amboceptor and complement.) But the complement cannot act upon the protein until the latter is first sensitized by the amboceptor. Amboceptors are *specific*, and the kind of amboceptor produced by the tissue cells depends

upon the kind of *antigen* (protein) used to produce it. The digestion is called *lysis*. Hence we have bacteriolysis produced by the joint action of specific bacteriolytic amboceptor and complement upon the kind of bacteria injected into the tissues.

When unsensitized killed bacteria (bacterin) are injected into the tissues, all of this complicated process of parenteral digestion must be carried on by the body cells to produce the specific amboceptor and other antibodies to which the value of the bacterin as an immunizer is due. In preparing sensitized vaccine, the bacteria are artificially sensitized by the amboceptor in the specific (homologous) serum before injection, and thus prepared for the immediate action of the complement already present in the blood of the individual injected.

Sensitized vaccines are used against typhoid fever, rabies, plague, cholera, and other infectious diseases, and are also employed in their treatment. Several thousand people have been immunized by their use, and they have also been quite extensively employed as therapeutic agents by many competent observers. Further researches are necessary to determine their merits in comparison with bacterial vaccines prepared by the Wright method, also to ascertain the comparative value of sensitized vaccines prepared by sensitizing living cultures and cultures killed by heat.

In explaining the action of sensitized vaccines, Besredka refers to the researches of Garbat and Meyer. These investigators aver that bacteria are typical cells consisting of an external protoplasmic envelope and an internal nuclear portion. When they are disrupted by the action of amboceptor and complement, the outer portion is digested and the inner portion set free. Both portions are toxic; both give rise to individual immunizing substances by stimulating the tissue cells to produce them.

As the explanation of Garbat and Meyer resembles in some particulars the teachings of Vaughan and his associates, I wrote to Professor Vaughan in regard to sensitized vaccines, and asked further information on the subject from his viewpoint. His reply proved very interesting to myself and friends, and became the subject of considerable debate. I am now presenting both letter and debate.

University of Michigan, Ann Arbor, *November 8, 1913.*
Dear Doctor Stewart:

It seems to me that the action of sensitized bacteria compared with unsensitized bacteria is best explained by my theory. Probably it will be best to first state my theory and then see how it applies to sensitized bacteria. A protein sensitizer or anaphylactogen (called by others antigen) is a protein substance which when injected into animals causes certain body cells to produce a specific proteolytic ferment. This specific ferment digests and destroys its homologous sensitizer or the protein which has caused its development. This ferment, like all other ferments, consists of amboceptor and complement. Now let us apply this to sensitized bacteria. Bacteria, typhoid bacteria for instance, are sensitized by submitting them in vitro to immune serum. These bacteria thus are saturated with their specific amboceptors and when such sensitized bacteria are injected into an animal they are already fitted for complete digestion. In the animal the complement acts upon the prepared bacteria and their digestion is complete. So complete is their digestion that a large part of their poisonous constituents is destroyed and the animal is immunized by the nonpoisonous constituent of the sensitized bacteria. For this reason the animal treated with sensitized typhoid bacteria shows little disturbance, while on the other hand, the animal treated with unsensitized bacteria must elaborate both amboceptor and complement. This takes time, the period is longer, the digestion is less complete, more of the poison is set free, less of the poison is destroyed in the process of digestion, and consequently the life of the animal is placed in greater jeopardy. Garbat and Meyer believe that immunization is secured only by the poisonous constituent or constituents of the typhoid bacillus. According to my theory, the poisonous constituent of the typhoid bacillus has nothing to do with the production of immunity or sensitization. Sensitization and immunity are induced by the nonpoisonous part of the typhoid bacillus. Subjecting the typhoid bacillus in vitro to immune serums, in other words sensitizing the bacteria in vitro, prepares the bacteria for digestion, and when introduced into the body they are digested speedily and completely, or so nearly completely that a large part of the poisonous part of the bacterial molecule is destroyed. It seems to me that if the article by Garbat and Meyer is read with my theory in view, it is confirmatory of that theory. It has been shown by Friedberger, myself, and others, that very small amounts of the protein poison produce an elevation in temperature. Large amounts produce a depression in temperature. Sensitizing with immune serum in vitro prepares these bacteria for ready and complete digestion as soon as they are introduced into the animal body. Therefore, there is less disturbance in the animal body when sensitized bacteria are introduced than when unsensitized bacteria are given. This is the way I look at it.

I don't know whether I have made myself clear on this point or not. I know that I have been able to sensitize animals with the nonpoisonous part of typhoid bacteria. This nonpoisonous part which I have obtained has been secured by a crude method. The nonpoisonous part, which is split off by sensitizing bacteria with immune serum, is a much more efficient preparation than mine. The point that I insist upon is that the sensitizing group in the protein molecule, and this of course means the immunizing group, is not the poisonous group, but is found among the nonpoisonous groups. The poisonous group in all proteins is much the same, physiologically the same, chemically there must be fine differences, while the sensitizing group is not the same in any two kinds of proteins; hence its specificity.

I may be cranky on this subject. I think that the nomenclature of Ehrlich has been wrongly applied to sensitization and to bacterial immunity. The protein poison is not a toxin; it is a poison. It produces no antibody.

V. C. Vaughan.

PARENTERAL DIGESTION IN RELATION TO INFECTION AND IMMUNITY AND THE ACTION OF VACCINES.

This letter of Vaughan becomes far more interesting after reading his most instructive book.[1] In this book he explains how the tissue cells of the animal body have the power of digesting food and producing enzymes for so doing. Digestion carried on outside of the alimentary canal by the tissue cells is called by Vaughan "parenteral digestion."

The questions arise why bacteria, many kinds of which live as commensals (at the same table), on the skin and mucous membranes of the body, feeding as saprophytes on dead matter, including worn out epithelial cells, excrementitious matter, particles of food, etc., do not attack the living tissues and become parasites. And, in case they do become parasites, and obtain their sustenance by preying upon the tissues, how does the body get rid of them?

Vaughan attempts to answer these questions in his way, Metchnikoff has another way of answering them, Ehrlich another, Wright another, Besredka another, and so on. Each of these views resembles

[1] Vaughan, Victor C., M.D., LL.D.: Protein Split Products in Relation to Immunity and Disease.

the others in many respects, and diverge in others. They cannot all be harmonized, and I shall not attempt to harmonize them. But there are certain points which need connecting to make the subject before us intelligible to those who have been following Wright in his theories of infection and immunity, and employing Wright's bacterial vaccines in their practice. Besredka's sensitized vaccines appear to be a marked improvement upon Wright's, and it is an important matter for us to decide whether they are or not. Let us therefore consider the theories underlying the subject, hoping to get a clear idea of Besredka's assertions and the investigations upon which they are founded.

In answer to the questions, why do not the bacteria living with us as commensals, become parasites, and when they do become parasites, how does the body get rid of them? All authorities agree in the following answers: The tissues of the body possess natural resistance to the action of enzymes, including the action of the enzymes secreted by the bacterial cell. This resistance, when especially marked, is called *immunity*. When bacteria succeed in overcoming this resistance, and invade the body as parasites, the tissue cells are stimulated to secrete specific enzymes which digest and destroy them.

According to Vaughan, infectious diseases are groups of symptoms caused by the parenteral digestion of pathogenic bacteria, especially by the splitting up of the bacterial protein. This, Vaughan teaches, is split into several portions, viz., a primary chemical group, or archon (keystone), with which are connected secondary or even tertiary groups. When the protein molecule is split up by disrupting agents, including digestive ferments, the archon is set free to a greater or less extent. This archon is a poison. Its poisonous character is due to its great affinity for the secondary groups. When the secondary groups are digested, the archon aids the digestive enzymes in breaking down fresh protein molecules, and the digestion proceeds onward. The primary, or poison group, causes the toxic symptoms of the infectious diseases. The nonpoisonous or secondary groups stimulate the tissue cells to produce a special and specific proteolytic ferment or enzyme which has the power of rapidly digesting and destroying the homologous protein. Immunity to another attack of the same disease is due to the rapid digestion of the invading bacteria upon subsequent exposure. The bacteria are thus destroyed before they have an opportunity to multiply.

Vaccines are prepared by attenuating by various means the disease producing bacteria so that they are unable to cause infection, yet the bacterial protein still retains the power to produce the specific proteolytic ferment upon which immunity depends —that is, according to the hypothesis of Vaughan. When a vaccine is used in the treatment of an infectious disease, this proteolytic ferment is produced in excess of the quantity required to digest the vaccine itself, and the excess is employed in digesting and destroying the invading pathogenic bacteria.

OTHER TEACHINGS.

We are taught by Metchnikoff that invading disease germs are destroyed by the white blood corpuscles or leucocytes, called by him phagocytes or "cell eaters" because they ingest and digest the bacterial cells. This does not conflict with the hypothesis of Vaughan, for the phagocytes undoubtedly depend upon the ferments they contain for their proteolytic function.

How about the teachings of Ehrlich and his associates? They say that the destruction of invading bacteria is accomplished by the action of amboceptor and complement upon them, and that the value of bacterial vaccines lies in the fact that their injection into healthy tissues stimulates the tissue cells to produce a large excess of amboceptor, which sensitizes the invading bacteria and thus prepares them for the destructive action of complement. *How does this view agree with that of Vaughan?* It is immediately apparent that the only difference is essentially one of terminology.

How do Vaughan's teachings agree with those of Wright, who says that the invading bacteria are destroyed by phagocytes only after they have first been prepared for ingestion by opsonins? It is evident that the opsonic properties of the serum are merely a manifestation of the action of the specific proteolytic ferment.

How does the explanation of the action of sensitized vaccines given by Garbat and Meyer and approved by Besredka harmonize with that of Vaughan? This question is answered by Vaughan himself as follows: "Garbat and Meyer believe that immunization is secured only by the poisonous constituent or constituents of the typhoid bacillus. According to my theory, the poisonous constituent of the typhoid bacillus has nothing to do with the production of immunity or sensitization. Sensitization and immunity are induced by the nonpoisonous part of the typhoid bacillus."

RELATIVE VALUE OF LIVING AND KILLED SENSITIZED BACTERIA FOR IMMUNIZATION.

In Besredka's earlier experiments killed bacteria were used. Further investigations, first on animals and then on man, demonstrated the harmlessness of certain sensitized living bacteria, and in antityphoid immunization the sensitized living bacteria are now preferred by Besredka and his followers.

Why are living bacteria preferred? It is generally conceded by authorities that immunity obtained by living viruses is more substantial than that resulting from the use of killed virus. However, up to April, 1913, Broughton-Alcock has "seen no advantage of the living sensitized gonococci over those allowed to die."[2] Is there no danger of carrying contagion with living sensitized pathogenic bacteria? Besredka asserts that there is no more danger of carrying contagion from living sensitized bacteria than there is from living smallpox vaccine, and that there is no danger from either.

Are sensitized bacterins prepared from killed cultures superior to unsensitized killed bacterins? Yes, according to Besredka, "whatever be the nature of the virus, whether it be a question of bacteria of pest, of dysentery, of cholera, or of typhoid fever, whether it be a question of rabies virus, of diphtheria toxin, whether the bacteria are killed or living, sensitization confers upon them new properties which make them vaccines of the first order,

[2] Broughton-Alcock, W. [illegible] with living Micro-organisms. [illegible] April 26, 1913.

and which are characterized by an action, *sure, rapid, harmless,* and *durable.*"

How do unsensitized living bacteria compare with unsensitized killed bacteria for the production of immunity against typhoid fever? Results obtained by Besredka and Metchnikoff in the immunization of chimpanzees against typhoid fever demonstrate that sensitized living germs gave absolute protection, causing but slight fever and reaction, while killed bacilli failed to protect adequately. Apparently the method is harmless, as Besredka reports that about ten thousand persons, men, women, and children, have been vaccinated without a single mishap of any kind.

Is there no danger that in some persons the injection of living bacilli might lead to the development of a carrier state? No cases of the kind have been reported in relation to the ten thousand persons immunized. Seven hundred of these cases were tested, and no typhoid bacilli found either in the feces or urine. The results obtained by immunization with killed typhoid cultures in the armies of the world abundantly demonstrate that adequate protection against typhoid fever is obtained in this manner. However, according to Besredka's general verdict concerning the improvement in the vaccine produced by sensitization itself, killed sensitized vaccines are superior to killed unsensitized vaccines in all cases.

SENSITIZED VERSUS UNSENSITIZED BACTERINS.

According to the statement by Besredka above quoted, there are many advantages to be gained by sensitizing the killed bacteria before injecting them for protective purposes; freedom from the negative phase, freedom from local soreness, and freedom from marked systemic reactions, and more rapidly acquired immunity. Experiments in the British army demonstrated that antibody formation following a dose of unsensitized killed bacteria administered for the prevention of typhoid fever, requires several days, and does not reach its maximum until the ninth or tenth day. Experiments by Besredka and his followers demonstrated that the maximum immunity following an injection of sensitized bacteria is reached in from twenty-four to forty-eight hours.

DOSES.

What doses should be employed against typhoid fever? Want of experimental data on this subject makes of this a hypothetical question, requiring an answer of similar character. In the first place, if we accept Besredka's general verdict to the effect that sensitization confers upon bacterial vaccines certain properties which markedly increase their efficacy, whether prepared from living or killed cultures, we must apply the verdict to killed sensitized typhoid bacilli. Secondly, the doses successfully employed by Besredka's associates in treating typhoid fever are very much larger than the doses recommended by Wright and his followers for therapeutic use, when killed cultures are employed. Broughton-Alcock's impression from experience is that great value lies in large doses. He begins with 500 to 3,000 million killed gonococci, and has also found it to be a safe and beneficial procedure to commence with twenty million killed staphylococci and 200 million killed gonococci.

What dose should be employed in the treatment of infectious diseases? Gordon reported excellent results from the use of killed sensitized streptobacterin in a series of cases treated at St. Bartholomew's Hospital. He employed the "intensive" method, which consists of giving rapidly increasing doses at brief intervals. The doses in the four following cases illustrate his method:

CASE I. To a girl suffering from erysipelas, he administered 100 million sensitized streptococcus vaccine as the initial dose, twenty-four hours later 500 million, and on the following morning 1,000 million. Three days later the child was quite well.

CASE II. To a nurse with cellulitis of the scalp and cervical adenitis, was given an initial dose of 100 million, the following day 500 million, and twenty-four hours later 1,000 million. Two days later the erysipelas subsided, the temperature fell, and convalescence ensued.

CASE III. To a patient suffering with an acute attack of erysipelas of the forehead and cheeks, three successive doses of 100, 500 and 1,000 million sensitized streptococcic vaccine were given at twenty-four-hour intervals, followed by a prompt cure.

CASE IV. To a patient who suffered from a compound fracture of the lower end of the left humerus which had suppurated, and cultures from which showed streptococcus pyogenes, a single dose of 100 million (this may be a typographical error; possible 1,000 million is meant) sensitized streptococcus vaccine was given. The local condition improved and the pyrexia subsided.

The doses employed by Boinet in treating typhoid fever illustrates another system. He says: "The best results follow the use of doses of two c. c., repeated daily during four consecutive days, if the disease is grave, but three consecutive days if the disease is mild." He used the living sensitized germs.

In reporting cases, other observers, while careful to state intervals, neglect to inform us as to the size of the doses. Broughton-Alcock reports cases of gonorrhea, acne, sycosis, furunculosis, impetigo, and seborrhoic eczema, treated with appropriate sensitized living bacteria. In cases of acute and chronic gonorrhea without complications, the serobacterin was apparently without benefit. In cases of orchitis, epididymitis, and in gonorrheal arthritis and periarthritis, good results were invariably secured. In every case following the second injection, and in many cases following the first injection, the pain ceased and the swelling was notably diminished. The arthritis and periarthritis were arrested; to avoid relapse, the injections were repeated. It is important to know the size of doses and intervals, to give these reports proper educational value.

SUMMARY OF BESREDKA'S ASSERTIONS IN REGARD TO SENSITIZED BACTERINS.

1. They produce but slight local reaction (inflammation at site of injection).

2. They cause no general reaction (malaise, increased temperature, etc.).

3. They may be given in much larger doses and much more frequently than the unsensitized bacterins (every twenty-four hours).

4. The immunizing effect is almost immediate (manifesting itself within from twenty-four to forty-eight hours).

5. They sometimes give successful results in very late stages of a disease, when no response is

secured from the ordinary bacterins, and even serum treatment is ineffective.[3]

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AMEBIC DYSENTERY.*

With Special Reference to its Treatment with Emetine.

By Frank C. Yeomans, A. B., M. D.,
New York,

Adjunct Professor of Proctology, New York Polyclinic; Visiting Surgeon, Central and Neurological and the Workhouse Hospitals.

The scientific study of amebic dysentery dates from 1859. In that year Lambl, of Prague, described an intestinal ameba associated with "concomitant pathological processes in (the intestine of) children." Five years later, F. Losch observed and reported a case. During 1893-1895 S. Kartulis demonstrated in the Greek and Arab hospitals at Cairo the presence of amebas in every one of 150 consecutive autopsies on victims of dysenteric symptoms, while they were absent in those dying from other causes. A critical study by Councilman and Lafleur, in 1891, argued for the occurrence of two varieties of amebas—Amœba dysenteriæ, pathogenic; Amœba coli, harmless.

Fritz Schaudinn (1) in 1903 at Rovigno, on the Adriatic, with abundant fresh material, studied the life history and biological relations of the parasitic amebas. He showed that there may be parasitic in the colon of man two zoological species that vary widely in their morphology, life cycles, and modes of reproduction. One of these he termed Entamœba coli and showed it to be harmless; the other he named Entamœba histolytica, and found it to be pathogenic and the definite cause of amebic dysentery. This discovery and differentiation has been confirmed or accepted by the great majority of scientific investigators, including C. F. Craig, Flexner, and Rogers.

Viereck, in 1907, described a four nucleated cyst which he termed Entamœba tetragena, as characteristic of a pathological ameba. Craig has shown these cysts to be degenerative forms of Entamœba histolytica and probably rightly concludes that Entamœba tetragena and Entamœba histolytica are identical. We may, therefore, safely affirm that Entamœba histolytica is the sole cause of amebic dysentery.

[3] *Bulletin de l'institut Pasteur*, viii, 6, pp. 241-253, 30 mars, 1910.

*Read at a stated meeting of the Medical Society of the County of New York, Academy of Medicine, December 22, 1913.

OCURRENCE.

The disease is endemic, epidemic, and sporadic. It prevails particularly in tropical countries. According to Cook, of the Civil Hospital in Manila, thirty per cent. of all their patients have amebic infection, fifty of every 1,000 natives contract dysentery annually, and five of these die. Europeans are specially prone to infection.

Far from being confined to tropical countries amebic disease is endemic in most of the States of the Union, as was shown in 1909 by Patterson (2), who reported three cases originating in New York. Personally, I have seen more than 100 cases during the past eleven years. Most of these were soldiers and others returning from the tropics, but several patients had scarcely ever been outside of greater New York. Amebic patients from the tropics had, as a rule, received the usual forms of routine treatment, including ipecac, with transient improvement only or failure. Several of them later were clinically cured by flushing through an appendicostomy opening.

IPECAC.

In 1658, Piso brought ipecac root from Brazil to Europe. Helvetius used it with such success in the treatment of the Dauphin that it gained great popularity in dysentery. Its vogue waned, however, till just two centuries later, Surgeon E. S. Docker, by using massive doses, sixty grains of the powder two or three times a day in severe cases, reduced the former death rate at Mauritius, of ten to eighteen per cent., to two per cent. Since then physicians have recognized the merit of ipecac, when well borne, in the treatment of certain forms of dysentery, but the impossibility of administering therapeutic doses without distressing nausea and vomiting limited its use. Largely through Sir Patrick Manson's teaching, massive doses of ipecac have been quite extensively used again in recent years.

Following the demonstration by Rogers, in 1907, that ipecac will rapidly cure an amebic hepatitis in the presuppurative stage and so prevent the formation of liver abscesses, the administration of large doses of the drug returned to favor and good results were reported by Simon, of New Orleans, in 1909, and later by Dock and Brem and Zeiler, in Panama. Still, the distressing gastric symptoms prevented its use in many patients, even when administered in keratin or salol coated pills, and with opium, tannic acid, or chloral to control vomiting.

The contained emetine was recognized as the nauseating constituent of the ipecac so the deemetinized drug was exhibited, but proved worthless in dysentery. This naturally should have suggested emetine as the principle to be employed if a favorable way could be found for its administration.

According to the United States Dispensatory for 1907, the active alkaloids of ipecac are emetine, an amorphous powder discovered by Pelletier in 1867; cephaeline, which is crystalline, and a glucoside, ipecacuanhic acid. Emetine, the emetic principle, predominates in the Brazilian root, 1.5 per cent. to 0.5 per cent. of cephaeline, the expectorant constituent. In the Colombian root cephaeline predom-

inates, which explains the more favorable results in amebic disease with the Brazilian root. Hence, one grain of emetine is equivalent to about ninety grains of powdered Brazilian ipecac root.

The first recorded attempt to use emetine in the treatment of dysentery was by Surgeon Walsh (3) in India. He combined it with Mayer's reagent, thus obtaining emetine mercuric iodide (emetine one part, mercuric iodide two parts), which is inactive in acids and thus passes innocently through the stomach. In the *Indian Medical Gazette,* 1891, Walsh reported thirty-four cases of dysentery, of which one ended fatally, one was unimproved and thirty-two were cured clinically in an average of 4.9 days. His cases were diagnosed clinically, not by finding the specific ameba.

Not till twenty years later was Walsh's clinical evidence of the amebicidal action of emetine placed on a scientific basis, and then by Captain Edward V. Vedder (4), Medical Corps of the United States army. Vedder's conclusions were highly suggestive but not conclusive, for his experiments were conducted *in vitro* upon broth cultures of amebas obtained from tap water and from normal man, as Entemœba histolytica has not yet been grown on any culture medium. Among other purposes of Vedder's experiments, one was to determine to what constituent of ipecac its amebicidal action was due. He found that several preparations of ipecac in dilutions from one to 10,000 to one to 50,000 were amebicidal, while a preparation of deemetinized ipecac one to 5,000 failed to kill. Emetine killed the amebas in dilutions of one to 100,000, i. e., was twice as powerful as the fluid extract of ipecac. Vedder therefore believed it probable that the power of any given specimen of ipecac to kill amebas is in direct ratio to its emetine content. He also stated that "emetine acted on amebas deep in the tissues after absorption in the blood stream," and while being eliminated, in part, through the intestinal mucosa. "It was not shown that ipecac possesses any greater activity against dysentery bacilli than many other drugs," which is in harmony with clinical experience with emetine in dysentery due to the bacilli of Shiga and of Flexner.

The clinical application of Vedder's finding was made by Major Leonard Rogers (5), of Calcutta. He found that "on placing a piece of mucus containing numerous active amœbæ (histolyticæ) in normal saline solutions of this salt (emetine hydrochloride), the pathogenic organism is immediately killed, and materially altered in its microscopic appearance by a one to 10,000 solution, while after a few minutes they are rendered inactive and apparently killed, by as weak a solution as one to 100,000. Hence he decided to use the remedy hypodermically in amebic disease and reported his first cases in June, 1912. Two months later he reported twelve additional cases, including abscesses of the liver and one abscess of the spleen, which were cleared up by aspiration of the abscess and injecting into the cavity one or more doses of one grain of emetine dissolved in one ounce of saline solution. One of his other cases ended fatally on the third day after admission. Three and one half grains of emetine had been given, and autopsy showed a hopeless condition of a gangrenous cecum. However, scrapings from the intestinal ulcers failed to show a single living ameba, and sections of the walls of some of the more recent ulcers stained with hematoxylin revealed no amebas, although usually they are readily demonstrated by either of these methods. In November, 1912, Rogers (6) reported twenty-four consecutive cases treated by emetine subcutaneously, of which twenty were cured, two moribund patients died within three days of admission to hospital, and two died from other diseases after the dysentery was cured. The average period in hospital of cured patients was 7.2 days, average days before stools become normal 2.35, average grains of emetine to that time two. In Rogers' last communication (7), one year ago, he stated that he had seen no relapses.

Following the brilliant reports of Rogers, workers in all parts of the world have published their results, which as a whole are very favorable. Thompson (8) states that he has treated about 150 cases of dysentery with emetine at Colchar, India. He did not seek the pathogenic ameba, but considered the smaller number of his cases, on which the emetine had no effect, as bacillary. From his experience in the other cases, which embraced the majority, he concluded that the emetine treatment is "powerful, reliable, and scientific, the value of which it is hard to overestimate."

J. Preston Maxwell (9), in China, had good results in six acute, two subacute, and two chronic cases. He noted that the more active the amebas the better the drug seemed to act. Lyons (10), among others in America, reported six cases, of which five were cured and one ended fatally six days after admission with "gangrene of the entire large intestine (except a few inches of descending colon) perforation, and peritonitis"—a hopeless state for any treatment. The average number of days before the stools became normal was nine; the average amount of emetine used was 2.6 grains.

Baermann and Heinemann (11), of Sumatra, as the result of their experience in twenty-two selected cases observed over a long period of time, state that the dose of emetine chosen by Rogers does not destroy all the amebas and failed altogether in certain cases. They observed that the organisms usually disappear from the stools in from six to seventy-two hours, but often reappear four to seventy days later. They found that small and medium hypodermic doses caused no systemic disturbances, while after three or four large daily doses (120 to 150 mg.) malaise, vertigo, and anorexia supervened, but vanished with the elimination of the emetine in twenty-four to seventy-two hours. After preliminary experiments on animals they used the drug intravenously. Thus given, sixty to 200 mg. caused no serious associated symptoms, only slight dizziness, flushed face, and a little nausea, but large intravenous doses (300 to 400 mg.) produced in two to five minutes signs of severe shock with vomiting and diarrhea. They concluded that 250 mg. is the maximum dose for a body weight of sixty kilos and that 200 mg. is fully as efficient. The kidneys escape damage. A summary of their cases follows:

	Number cases.	Dose of emetine	Number doses.	Cases cured.	Emetine failed.	Died.
Subcutaneous.	12	[illegible]-120 mg.	1-6	6	1	5
Intravenous.	10	70-400 mg.	1-2	6	2	2
Total.	22			12	3	7

This mortality of thirty-two per cent. is no reflection on the value of the drug. On the contrary, more than half of the patients were cured in a series of severe chronic or acute fulminating forms of the diseases, the great majority of which, because of the profound toxemia, are foredoomed to failure by any method of treatment. Fortunately for us these severe types of amebic infection seldom occur in the temperate zones. One of their cases in which emetine given subcutaneously had failed, was cured by a single intravenous injection. It is also worthy of note that necropsy on the seven fatal cases showed the ulcers healed or healing in every instance, and stained sections through the ulcers were practically free of ameba, thus confirming Rogers's earlier statements. This paper deserves extended review because the work was done under conditions similar to Rogers's. Their reports of cases are complete and scientific, and very wisely, I think, caution us in our enthusiasm against mistaking a clinical for a permanent cure.

My personal observation and experience with emetine comprise seven cases. Three of these were treated at the proctological clinic at the Polyclinic Hospital, and I am indebted to Doctor Lynch for the privilege of reporting them; four were private patients. The first three cases illustrate the great value of the proctoscope in diagnosis.

CLINICAL CASES.

CASE I. P. M., male, aged forty-two years, applied to the clinic for treatment, May 13, 1913. First attack of dysentery occurred ten years before in Germany and lasted two weeks. Second attack, two years later in New York, was relieved by two months' hospital treatment. Third attack, one year before, lasted three months. Present illness was of three months' duration. He had from ten to fifteen stools a day, consisting mostly of blood, pus, and mucus and accompanied by colic. He had lost thirty pounds in weight. Proctoscope showed characteristic amebic ulcers with a large quantity of blood streaked mucus. Many active amebas were present. He received a total of 3.5 grains of emetine hydrochloride by needle between May 14th and 20th. June 6th, passed a normally formed stool once a day, without mucus. Proctoscope showed a normal mucosa. He was gaining weight. Five and one half months later he reported as feeling well. Bowels acted once a day only, but were very sensitive to indiscretions in eating and drinking.

CASE II. W. P., shoemaker, aged thirty-three years, applied for treatment July 21, 1913. In 1899, he contracted malaria and amebic dysentery in the Philippines. Passed twenty to thirty stools a day, mostly mucus and blood. These were reduced to three or four a day by two months' treatment in hospital. Past six years his stools had averaged six a day with mucus and dark blood. Felt weak and was about thirty pounds under weight. Proctoscope showed numerous ulcers, some small and round and others irregular. The intervening mucosa was thickened and edematous. Active amebas were present. Red blood corpuscles 3,800,000; leucocytes 18,000. He received six hypodermic injections, each one half grain of emetine hydrochloride, between June 27th and July 9th. Stools were reduced to two a day, soft and formed. On July 11th, the rectal mucosa appeared pale and anemic and the ulcers healed. Amebas were absent. He did not return for treatment.

CASE III. J. S., sailor, aged twenty-seven years, came to the clinic, July, 1913. Always well. Denied syphilis. About two years before he contracted amebic dysentery in Bombay. Treated by pills of ipecac which temporarily checked the diarrhea. Since then stools had varied from eight to ten daily in winter and one every hour in summer. Actions occurred hourly and contained mucus, pus, and blood. Weight, 140 pounds, normal 205. Proctoscope showed the rectal mucosa closely studded with typical amebic ulcers, the mucus from which contained many active amebas. He received an injection of one half grain emetine hydrochloride on seven successive days. During this time it was no less than marvelous to observe through the proctoscope the rectal ulcers melt before one's eyes, and finally disappear in ten days from the beginning of treatment. Stools became normal in number and character, and amebas disappeared. He reported to me five months later (December, 1913), that his bowels acted four to five times a day, but this number was increased by careless eating and hot drinks. He felt well and weighed 180 pounds. The proctoscope showed a few clean superficial ulcers, mucus from which contained many active amebas. (Recurrence.)

PRIVATE CASES.

CASE IV. J. S., aged eighteen years, contracted amebic dysentery in 1907. He had never been outside of New York. Had been under my care since March, 1908. He then complained of great weakness, a "bearing down" feeling in rectum, and the daily passage of about six stools, containing considerable blood with a little pus and mucus. Weighed 82 pounds. Cecum thickened and tender. Proctoscope showed diffuse ulceration which bled freely. Amœbæ histolyticæ were present. As improvement was slow, I performed appendicostomy June 29, 1909. Irrigations through the appendix made him very comfortable, stools were reduced to two daily, seldom containing any blood or pus. During the next four years he gained in strength, began work, and his weight reached 118 pounds. In September, 1912, following a suggestion of Brem and Zeiler, I administered through the appendicostomy opening for eight successive days sixty grains of powdered ipecac in starch paste with negative result. From October 16 to 23, 1913, he received daily one third grain emetine hydrochloride by needle. He still passed a little blood, but felt unusually well. Proctoscope showed ulcerated area clean, but granular. Six injections of one half grain given on alternate days last month, November, caused an increased number of stools which became normal, when the drug was stopped. Through the proctoscope the mucosa appeared nearly healed.

CASE V. Mr. R., aged thirty-three years, consulted me in September, 1911. Syphilis, five years before, treated by mercury and salvarsan; Wassermann is negative. Drank alcoholics to excess till he contracted lues. One year ago had first attack of "diarrhea" in Cuba. Relieved by "medicine." Present attack began six months ago. Had ten to twelve stools daily, containing little mucus, much pus, and blood, and many amœbæ histolyticæ. Cramps accompanied stools. Lassitude marked. Weight 170 pounds, a loss of twenty-one pounds in six months. Liver, diminished area of dullness. Colon did not feel thickened or tender. Proctoscope passed nine inches, showed diffuse superficial ulceration.

On October 25, 1911, I performed appendicostomy. Irrigated daily with normal saline. During the next five weeks he gained six pounds, stools diminished to three daily, felt comparatively well. May, 1912, patient returned from Cuba. Proctoscope showed comparatively few ulcers, superficial, irregular in form. Amœba histolytica present. Bowels acted only when patient irrigated. From May 21st to 25th, I injected daily through appendicostomy opening thirty to forty-five grains of powdered ipecac in starch paste. Marked irritability of colon resulted, but four days later he passed the first normal formed stool for a year.

During one week in May, 1913, he received in divided doses a total of four grains of emetine hydrochloride by needle at Havana and wrote, "I have felt better than I have in over two years. It has had a wonderful effect." Maintained improvement in part, but took a second course of emetine in June which benefited him. He returned to me from Havana in October of this year. Proctoscope showed few ulcers. During October and early November he received nineteen injections, one third grain each, of emetine. Improvement was most striking. He wrote me December [illegible] along all right. Have taken no irrigations for one month. Have one formed stool a day. Have gained three pounds in the past week." This patient has responded so favorably to the emetine that I anticipate an ultimate cure.

CASE VI. Dr. S., aged twenty-six years, consulted me April 30, 1912, complaining of chronic diarrhea. Always lived in or near New York. When five years old a suppurating hip joint was cured by operation. In his ninth

year he had scarlet fever complicated by nephritis. Diarrhea had been present three years, ten to twelve stools per day, three at night, containing much mucus and pus but very little blood. Former weight 120 pounds, now 107. Temperature normal. Wassermann reaction negative. Hemoglobin, 90 per cent. Proctoscope showed superficial ulcers in lower rectum, the discharge from which contained amœbæ histolyticæ. Upper rectum and lower sigmoid diffusely ulcerated and filled with profuse discharge. As routine treatment was without benefit June 17, 1912, I performed appendicostomy. During the five weeks following the operation, he gained six pounds and stools were reduced to three daily. Since then he has carried on his profession as a dentist regularly, weight has risen to 116.5 pounds, but he has had occasional setbacks. May, 1913, the proctoscope showed ulcerations nearly healed, but continued discharge indicated ulceration at a higher level. No amebas could be found. From May 10th to 16th, he received one half grain emetine hydrochloride daily by needle; result, nausea, increased frequency of stools, and loss of weight. Stools became formed later and averaged four daily with some mucus and occasional blood. Superficial ulceration was still present.

Case VII. Mrs. E., aged twenty-eight years, referred to me in February, 1913. Lived in New York and Long Island only for several years past. She was constipated, but during past six months had discharges of mucus, pus, and blood from the rectum, ten to twelve times a day, independent of stools, and with tenesmus at times. Weight had fallen from 120 to 108 pounds. Proctoscope showed everywhere old and new superficial ulcers with free discharge in which amœbæ histolyticæ were found at the second examination. On April her physician administered keratin coated tablets of emetine, but the nausea, vomiting, and depression were so severe that they were discontinued. Between October 25 and 28, 1913, I administered by needle a total of 2.5 grains of emetine. Stools were reduced to two daily, with very litle pus and no blood for first time since attack began. Tenesmus absent. At this writing her general and local condition were remarkably improved, but some ulceration was still present and patient was to receive another course of emetine.

SUMMARY.

Six of my cases were in males and one in a female. All were in adults, except one, a boy aged twelve years. Three contracted the disease in or near New York and one each in Germany, Cuba, the Philippines, and India. The disease varied in duration before treatment with emetine from six months to fourteen years. Entamœbæ histolyticæ were demonstrated in every patient. Other forms of treatment, including ipecac in four cases, had been employed in all patients with temporary benefit only. The total amount of emetine hydrochloride injected varied from 2.5 to fourteen grains, with an average of about three grains. Five patients were cured clinically, two were greatly improved, and none died. One of the "cured" cases recurred five months later.

The term, clinical, or apparent cure, is used advisedly, for experience shows that we cannot pronounce a patient really cured of this naturally chronic and intractable disease till a long period of time has elapsed without recurrence. It was no less than marvelous, however, to observe through the proctoscope the healing of the ulcers while the emetine was being administered. It would convince the veriest skeptic of the specific action of emetine in amebiosis, and is comparable only to the disappearance of syphilides after the use of salvarsan.

The operation of appendicostomy, which I performed on three of my private patients before the advent of the emetine treatment, was nothing short of a life saving measure and may still be valuable for irrigation in certain intractable cases where the ulceration persists after the amebas are eliminated.

The nonrecognition of amebic dysentery is due to failure to make proper examinations. So long as patients with chronic diarrhea are treated symptomatically, cases will be missed. Every patient who does not respond to a few days of ordinary treatment should be proctoscoped. The proctoscopic picture in acute amebic dysentery, if not pathognomonic, is certainly very characteristic. If ulcers are found, the discharge should be transferred directly from their surface to the warm stage of a microscope and examined immediately. The only absolutely pathognomonic sign of amebic dysentery is finding the pathogenic ameba in the microscopic field, after examination, repeated if necessary. In practice we are in accord with the dictum of Craig that, "whenever amebas are found in diarrheal or dysenteric stools, they may be safely regarded as pathogenic and their hosts treated accordingly." Amebic ulcers must be differentiated from other forms, as tuberculous, luetic, malignant, etc.

Failing the equipment to make a proper examination, Rogers has suggested employment of the "therapeutic test," i. e., two or three doses of emetine are given by needle. If decided improvement does not result we are probably not dealing with a case of amebic dysentery, for it has no beneficial effect on the bacillary and other forms of the disease.

ADMINISTRATION AND DOSE.

Emetine is used in the form of the soluble salt, Emetine hydrochloride, which is supplied by pharmaceutical houses in tablets of various strengths, also in the very convenient but more expensive hermetically sealed ampoules, containing the salt dissolved in sterile solution.

The average dose is one half grain of emetine hydrochloride, dissolved in ten to fifteen minims of normal saline solution and injected subcutaneously in the outer or back part of the arm over the deltoid. This dose is administered daily for three to seven days, depending upon the return of the stools to the normal in number and appearance, the absence of amebas, and the healing of the ulcers as shown by the proctoscope. Naturally there can be no fixed rule as to dose, as the cases are so variable. It is certain, however, that when the signs and symtoms indicate a clinical cure the administration of emetine should be discontinued, for an excess will in its excretion through the mucosa cause bowel irritation, as I experienced in two cases, just as will emetine when administered in solution per rectum. The only reaction to hypodermic doses of one third to one grain is local induration, which is tender for about one week. Rogers and others have reported good results from giving keratin coated pills of emetine by mouth. They caused severe emesis in two of my patients. I have had no experience with the intravenous injection of emetine and believe that it will be seldom, if ever, indicated in the class of cases seen in this latitude. During the treatment the patient has a bland diet and rests as much as possible, though confinement to bed seems unnecessary.

As a prophylactic measure, I believe that the stools should be disinfected as in typhoid fever, for the disease is contracted by ingestion of the ameba, and

I know of one instance at least in New York where several persons in the same family were infected from one member.

CONCLUSION.

In emetine we possess a specific for amebic dysentery in the same sense that quinine is specific for malaria or salvarsan for syphilis; when it is used at the onset of the disease, cure should be prompt and permanent in all cases. Naturally, when the amebas have invaded the tissues deeply and are widely disseminated, cure may be permanent or clinical only. After weeks, months, or years latent encysted amebas may reappear in an active vegetative form, accompanied by all the symptoms of an acute attack, just as the Wassermann reaction in syphilis may become positive after having been negative for a long time.

Hence amebic patients should be kept under prolonged observation and at the first signs of recurrence a course of emetine given. Because of the extensive destruction of the mucosa and the secondary infection of the ulcers with intestinal flora, mucus, pus, and blood in diminishing quantities may continue to be evacuated for some time after all amebas have disappeared from the stools. Irrigations and topical applications through the proctoscope will materially hasten the process of tissue repair.

While the story of emetine is still in the making, from the results already obtained one can safely state that, with proper precautions and certain reservations, another specific has been added to our armamentarium. It confers a boon on the west as well as the east and practically limits a widespread disease, that in many of its phases and complications has been of necessity surgical, to safe and practical medical treatment.

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230 WEST FIFTY-NINTH STREET

MAGNESIUM SULPHATE AND GLYCERIN IN THE TREATMENT OF INFECTIONS.

BY E. M. FREESE, M. D.,
Jamestown, N. D.

The use of a mixture of saturated solution of magnesium sulphate and glycerin in equal proportions for the cure of infections is not mentioned in any book, so far as I know. I came to use it the first time because I knew that saturated magnesium sulphate was used in sprains and inflammations to allay pain and abate swelling (Tucker, *Journal of Experimental Medicine*, May 25, 1907), and I knew that glycerin had been used for years in the form of tampons in pelvic troubles. I reasoned that a combination of the two drugs might reduce swelling, stimulate lymphatic circulation, and perhaps cause an increase of phagocytosis.

CASE I. J. D. A., aged sixty years, May 24, 1912, woodworker by occupation. June 6th he had accidentally run a sliver into the web between the first and second finger of the right hand. I saw him at midnight, June 14th, and found the hand and forearm swollen badly, red, and painful. The swelling seemed to be equal in all places, and no localized point where I could incise with hope of finding pus, though I was tempted to open on suspicion. I ordered the nurse to apply the solution of glycerin and salts hot, by means of saturated gauze, cover with impervious material (rubber cloth) and put a hot water bottle around the arm. I hoped for a subsidence in the inflammatory process, but I did fear trouble. The temperature at this time was 100.2° F., pulse 100. In a few hours the patient was resting comfortably with little pain. The solution was applied every three hours, to keep the gauze fully saturated. In twelve hours' time a very decided improvement was noted. The swelling was not nearly so hard, the redness was almost gone, and the arm free from pain. Improvement continued and in forty-eight hours the patient was discharged.

CASE II. Frank B., aged fifty years, August 29, 1912, injured August 27th, by a band cutter of a separator. The wound was across the dorsal surface of the proximal phalanx of the right thumb, a wound three cm. long, through the skin, extensor tendons, and head of the phalanx. I repaired the tendons and wound (after usual cleansing with gasoline, ether, and iodine) but, August 29th, I had to remove the stitches, freeing an accumulation of pus. The hand was swollen extensively, and I feared a grave infection. The temperature was 101° F., and pulse 100. I ordered the glycerin and salts solution applied hot continuously. The infection advanced no further and in forty-eight hours the hand was normal in appearance, the wound healed by secondary intention and a fair thumb resulted.

CASE III. Martin G., aged forty years, farmer, consulted me September 6th, with right leg swollen from foot to knee. Skin "tight," red, hot to the touch; tissues pitted on pressure over the tibia so tender that I thought at first that it might be an acute periostitis. He complained that it was very painful, so much so that he had been unable to sleep for two nights. On examining the heel I found an infected blister caused by a tight shoe. I opened this and found a few drops of pus. An examination of this pus showed staphylococci. I recommended that the patient go to the hospital for treatment and observation, but owing to business he felt that he must be on the farm. The druggist prepared a gallon of the glycerin and salts mixture, and I gave the patient directions as to use, and told him I would be out to see him the next day unless he telephoned me that it was unnecessary. The next day he telephoned that the pain was much better and for me not to come out. To my surprise, on the third day he came into the office without a limp. Examination of the leg showed all the swelling gone, and color normal. The temperature, which had been 102° F., was normal.

CASE IV. Miss G., aged twenty-six years, cook by occupation, consulted me concerning a "sore thumb," which, on examination, proved to be a felon. My partner opened it in the ordinary manner, under light chloroform anesthesia, which I administered. The patient was allowed to return home with a pint of glycerin and salts solution, and directions for use. The thumb was seen by Doctor Guest or myself from day to day, and a perfectly satisfactory recovery resulted.

CASE V. Ed. W., aged thirty-five years, seen at his home, thirty miles in the country, at midnight, December 18th. He was suffering from an infected arm. Examination showed the left arm swollen to half again its normal size. The region of the elbow was red, hard, pitted on pressure, red streaks ran from the elbow to the axilla.

where the axillary glands were enlarged and very tender. Examination of the hand showed three small "boils" on the dorsal surface. The forearm was swollen and tender. The patient was given a hypodermic injection of one fourth grain of morphine and ordered to the hospital. Entered the hospital December 19th at 8 a. m. Examined again, and in the region of the epitrochlear glands it seemed that incision was advisable, so great was the induration of the tissues. However, by this time my faith in glycerin and salts was so strong that I ordered the arm packed in the hot solution from the fingers to the shoulder. That morning the patient slept without a hypodermic injection, and on the morning of December 20th I was convinced that the knife was not needed. Even the three "little boils" were never opened. The temperature which had been 103° F., declined to normal, and the patient returned to his home, December 22d, with a normal arm.

Case VI. Mrs. M., aged forty-five years, consulted my partner January 20th. Felon on the right thumb, which had progressed for three weeks unattended. It had opened spontaneously, without discharging pus. A free incision was made, and my partner, still dubious of glycerin and salts, applied hot antiseptic dressings for two days and nights, with no abatement of pain and no apparent progress. I urged the glycerin and salts so strongly that the change was made, and the next day the patient said she liked the new medicine much better. Glycerin and salts were applied for a week, and with the removal of some necrotic tissue, a good recovery was made.

Case VII. Peter B., aged forty years, applied for treatment, May 3d. History showed that, April 28th, he had opened a small "pimple" on the dorsum of the first phalanx of the middle finger on the right hand. At this time the finger was swollen enormously, dark red, the hand was swollen very extensively, and red up to the wrist; lymphatic involvement up the arm, and axillary glands enlarged and tender. Temperature 102° F., pulse 106, headache, and "sick all over," as he described it. Treatment, incision on both sides of the finger, small amount of pus found, but tissue necrotic. Two incisions on dorsum of hand with a little pus. The hand was then placed in a splint, and to prove once for all to my associate, Doctor Guest, I applied a hot antiseptic solution for twenty-four hours. The only improvement was what would naturally follow the incision. I discarded the former mixture and applied hot glycerin and salts solution, and as usual, in forty-eight hours the axillary glands were normal, and I assured the patient that he could go home to the farm and continue the glycerin and salts for a day or two and get well. This he did, and made a very satisfactory recovery.

Case VIII. Mr. D. R., aged thirty-seven years, infected blister on the forefinger of the left hand, finger swollen tense, subdural collection of pus, lymphatic involvement in axilla, and red lines up the arm. Evacuation of pus in finger and packing the hand and arm in glycerin and salts. The patient that night slept for the first time in three nights, and in forty-eight hours was able to move the arm freely with no pain. Recovery uneventful.

Case IX. Mr. B., aged twenty years, complained of soreness in palm of hand and stiffness of the middle finger of right hand. Examination showed a pin point pustule in the palmar surface near the base of the ring finger, very tender. I opened the little pustule, but only got a single drop of pus. Going deeper into the tissues, I opened a small pocket, containing about ten or fifteen drops of pus. I was very much afraid that I was going to have a nasty case to deal with, for palmar infections are prone to be obstinate at times. However, I allowed the young man to go home forty miles with a good supply of glycerin and salts and instructions to return if the hand did not improve speedily. I did not see him again for weeks, and then learned that he had recovered with no trouble. Without the glycerin and salts I should not have allowed him away from easy reach. Examination of the pus showed staphylococci in large numbers, and some streptococci.

Case X. Eight year old girl. History of swelling beginning at angle of the jaw on right side, of two weeks' duration. Examination showed a brawny swelling from the temporomaxillary articulation to the clavicle, posterior to the mastoid and involving the entire cheek and side of neck. In the centre I could detect fluctuation, at which place I made an incision. About two ounces of pus and necrotic tissue were evacuated. The poor child truly presented a most pitiful appearance. I sent her home with a good supply of glycerin and salts, with a letter to her mother with instructions to keep her quiet, apply the medicine *hot* and keep hot, and to telephone me the results. I did not expect the child to have any unfavorable results, for the infection seemed to be well localized at least to one end, or one side of her. The mother telephoned me the next day that she was doing well. I instructed her to keep up the glycerin and salts for two or three days, which she did, and she then telephoned that the swelling was nearly all gone. The infection cleaned up rapidly, and a prompt cure resulted. I realize fully the good that the knife did in this case, but I do not think that the knife alone would have caused nearly the rapid resolution.

Case XI. A. H., aged twenty-eight years, barber by occupation. Three days before, while using a razor, jabbed the point of the blade into the flesh at the border of the finger of the left hand. When I examined the finger, it was red, swollen, and very tender. I could see the very small wound which the razor had made, though it had barely drawn blood. The hand was slightly swollen on that side, but there were three very distinct red lines to the elbow, and two from the elbow to the shoulder. The axillary glands were enlarged and tender, and he was unable to raise his hand to his head because of pain. The temperature was 102.5° F. With a very fine knife, I made an incision at the side of the nail, but there was no pus. I ordered him to the hospital, and there directed the arm to be packed from fingers to shoulder in hot glycerin and salts. I was very much afraid that I was going to have to deal with a general infection, probably streptococcic, for it was of rapid nature. Thanks to glycerin and salts, he was able to leave the hospital in forty-eight hours.

Case XII. C. L., of Kulm, N. D., farmer, aged thirty years, no history of infection and no sign of injury. The left forearm from the wrist to the elbow was red, hot to the touch, indurated, and tender. No point of fluctuation. Home physician had diagnosed erysipelas, but I regarded it as a plain cellulitis. He did not want to go to the hospital because he had spent a week in the hospital six months previous to that time, where Doctor Guest and I had operated upon him for tuberculous glands of the left axilla. However, I promised him that he could leave the hospital in forty-eight hours, and he consented to go. True to my promise, in forty-eight hours the swelling, redness, and pain were gone, and so was the patient.

Case XIII. A. C., aged twenty-eight years, infection of left hand, beginning in the ring finger. No known avenue of infection. The hand was swollen and discolored, and pus in the finger in the region of the first phalanx. Opened and evacuated the pus and applied the glycerin and salts. Two years previously he had had a very unfortunate experience of a like nature, in the same hand. Several scars were in evidence of the previous lancings, the hand had recovered. I promised that it would not need to be lanced again, and that instead of carrying the arm in a sling for two months, he could go to work in ten days or two weeks. He did that, for the infection subsided quickly.

Case XIV. J. W., aged sixty-five years; September 5th. Six weeks previously he had been bitten by a hog. The wound was at the base of the little finger. The home physician had lanced the finger several times. When I saw him, the finger was a sloughing mass. The hand was swollen badly, the forearm was inflamed, and I advised that it be treated for forty-eight hours, and then to amputate the finger. At the hospital I applied glycerin and salts for forty-eight hours, with very gratifying results. The arm and hand returned to normal color, and I then removed the finger, leaving the wound open, and again applied glycerin and salts for a day or two. The hand and arm never gave any trouble, even with the stirring up of the infected tissues necessitated by the amputation of the finger.

The next two cases were not my own. I recommended the treatment to Dr. J. R. Sprague, of Athens, Ohio. I quote a paragraph from his letter to me, dated December 7, 1913: "I tried your damn

prescription for infections, and it knocked me out of two good fees. One case was an infected thumb, and the other an infected finger, both with adenitis, and red streaks up the arm. They got well promptly, and I got only one visit fee out of each case. Now, Jim, if you give me any more prescriptions which cure so quickly, I will sue you for damages. It is all uncalled for." Such is Doctor Sprague's verdict.

I submit this to my fellow practitioners, in hope that some may try it, and if it is to them what it has been to me, they can cease to worry over infections.

In one year as interne at St. Francis Hospital, and twenty-eight months as house surgeon at Grant Hospital, Columbus, Ohio, I have treated a large number of infections, and I know that of all things from boric acid to Bier's hyperemic treatment, glycerin and salts has served me best.

TWO REMARKABLE CASES OF OBESITY.

By Julius Weiss, M. D.,
New York.

A lady, having heard of some fairly successful cases of reduction of weight by means of the Bergonié apparatus, applied for treatment in November, 1912, with the following history:

Case I. Aged twenty-one years, married; had a child two years before, when she began to increase in weight in spite of active household duties and, according to her statement, very moderate eating. This accumulation of adipose tissue progressed steadily so that, from a weight of 125 pounds at the time of her marriage, she increased to 325 pounds within a period of two years. The urine contained three per cent. of sugar, but was free from albumin and casts. No symptoms of organic trouble, outside of difficulty of heart action, owing to pericardial adiposity and, probably, fatty infiltration. The patient could not walk much owing to dyspnea on moderate exertion.

Evidently, under these circumstances, a severe gymnastic treatment, even of the passive type recommended by Professor Bergonié, was inapplicable. Having seen some good results from morphine in cases of fat diabetics, I prescribed one quarter of a grain of the drug morning and evening and a night pill containing compound extract of colocynth and strychnine to overcome the constipating effect of the medicine. The patient lost weight steadily during forty days, when she weighed 300 pounds, and the sugar content diminished to two per cent.

I lost track of the lady for six months, when her husband called me to see her on account of a nervous attack. On examination, I found my patient suffering from morphine intoxication, having formed the drug habit and having taken daily from five to eight grains. At the same time, to my utter astonishment, her weight was absolutely normal; she had lost all the adiposity that she accumulated during two years.

After a short treatment with the electric light cabinet, static breeze, outdoor exercise and regulation of the emunctories, the drug habit was readily eliminated and the patient's condition became normal. It remains to be seen whether, in the near future, the lady will again become fat.

Evidently we are dealing here with a case of grave malassimilation which might, possibly, be connected with deficient thyroid secretion. The loss of flesh is plainly to be attributed to starvation, as during the period of morphinism the patient could hardly be made to eat anything.

Case II. A lady who made her living from stage dancing, owing to enforced idleness, accumulated quite an amount of fat in the omentum and hips and applied for treatment on condition of achieving a reduction of thirty pounds within a month, so she could secure a theatrical engagement.

This result was obtained by means of the incandescent bath and the use of the Bergonié apparatus for forty minutes twice, and later, three times a day. With all this rapid reduction, the strength of the patient did not suffer; on the contrary, the muscles became firm and a feeling of well being, rather than enfeeblement occurred, with a total reduction of the gluteal and abdominal fat. A distinctly tonic effect was noticeable after the electric treatments. The patients feel so little discomfort that they can read a book or newspaper during the application. Starchy food was almost entirely taken away from this patient. I do not think that it would have been possible to effect this great reduction by any other known method.

The two cases cited are of interest from several standpoints. In the first case, life was threatened from cardiac collapse; and morphine, while not to be advised for general use in instances of obesity, might be justifiably employed in extreme cases, even at the expense of acute morphinism. On the other hand, the universal muscular contractions called forth by Bergonié's method of general faradization were entirely inapplicable in this case.

On the other hand, in Case II we have an example of daily reduction of useless fat, in spite of a liberal diet of soups, meats, and juicy vegetables. This case is remarkable for the rapid reduction accomplished and belongs to the large class of obesity patients who get fat from habitual overeating and want of exercise. Here Bergonié's electric apparatus produces wonderful results.

320 West Twenty-Eighth Street

THE TECHNIC OF OUTLINING THE THYROID GLAND.

By Malcolm S. [illegible] M. D.
Clifton Springs, N. Y.
(From the Pathological Institute of the Rudolf Virchow Hospital, Berlin.)

Since developing a systematic plan for outlining the thyroid, I have had the opportunity of measuring this gland before and after exposure, on thirty-seven fresh cadavera. The result of this experience necessitates some modification of the conclusions formerly published (1, 2).

If one follows the general plan previously described (2) in ascertaining the length of the lateral lobes, it is rather more convenient, owing to greater muscular relaxation, to have the chin not too greatly rotated.

In practically all cases, the length and width of the lateral lobes can be measured with a very satis-

factory degree of accuracy. The cadavera studied included infants, as well as adults of various ages. The width and thickness of lateral lobes are almost always greater opposite the isthmus itself or its upper border, than opposite its lower border, consequently measurements opposite the latter do not as a rule represent maximal dimensions, hence my former suggestion (2) that measurements be taken at this point should be abandoned. The real object to be sought, and one which is usually easily attainable, is to outline the entire gland rather than to make measurements at two or three selected levels.

In a few of the cadavera examined the lateral and pyramidal lobes and isthmus were outlined, and measured at numerous levels, and drawn before dissection, with satisfactory results. The palpable thickness of the lateral lobes in most instances (ninety-eight per cent. of the cadavera studied), if the measuring instrument is placed on the mesial side of the lobe, is approximately one half the actual thickness. If measured on the external side of the lobe, this ratio is less constant, as the muscles are not of uniform tone and thickness in different cases, and furnish an unstable base from which to measure. If the measurement is made on the external side, the entire thickness of moderately enlarged or hard lobes can frequently be obtained directly, whereas, even in these instances, the measurement taken on the mesial side usually remains about one half the actual. Measurements of the width and thickness of the isthmus can usually be made satisfactorily. The pyramidal lobe, when moderately developed, can be outlined, but when very small it offers much difficulty owing to its anatomical neighbors.

The dissections have shown quite conclusively that though mathematical accuracy is not attainable, a very trustworthy idea of even very small thyroids may be obtained if careful methods are used, and that soft, deeply situated thyroids may be of considerable size and escape correct observation unless carefully palpated.

I desire to express my thanks to Geheimrat Professor von Hansemann, and Professor Abram Kerr for the opportunity to study the thyroids of cadavera, and to Dr. Martin B. Tinker, in whose cases all surgical observations previously reported were made.

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Abstracts and Reviews.

COLLOIDAL REACTIONS AND THEIR RELATIONS TO BIOLOGY.*

By Prof. Sven G. Hedin,
University of Upsala.

When cane sugar is dissolved in water the resulting solution contains the sugar unchanged so far as its general chemical characters are concerned, but it is impossible again to separate the sugar from the solvent without recourse to some means other than the purely mechanical. Recovery of a crystalloid from solution involves a definite amount of energy; it is commonly held that a crystalloid in solution exerts a pressure on the solvent medium exactly proportionate to the number of its contained molecules, irrespective of the size of the individual molecule. The pressure exerted by the crystalloid in solution is commonly known as the osmotic pressure. Boiling and freezing are the ordinary means of recovering such a substance from its solution. Its presence in a solution raises the boiling point or depresses the freezing point to degrees proportionate to the number of molecules present. In solutions of the crystalloids, even when these bodies have enormous molecules, the molecules are not visible to the most perfect ultramicroscope, and they are not separable by any form of filter known. Such, in general, are the characteristics of the crystalloids.

In contrast with these phenomena are those of another group—the colloids. These bodies also enter into solution, but they do not follow the laws of the crystalloids. They do not exert any constant effect on the freezing or boiling points of their solvents; they do not exert osmotic pressure, and do not dialyse; they are present in the form of extremely large molecules, or collections of molecules; in some cases these molecules may be demonstrated optically by means of the ultramicroscope; and lastly, it is not necessary to resort to evaporation or freezing to recover the dissolved colloid from its solution. This can be effected by appropriate filters, or by means of the introduction of certain insoluble substances which attach the colloids to themselves by a process of adsorption. Solutions of colloids behave essentially like suspensions of insoluble powders.

If finely powdered charcoal is added to a solution of a colloid in a neutral solvent a large amount of the colloid will become attached to the charcoal and be removed from the solution. Colloid does not unite chemically with the charcoal, but is adsorbed by it, becoming attached to it physically. The degree of adsorption depends upon certain factors. Within certain limits, the longer the exposure to the adsorbing agent and the higher the temperature, the greater the adsorption. On the other hand, the amount adsorbed is independent of the quantity of water present, and the reaction is not reversible.

The animal body is made up of both colloids and crystalloids, but the former probably greatly predominate, both in actual amount and in importance. We shall deal with the reactions of some of these.

Certain enzymes, at least, seem to be colloids and behave toward solvents and adsorbing agents in the manner already mentioned. We have studied two of these in particular, trypsin and rennin. The substance upon which an enzyme acts is termed the substrate. When an enzyme is adsorbed by charcoal it loses its power of acting upon its substrate although the enzyme probably is not chemically altered. If, however, the substrate is capable of liberating a portion or all of the adsorbed enzyme from the adsorbing material, then the enzyme will exert its action on the substrate. Under these conditions, if both the substrate and an adsorbing

* Summary of a lecture delivered before the Harvey Society at the Academy of Medicine, New York, on January 24, 1914.

agent are present in the same mixture and the enzyme is added, no adsorption takes place. In many cases the liberating substance may act by reason of its own adsorption by the adsorbing substance; thus freeing a portion of the enzyme. This is shown by liberation of an enzyme which has been previously deprived of its enzyme actions.

Normal serum has been found to inhibit the action of trypsin, probably through adsorption, for it seems to act in a manner quite similar to that of charcoal. The same thing is true of egg white acting upon rennin. The inhibiting action of normal serum on trypsin is not specific in the sense that it is confined to the serum of the same species as that from which the trypsin was obtained.

Rennin is known to be present in the stomachs of normal animals, but its quantity is small. If an acid is added to a neutral solution obtained from a normal stomach, the amount of rennin present in a free and active state is greatly increased. If free rennin is allowed to act on white of egg in a neutral solution, the greater portion of the rennin soon disappears. If the rennin white of egg mixture is acted upon by dilute hydrochloric acid the rennin is again liberated and becomes active. These observations suggested the possibility that a zymogen may be merely a combination of the enzyme with some inhibiting substance—a colloid attached by adsorption to an inhibiting agent, analogous to the attachment of an enzyme to charcoal. Our experiments to test this theory may be recapitulated very briefly here.

By very careful methods we were able to obtain neutral extracts of normal stomachs of freshly killed animals—the acid was washed out before extraction by thorough perfusion of the organ in each case. These extracts were found to contain a very small proportion of free rennin. When they were acted upon by dilute acid a large amount of rennin was set free. When ammonia was then used again to neutralize the extract most of the free rennin disappeared. Quantitative observations determined that the acid is capable of liberating the rennin by destroying the inhibiting substance to which it is normally attached when it is in the state known as a "zymogen." Neutralization with ammonia, on the other hand, destroys some of the rennin which is attached to the inhibiting substance, and thus liberates an excess of this substance. We have been able to isolate the zymogen, the enzyme from it, and the inhibiting substance, and have been able to prove that the zymogen is probably merely the enzyme in combination with the inhibiting substance in the form of adsorbed colloid. The nature of the inhibiting substance has not yet been determined, for it has not been possible to isolate it in sufficiently pure form for identification

Though the inhibiting substance has not been obtained perfectly pure, we have been able to carry on several types of experiments with it and to determine some of its characteristics. As regards the zymogen of rennin only, the inhibiting substance has been found to be specific for the enzyme in so far as the animal species from which it is obtained is concerned. That is, the inhibiting substance obtained from the rennin zymogen of the pig, for instance, does not adsorb the enzyme obtained from the sheep, etc. One exception must be made, namely the case of the enzymes and inhibiting substances obtained from the calf and the sheep, between which there is a considerable mutual inhibition. Inhibiting substance from the sheep's zymogen partially inhibits the enzyme from the calf, and *vice versa*.

Cross inhibition between the substances obtained from these two animals may possibly to a certain extent be due to the close similarity which exists between the two animals—both herbivorous ruminants.

Pursuing this study of the inhibiting substance further, we have been able to immunize one animal to the ferment from another different species of animal, and the immune serum thus obtained is found to contain newly developed substances capable of inhibiting the enzyme of the species used for the immunization. This immune inhibiting substance is quite specific for the enzyme of the species which gave rise to it. It differs from the normal inhibiting substance present in the animal which yielded the enzyme in only one respect, namely, that it is destroyed by heating to 100°C., a temperature which is resisted by the normal inhibiting substance.

The specific actions of the inhibiting substances are not yet fuliy explained, but it seems likely that they are very closely related to the phenomenon of adsorption which is demonstrable with charcoal on the same enzymes.

It seems justifiable to state, at least with regard to the enzymes and zymogens studied, that the zymogen is merely a product made up of an inhibiting substance to which the enzyme is probably attached by virtue of adsorption, and that the enzyme is liberated by the action of some substance which destroys a portion of the inhibiting substance, or through displacement of a portion of itself through subsequent absorption of the substrate.

Continuous action of a small quantity of an enzyme upon a very large quantity of substrate may possibly be explained by supposing that the enzyme first enters into union with a portion of the substrate, destroys it with the production of certain substances which in turn are capable of liberating the enzyme again from the remainder of the products of the substrate, thus permitting it to act upon new, and unchanged, substrate.

Therapeutic Notes.

Prevention of Premature Loss of Hair.—D. Freshwater, in the *Practitioner* for October, 1913, asserts that thyroid treatment has a beneficial effect on hair growth, especially in cases of loss of hair associated with a dry and ichthyotic skin. In some cases of premature grayness, thyroid medication may lead to a return to the normal color. Pilocarpine does promote hair growth when taken by mouth or hypodermically, or used in an ointment. If one of the first two routes mentioned is employed, flannel should be worn regularly and care taken to avoid an excessive cardioinhibitory effect. Used externally, pilocarpine gives good results by stimulating the sebaceous glands and presumably also the hair growing apparatus.

In the local treatment of premature loss of hair,

shampooing every evening with an alcohol and green soap lotion, followed, after drying of the hair, by the rubbing of an antiseptic ointment in the scalp, is indicated. The patient should be warned that the frequent washing will cause an increased fall of hair at first, due to traction on already loose hair. This will prove advantageous, however, in allowing the follicles at once to produce new hair, which by efficient treatment may be strengthened and maintained.

After the first month of treatment, the measures indicated vary according to whether the hair is normally dry or greasy. In the former case the following formula is efficient:

℞ Acidi salicylici, ...gr. x (0.6 gram);
Hydrargyri chloridi corrosivi,..gr. ½ (0.03 gram);
Spiritus lavandulæ, ...℥iii (12 c. c.);
Alcoholis, ...℥i (30 c. c.).
M. Sig.: Rub carefully on scalp once or twice daily.

Shampooing need now be done only once a week.

After the lotion has been employed, as a rule, for eight to twelve weeks, and the disease is well under control, a pilocarpine lotion or ointment should be substituted for it. Resorcinol may be combined with this as antiseptic:

℞ Pilocarpinæ hydrochloridi, ...gr. vii (0.45 gram);
Resorcinolis, ...gr. xii (0.75 gram);
Spiritus lavandulæ, ...℥i (4 c. c.);
Alcoholis, q. s. ad .....℥i (30 c. c.).
M. et fiat lotio.

This lotion may be continued indefinitely as a daily dressing for the hair. If it is found too drying, the following may be prescribed:

℞ Pilocarpinæ hydrochloridi, ...gr. v (0.3 gram);
Resorcinolis, ...gr. x (0.6 gram);
Olei ricini, ...♏xx (1.25 c. c.);
Spiritus lavandulæ, ...♏cc (13 c. c.);
Alcoholis, q. s. ad .....℥i (30 c. c.).
M. et fiat lotio.

In cases where normally the hair is dry, and a large amount of scales are present, a tar soap may be advantageously prescribed for the shampoo, which is to be done twice a week. Daily use of an antiseptic ointment is indicated, to supply fat to the hair. This ointment, which should also contain sulphur, should be used daily for two or three months, when a change can be made to a pilocarpine ointment.

Massage of the scalp will produce brilliant results as regards regrowth of hair. The head should not be rubbed with the finger tips, but the tissues carefully and firmly pinched up between the fingers, the scalp being gone over thus in all directions.

Treatment of post abortum and post partum Infection.—J. O. Polak, in the *Long Island Medical Journal* for December, 1913, asserts that from a study of nearly 2,000 cases of puerperal infection he is convinced that the endometrium should never be curetted in streptococcic infection, and that curettement of the placental site is an important cause of pelvic thrombophlebitis. When the interior of the uterus is left undisturbed by instrumental or digital exploration, the infection generally remains confined within it, parametric and peritoneal complications seldom following. Except in abortion cases of less than seven weeks, where the uterus is retroflexed, absolute noninterference with the uterine cavity in all infections reduces the mortality and minimizes the morbidity. A uterus in its normal position, with its contents drained by posture (Fowler position), and its muscle toned up by ergot, pituitary extract, and ice, will rid itself of its contents and arrest bacterial invasion. Of 104 patients with puerperal infection treated along these lines, with the addition of an autogenous or polyvalent stock vaccine, only three died. Twenty patients had had a definite uterine content on admission, with more or less persistent hemorrhage. In the one case in which the latter was severe enough to require control, a firm cervicovaginal pack of iodoform gauze was employed. This was left in position twenty-four hours, at the end of which time a retained placenta was passed and the bleeding ceased.

Use of Isotonic Solutions in the Local Treatment of Gonorrhea.—Uteau and Saint-Martin, in *Presse médicale* for August 23, 1913, are credited with the statement that intraurethral injection of isotonic medicinal fluids, that is, fluids prepared by dissolving the antiseptic or other agent to be used in 0.75 per cent. saline solution, is better borne and generally occasions much less pain than where pure water alone is employed. Potassium permanganate, mercury oxycyanide, and the organic and colloidal silver preparations should all preferably be used in isotonic solution. No chemical change results from their dissolution with the sodium chloride, except in the case of the mercury salt, which, especially when the mixed solution is boiled, may set free minute amounts of mercury oxychloride, mercury bichloride, and sodium cyanide. In a large number of urethral and vesical irrigations or instillations made with isotonic solutions by the authors, better therapeutic results seemingly were obtained than with the ordinary procedure. Especially in early acute urethritis there was a marked difference, large irrigations with permanganate and colloidal silver causing no discomfort and proving more promptly curative. Instillations of silver albuminate, even one in forty strength, were found quite painless when normal saline solution was used as solvent.

Treatment of Obesity.—P. L. Tissier, at a recent meeting of the Société de Thérapeutique (*Paris médical*, July 5, 1913) stated that, having observed a pronounced loss of body weight in two patients suffering from infections and treated with colloidal metals, he was led to administer these agents systematically as remedies for obesity. The results were distinctly gratifying, the patients losing, on the average, 200 to 500 grammes a week. The most constant effects were produced by the metals of the platinum group, long known to have marked catalytic properties, in particular platinum itself, rhodium, iridium, and palladium. The appropriate dose varies in different individuals, and must be gauged according to the rule that where no reaction is produced, no action will result. A rise in temperature and modifications in the output of urine best characterize the presence of the reaction. In general, by progressively increasing the dose, one soon ascertains the exact amount required.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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RADIUM AND MEDICAL ETHICS.

Health Commissioner Goldwater has been impelled to issue a public warning against the founding of too great hopes upon the achievements of the radium therapeutists as interpreted by the daily papers. The latter have lately been indulging in ironical comment concerning the objections of the medical profession generally to the sensational exploitation of the imagined triumphs of radium, and have attributed them, as usual, to jealousy of the advertising secured by the enthusiasts. We suppose that it is useless to repeat that the code of ethics was formulated and adopted chiefly for the protection of the public, and no more striking example of the wrong done the latter by premature reports could be imagined than in the case of radium. Hundreds of cancer victims have traveled at ill afforded expense to the various centres, only to find that their cases were intractable and to be thrust back into a state of hopelessness worse than before.

Strictly speaking, from what we actually know of radium it is not possible to say that it will eradicate cancer. Its physical properties are fascinating to watch and magical in effect. A fraction of a milligram will send rays through the thickness of a man's hand and cause a fragment of willemite—a zinc and silicon oxide—to glow with an unearthly greenish lustre; it was not logical, but it was perhaps fortunate that some one decided to try this picturesque and penetrating property on malignant growths. Undoubtedly radium has a selective action on cancer cells, and as a palliative, an antidote to hemorrhage and foul odor, and a general sedative, it is unique. There is a powerful and dangerous constitutional reaction after some weeks' use, which, it is hoped, we shall soon learn to control. The absence of results noted in the past are with plausibility laid to the fact that quantities much too small were used; in many instances less than ten per cent. of what the operator imagined he was handling. In other chronic conditions, notably arthritis deformans, the operators speak with enthusiasm of the effects of the new element; limbs hitherto stiff and unyielding having given way before the insinuating gamma ray. Such results lack the sensationalism necessary to a good newspaper story; consequently the profession has been spared a rush of "rheumatic" individuals who have already prescribed radium for themselves and desire the doctor merely to fill the prescription.

While, therefore, we cannot say at present more than that radium is probably a valuable adjuvant to the surgeon's knife, we await with interest its effects in possible recurrences of malignant growths, when it will become possible to fix its status absolutely. Meanwhile we feel that the medical profession knows better what to do with medical facts than the best intentioned newspapers, and enthusiastic or poetically minded individual physicians who allow themselves to be so carried away by a few isolated cases of amelioration as to sing hosannas publicly to a therapeutic agent, do only harm to themselves, to the body of the profession, and to the hapless victims of cancer.

THE DIAGNOSIS AND TREATMENT OF DIABETES.

Diabetes is one of the many diseases the incidence of which is believed to be decidedly on the increase. The appearance of sugar in the urine is virtually a death sentence in the minds of most patients and physicians, while the insurance examiner deems the unmistakable presence of sugar a cause for rejection in the majority of cases examined. We need only peruse, however, Garrod's list of the conditions which may cause glycosuria to become impressed with the need of circumspection before a diagnosis of diabetes is vouchsafed. These possible causes—excluding all transitory toxemias—are as follows: Morphine, atropine, strychnine, curare, amyl nitrite, copaiba, phosphorus, bichloride of mercury, all used therapeutically; uranium salts,

phlorrizin, acetone; poisoning by coal gas, carbon monoxide; accumulation of carbon dioxide in respired air; alcohol, especially in champagne, and beer; thyroid extract, epinephrine; cold immersion, as in attempted suicide by drowning; inanition, as in "vagabond glycosuria"; psychic strain or shock; apoplexy, convulsions, traumatism, cerebral tumors, meningitis (meningococcal and tuberculous), syphilitic affections of the brain, general paralysis of the insane, tabes, paralysis agitans; malarial fevers, phlegmonous diseases; hepatic cirrhosis; cholelithiasis; hemorrhagic pancreatitis; necrosis, carcinoma, fibrosis of the pancreas; catarrhal pancreatitis; intestinal disorders due to corrosive poisoning, enteritis, colitis; exophthalmic goitre and myxedema; acromegaly and gigantism; pregnancy, tumors of the uterus and ovaries; renal affections, functional and organic, and finally, chyluria. We know also that indiscretion in diet, worry, anxiety, and overwork are prolific causes. On the whole, it is self-evident that careful elimination of a multitude of etiological factors is obligatory before a diagnosis of true diabetes is made in the absence of the other symptoms of the disease—which symptoms seldom occur early.

Again, and worse yet in its actual results—as occasionally witnessed by consultants—is the fact that the presence of sugar is still too often the signal for a "strict carbohydrate-free diet," a method of treatment which in most instances converts the possibility of death into a certainty, owing to the deprivation of functional pabula to which the tissues at large, particularly the muscular system, are subjected. Modern work has shown that not all carbohydrates should be incriminated; that even a single one of them, wheat flour, in most instances, may be the cause of the glycosuria, the whole picture changing as soon as its use is discontinued. Briefly, the scientific recognition and treatment of diabetes today should not be a mere matter of routine; both demand a close scrutiny of the cause of the metabolic defect the disease indicates and elimination of that cause, but the physician should always bear in mind that any change of diet instituted must be such as to preserve the functional equilibrium of all tissues implicated.

WILL THE PHYSICIAN'S TURN COME?

If a retail firm of pharmacists may not order by mail from the manufacturers a quantity of heroine, apparently the sale of the drug is absolutely to be stopped by every means in the power of the government; otherwise the recent action of the authorities in arresting the manager of a large manufacturing company for shipping the drug by mail would be without point. Obviously a physician innocently ordering a dram of heroine for the use of his patients might find himself under the present ruling, in a most unpleasant predicament; and if the prescription of medicine is to be interfered with by every minor postal clerk, or still worse, if a real *agent provocateur à la russe* is to be permitted to entrap physicians, patients, and pharmacists, totally innocent and unsuspicious of wrong, we may ask what privileges as guardians of the public health are to be left to us? Unless there are circumstances behind this arrest that altogether change the nature of the case, it is difficult to imagine a more high handed and outrageous interference with personal liberty and professional rights.

HEALTH AND LAWS.

In *Public Health Bulletin No. 54*, Washington, 1912, we have a general account of the laws relating to the "organization, powers, and duties" of health authorities. It is written by competent experts, Dr. J. W. Kerr, assistant surgeon general, and Mr. A. A. Moll, and the exact province chosen for exploration is that vast field of verbiage lying about the State and Territorial statutes. Such an outpouring as this exacts a patient exercise of our discrimination if we are to seek out the law's enveloped meaning. Legal indigestion is a malady of American civilization, and the authors weigh the evidence with an even hand, wisely leaving the critic to his reflections on the exhaustive and exhausting process. It is clear, we think, that a State or Territorial statute is not necessarily a command or positive law until it is confirmed by the courts. If it is wrongfully applied or if it clashes with the constitutional rights of the citizen it is so much waste paper. Its possibly beneficial character is not the question, and does not come in this context. It is this special subject which we should like to see treated and we are glad to note the promise of another volume dealing with the law of specific cases "such as communicable diseases, nuisances, etc."

The material of this volume consists of an excellent digest, and appendices containing judicial opinions and a compilation of the laws of all the States. These laws seem to have no special connection save the shallow topical connection between States. We find a difficulty in tracing a principle of unity that offers a basis for the edifice of a National statute. The influence of different branches of the Federal government can be seen in various places, but it is unhappily apparent that the States are not guided by a single motive, and we see no attempt to reconcile the antinomies of law and Nationalism. Take, for instance, the law as to health

commissioners. It is briefly stated in terms of fact, not of belief. "The majority of laws in force emphatically require his being a physician; others, in addition, demand experience; some a knowledge of sanitary science; a few familiarity with public health administration; while in a small minority no attempt is made to fix standards for qualification." On the other hand, the law in some States is, that a health commissioner should be "a suitable" person, one "versed in bacteriology and sanitary science," an "expert in the diagnosis of infectious diseases," and "educated." All that is wanted is here, but each community works up the material to suit its needs. This instance serves to point the contrast between law and medicine. The public sees nothing strange in having Federal courts and Federal judges, but we imagine that a Federal Health Commissioner would seem the height of tyranny.

ACCURACY IN CLINICAL THERMOMETERS.

Approving comment has been made by a large and responsible manufacturer of clinical thermometers, on the editorial criticism of those instruments in our issue for December 20, 1913. He points out that the doctor should select a dealer upon whom he can rely, and furthermore demand a thermometer bearing the name, not of the dealer, but of some responsible manufacturer. Carefully made thermometers, guaranteed not to vary more than 0.25°, are sold retail at prices varying from fifty cents to $1.25, but the profit on these is close; the dealer is therefore tempted to sell a thermometer with his own name thereon, an article he may buy for twenty-five cents and sell for $1.25 or even more. As to the proper method of taking a patient's temperature, that is another question to which we shall return. Meanwhile let the doctor remember to require a good name on his thermometer.

A REPORT FROM THE LYING-IN HOSPITAL.

A clinical report under date of January, 1914, of the work of the first division of the Lying-in Hospital of the City of New York, gives probably a fair idea of what is accomplished at that excellent institution. In part the report states that during the year with which it deals, 1,474 women were admitted to the wards of the first division. Of these, according to the nomenclature recognized by the hospital, 1,225 were classed as "confinements." These include 1,099 women actually confined at or near term, thirty-eight admitted during the first ten days of the puerperium, eighty-six abortions, and two ectopic gestations. In addition there were forty-eight puerpera admitted more than ten days post partum, these not ranking as "confinements" under the nomenclature, 103 pregnant women admitted and discharged not in labor, and ninety-eight cases admitted to the gynecological service. Admissions to the ward gynecological service are restricted to women previously confined on the outdoor or indoor maternity service, and to cases of sterility. There were fourteen maternal deaths among the 1,099 women confined in the hospital, a mortality of 1.27 per cent. There were five deaths among the women confined by private physicians and midwives and sent into the hospital post partum with developing puerperal infection. There were also four deaths from septic abortion, and three after gynecological operations.

Of the fourteen women who died after delivery, five had been subjected to attempts at instrumental delivery before admission, two of them being admitted with ruptured uteri. Four died after delivery by Cæsarean section; two after craniotomy; one after high forceps; two after accouchement forcé for eclampsia; two after version, one from a spreading peritonitis after appendicular resection; and two after spontaneous delivery, one of these of tuberculosis and one of empyema.

WASSERMANN REACTION IN AORTIC DISEASE.

A. Gilbert and L. Brin report in *Paris médical* for October 25, 1913, that they have applied the Wassermann reaction in a number of cases of aortic disease, which they divide into three groups: 1. Pure aortic insufficiency, with characteristic basal murmur, Corrigan's pulse, and peripheral symptoms, but no clinical or radiographic change in the ascending aorta; 2, simple aortitis without dilatation, and with or without (Hodgson's disease) signs of aortic valvular insufficiency; 3, aortic aneurysm. The first condition showed a positive Wassermann reaction in three out of nine cases; the second, fourteen out of fifteen; and the third, four out of four. Combining these figures with the statistics of other observers, the corresponding results in the same groups of cases are respectively, sixteen out of thirty-one, or fifty-one per cent; twenty-seven out of thirty-two, or eighty-five per cent.; and fifty out of fifty-five, or ninety-one per cent. There was no rheumatic history in the three cases of pure aortic insufficiency reacting positively. Although a positive Wassermann reaction does not prove the syphilitic nature of a visceral disorder, this is partly counterbalanced by the fact that not all syphilitics show a positive Wassermann reaction. In any event, syphilis must be accorded an important place, like acute rheumatism, in the causation of aortic insufficiency, while chronic aortitis, Hodgson's disease, and aortic aneurysm must be attributed to syphilis in the vast majority, if not all cases. It is necessary to keep under close observation the heart and aorta in syphilitics, especially in long standing cases, in order that, by specific treatment of any early local involvement, the latter may be overcome or at least arrested. In more advanced disease, though cicatricial tissue will generally remain unaffected, the gummatous or sclerogummatous lesions often existing at the periphery of a dilated aorta will be influenced as usual.

News Items.

A Pellagra Hospital in South Carolina.—The South Carolina State Senate has reported favorably on a bill appropriating $35,000 for the establishment of a State hospital for the study and treatment of pellagra. The new hospital will be situated in Spartansburg.

The Harvey Society Lectures.—The eighth lecture in the course will be delivered on Saturday evening, February 14th, at the New York Academy of Medicine, by Professor J. J. R. MacLeod, of Western Reserve University, Cleveland, on Recent Work on the Physiological Pathology of Glycosuria.

Prenatal Clinic at the Peter Bent Brigham Hospital.—On Thursday afternoon, February 5th, the Milk and Baby Hygiene Association opened the Prenatal Clinic at the Peter Bent Brigham Hospital, Boston, which is to be conducted in cooperation with the hospital authorities. Dr. A. B. Emmons, 2d, is physician in charge of the new clinic, and already four patients have applied to him for advice.

Tri-State Medical Association.—The sixteenth annual meeting of the Tri-State Medical Association of Virginia and the two Carolinas will be held in Wilmington, N. C., on Wednesday and Thursday, February 18th and 19th, under the presidency of Dr. Southgate Leigh, of Norfolk, Va. Other officers of the association are: Vice-presidents, Dr. Augustus B. Knowlton, of Columbia, S. C., and Dr. Alfred L. Gray and Dr. Andrew J. Crowell, of Charlotte, N. C.; Dr. Rolfe E. Hughes, of Laurens, S. C., secretary and treasurer.

Medical Association of the Greater City of New York.—A stated meeting of this association will be held on Monday evening, February 16th, in Du Bois Hall, New York Academy of Medicine. The programme will include the following: Address by the retiring president, Dr. Reynold Webb Wilcox; address by the president elect, Dr. Thomas M. Southworth, on Some Observations on the Child of Today; a paper by Dr. William H. Porter on the Value of Cocaine in Disturbances of Metabolism. A general discussion will follow.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, February 16th, Philadelphia Clinical Association and the Medical Society of the Woman's Hospital; Tuesday, February 17th, West Branch of the Philadelphia County Medical Society and the Philadelphia Laryngological Society; Wednesday, February 18th, Section in Otology and Laryngology of the College of Physicians and the Mount Sinai Hospital Clinical Society; Thursday, February 19th, Section in Ophthalmology of the College of Physicians and the Northeast Branch of the Philadelphia County Medical Society; Friday, February 20th, Southeast Branch of the Philadelphia County Medical Society.

A Dinner to Doctor Biggs.—Dr. Hermann M. Biggs, the newly appointed State Commissioner of Health, was the guest of two hundred prominent physicians at a dinner given in his honor at the Biltmore on Saturday evening, February 7th. Dr. George David Stewart was toastmaster, and addresses were made by Dr. William H. Welch, dean of the medical faculty of Johns Hopkins University; Dr. William H. Park, head of the bacteriological department of the Department of Health of the City of New York; Borough President Marcus M. Marks, and Mr. Robert W. de Forest. Among those present were Dr. Stephen Smith, Dr. A. Jacobi, Dr. W. M. Polk, Dr. T. M. Prudden, Dr. J. Winters Brannan, Dr. Thomas Darlington, and Dr. Reginald H. Sayre.

New York Academy of Medicine.—At a meeting of the Section in Medicine, which will be held on Tuesday evening, February 17th, the programme will include a report of a case of auricular flutter with electrocardiogram, by Dr. R. H. Halsey, and the following contributions from the medical wards of Lebanon Hospital: Gangrene of the Lung, by Dr. Abraham Mayer; Traumatic Epilepsy of Five Years' Duration, by Dr. William Leszynsky; Gaucher's Disease in a Boy Thirteen Years Old, by Dr. Charles Herrman; Cerebral Syphilis, by Dr. Richard Stein; Large Aneurysm of the Aorta, by Dr. Selian Neuhof; Typhoid Fever Complicating Malaria, by Dr. Carl Goldmark; Chronic Pyloric Ulcer with Hemorrhage and Obstruction, by Dr. Seymour Basch.

Civil Service Examination for the Position of Sanitary Supervisor.—The New York State Civil Service Commission will hold open competitive examinations for the position of sanitary supervisor, State Department of Health, in various cities throughout the State, March 7, 1914. The examination is open to both men and women. Intending competitors must execute proper application blanks and file them in the office of the commission on or before March 2d, and application blanks will not be sent out after February 28th. Candidates must be physicians, not less than twenty-eight or more than sixty years of age when appointed. The position carries a salary of $4,000 a year. For full particulars regarding the scope of the examination and for the proper application blanks address the State Civil Service Commission, Albany, N. Y.

Resolutions on the Death of Doctor Turner.—At a meeting of the medical board of the Norwegian Deaconesses' Home and Hospital, Brooklyn, held on February 4, 1914, the following resolutions were adopted:

WHEREAS, We have learned with regret of the death of Henry Cushman Turner, M. D., founder and dean of the Norwegian Deaconesses' Home and Hospital;

Resolved, That the medical board record the sentiment of its members, especially those who worked with him in his hospital service, that a worthy conscientious, painstaking, cultured physician has passed away. Be it further

Resolved, That a copy of these resolutions be sent to his family, the medical press, appear in the yearly report, and be entered in the minutes.

ROBERT E. COUGHLIN, M. D., *Committee Chairman.*

Medical Society of the Missouri Valley.—The twenty-sixth semiannual meeting of this society will be held at Lincoln, Neb., on Thursday and Friday, March 26th and 27th. A programme which will be of interest to both specialist and general practitioner is in course of preparation, including orations in medicine and surgery. A symposium on diseases of the eye and a clinical session at the State Orthopedic Hospital will be features of the second day of the meeting. Preliminary programmes will be issued shortly. The officers of the society are as follows: President, Dr. Flavel B. Tiffany, of Kansas City, Mo.; first vice-president, Dr. Granville N. Ryan, of Des Moines, Iowa; second vice-president, Dr. Austin McMichael, of Rock Port, Mo.; treasurer, Dr. O. C. Gebhart, of St. Joseph, Mo.; secretary, Dr. Charles Wood Fassett, of St. Joseph, Mo.; committee of arrangements, Dr. A. L. McKinnon, chairman, Dr. R. B. Adams, and Dr. R. L. Smith, all of Lincoln, Neb.

Personal.—Dr. Emil Abderhalden, professor of physiology in the University of Berlin, has received a call to lecture at Columbia University. He will begin his lectures here next fall.

Professor William E. Castle, of Harvard University, has been reappointed a research associate of the Carnegie Institute for a period of five years, with an annual grant of $2,500, in support of his researches in heredity.

Medical Inspector William C. Braisted, United States Navy, was appointed surgeon general of the navy on February 6th by President Wilson, to succeed Surgeon General Charles F. Stokes, whose term of office expired on February 7th. Surgeon General Braisted is at present on duty as fleet surgeon of the Atlantic fleet.

Dr. Royal S. Copeland, dean of the Homeopathic Medical College and medical superintendent of Flower Hospital, was elected president of the Michigan Society of New York at its annual meeting held on January 21st.

Dr. Joseph H. White, of the United States Public Health Service, and at present in charge of the United States Marine Hospital at New Orleans, La., has been appointed chief sanitary officer of the Isthmian Canal Commission, succeeding Dr. William C. Gorgas, who was recently appointed surgeon general of the United States Army.

Dr. Henry L. K. Shaw, of Albany, has been appointed head of the division of child hygiene of the New York State Department of Health. Dr. Augustus B. Wadsworth, of New York, has been made head of the department of laboratories.

Dr. M. L. Graves, of Galveston, Texas, president of the Texas State Medical Association, and Dr. Holman Taylor, of Fort Worth, secretary and treasurer of the organization, were the guests of honor at a luncheon given recently by the Harris County Medical Society.

Smallpox and Vaccination.—With the intimate relations which New York city has to the rest of the State, it cannot be but disquieting to learn that so far this winter more than 250 cases of smallpox have occurred in the city of Niagara Falls. The spread of this disease in that city is due entirely to the continued neglect of vaccination following a persistent campaign of misrepresentation by the antivaccinationists. The result is always the same; an unvaccinated community is sooner or later ravaged by smallpox, and thus made to pay the price of its folly.

In connection with this subject the department of health calls attention to the fact that according to a recent decision of the Appellate Division of the Supreme Court of New York, children must be vaccinated before they attend school.

Mortality Statistics of New York.—During the week ending February 7, 1914, there were 1,503 deaths and a rate of 14.04 in 1,000 of the population reported, against 1,568 deaths and a rate of 15.23. The following causes showed a decreased mortality: Lobar pneumonia, bronchopneumonia, whooping cough, diarrheal diseases under five years of age, Bright's disease and nephritis, diseases of the nervous system, and violence. The following causes showed an increased mortality: Measles, diphtheria and croup, organic heart disease, and pulmonary tuberculosis. The number of deaths from typhoid fever and from scarlet fever was the same as in the corresponding week of 1913. Viewed from the point of age, the mortality under one year showed a decrease of 16 deaths, that of children under five years of age a decrease of 46 deaths, between the ages of five and sixty-five years a decrease of 71 deaths, while, on the other hand, among the aged there was an increased mortality of 52 deaths. The death rate for the first six weeks of 1914 was 14.62 in 1,000 of the population, as against a rate of 14.68 for the corresponding period in 1913.

Hospital for Contagious Diseases in the Borough of Queens.—On February 6th the Board of Estimate and Apportionment took action directing the Department of Health of the City of New York to proceed immediately with the construction of a hospital for contagious diseases on the site bought by the city for this purpose eleven years ago. The petition of taxpayers and residents of Jamaica, protesting against the establishment of the proposed hospital, was denied after a report was presented by the Commissioner of Health in which he declared that diligent search had failed to demonstrate the availability of any substitute site of a suitable character. Up to the present time, it has been necessary for the Department of Health to transfer to its hospitals in the Borough of Brooklyn and the Borough of Manhattan cases of contagious disease developing in Queens and requiring hospital care. In twelve months, 141 transfers of this character were made. The distant locations of the hospitals hitherto available made such transfers difficult and dangerous.

It is reported that landowners and other persons prominent in Flushing and Jamaica have decided to raise a fund to bring legal action to prevent the establishment of this hospital, and it is expected that a heated contest will ensue.

Society for the Advancement of Clinical Study in New York.—During the summer of 1912 a joint committee composed of committees from the New York Academy of Medicine, the Obstetrical Society, the Surgical Society, the New York Society Association for Advanced Medical Education, and the Medical Society of the County of New York, organized to formulate some plan for making the vast amount of clinical material in New York readily available to visiting and resident physicians and surgeons. While the Academy of Medicine was strongly in favor of such a project, the necessary funds were lacking for carrying it out, and the Society for the Advancement of Clinical Study in New York was organized. In January, 1913, this society established a Bureau of Clinical Information at the New York Academy of Medicine and has since that time carried on the work of daily posting of operations on the Hospital Bulletin Board, and the maintenance of a bulletin for regular fixed clinics. The society is entirely dependent for funds upon its membership and hospital subscriptions. Resident membership is $10 a year; nonresident, $5 a year. Physicians of New York and vicinity are urged to join the society and thus aid in carrying on the work of rendering available the clinical material in which New York is so rich. Communications should be addressed to the secretary, Dr. George Gray Ward, Jr., 17 West Forty-third Street, New York.

Pith of Progressive Literature.

CORRESPONDENZBLATT FUR SCHWEIZER AERZTE

Appendicitis.—C. Roux, in his inaugural address as president of the Swiss Surgical Association, urges closer cooperation between the surgeon and physician in cases of appendicitis, and that the latter should not delay to call in the former until operative treatment has become imperative. F. de Quervain dealt with the statistics of appendicitis throughout Switzerland, illustrating the data by means of a colored chart. These two papers were discussed very fully by a number of surgeons, all of whom agreed that a patient with appendicitis should belong to the surgeon on the first day of the attack, and that the fate of the patient lies in the hands of the physician who sees him at that time.

Embolism of Femoral and Deep Femoral Artery Successfully Operated On.—Hermann Matti reports the case of a man seventy years old with heart disease and disturbance of compensation, who suddenly had an attack of intensely severe pain in his right foot and leg. A pulse could be felt in the femoral artery down to three mm. below Poupart's ligament, but the circulation was completely cut off below that point. The skin was white and waxy, like that of a cadaver, up to the middle of the leg, and cold as high as the knee. There was no sensation up to a handbreadth below the knee, and the patient could not move his toes. Under local anesthesia, novocaine one per cent. with adrenaline, the femoral artery was cut down upon and found to divide into a femoral proper and a deep femoral, both of which were occluded by a thrombus. Several plugs were removed, and finally a fresh clot fifteen cm. long. Circulation was restored at once, except in two toes. A review of the literature follows, whence it appears that similar cases have been reported only ten times, and that this is the third successful one. It is particularly noteworthy because of the age of the patient

MEDIZINISCHE KLINIK.

Intravenous Injection of Arthigon.—R. Frühwald found that 0.04 to 0.05 gram arthigon injected intravenously into women having gonorrhea produced in the majority of cases a reaction, of at least 1.3°C. rise in temperature, while women not having gonorrhea showed no reaction. The reaction must be considered specific, and made use of together with microscopical findings. Reaction is no doubt due to the presence of gonococci, not to a previously healed gonorrheal infection. As repeated injections compromise the reaction, it is to be considered positive with the first injections only. It is possible that the reaction will achieve the healing of the infection in women.

Radial Paralysis in Lead Workers.—H. Zondek concludes in this article, which was begun in the previous number of the *Medizinische Klinik*, that paralysis of the radial nerve compromises to a high degree dorsal flexion in the joints of the hand

and is one of the very earliest symptoms of lead intoxication before colic or joint involvement had appeared. 2. Motor weakness when the patient clasps the hand of the examiner can be made out, notwithstanding unusual bodily vigor. 3. There is absence of any disturbance in the working ability of these patients notwithstanding the limitation of motion and weakness.

Sugar Content of Transudates and Exudates.—Hegler and Schumm state that pleural and peritoneal fluid show striking differences in their sugar content according as they are due to congestion (*Stauung*) or inflammation. In congestion transudates the sugar content is high, often higher than that of the blood; in inflammatory conditions, especially tuberculous exudates, the sugar content is low, remaining usually below 0.1 per cent. and not reaching the percentage of the blood. The ascites from lues of the liver acts like a transudate; likewise the carcinomatous ascites. A negative result of the Rivolta test indicates a high sugar content; a positive finding a low sugar content of the fluid.

November 9, 1913.

Scapula scaphoidea.—F. Warburg examined 1,000 school children between the ages of six and seven years, and found "normal" scapulæ in only 126 of them; 251 had the concave or scaphoid form of scapula. These children had no other signs of degeneration or of congenital lues. The most common form of the shoulder blade in school children is the one with a more or less straight medial border; the concave form is more frequent than the convex; the concave border is not pathognomonic of syphilis; it is not a sign of degeneration; it is a normal variation found probably more often in weak children than in the strong. We are not justified in drawing prognostic conclusions from the scaphoid shape of the shoulder blade in regard to longevity and the mode of death.

Erdöl—Angier's Emulsion—in Digestive Disturbances.—L. Metzger has observed that petroleum in the form of Angier's emulsion is a valuable remedy in internal therapy which more particularly may render excellent service in gastrointestinal disturbances.

November 16, 1913.

Explanation of Sudden Death in Water.—A. Güttich easily explains sudden death while bathing, by vestibular irritation, which, as is well known, arises after the action of cold water on the drum of the ear, produces nystagmus, dizziness, vomiting, and collapse. In persons having defects in the drum or an old otitis media, these caloric reactions may appear much more violently, particularly when the temperature of the water is very low and the vestibular apparatus very irritable. The effect will then be the lightninglike appearance of the collapse. Persons with perforation of the drum should avoid bathing in water that is too cold and should eschew diving.

Chemotherapy of Tuberculosis with Exception of Copper Therapy.—C. Bruck says that the elective influence of gold cyanide upon tuberculosis cannot be doubted. It is still an open question whether this influence is primarily exerted upon the bacilli or upon the anatomical substratum; likewise whether this treatment in its present form has a practical significance. The whole question of chemotherapy in tuberculosis is in its incipiency. We must seek after methodical combinations, possessing the strongest parasitotropy and the weakest organotropy. These investigations are of necessity very difficult, since the syphilitic experiments in animals give results in a few hours, while those in tuberculosis last many months.

November 23, 1913.

Adiposis dolorosa.—O. Klieneberger reports a case of Dercum's disease in a woman forty-three years old. She had beside a general adiposity, small nodules, in size from a pea to a bean, in the deep portions of the fatty tissue, which were distinguishable by marked tenderness on palpation. The muscular power of the patient was abnormally low. There was present a marked increase of bodily fatigue which was also demonstrable in peculiar paresthesias. In the psychic sphere there were typical signs of depression. A series of symptoms point to an implication of the thyroid gland (*Basedowoid*) and the hypophysis (alimentary glycosuria). The family history of the patient proves presence of severe nervous heredity of progressive degenerative nature.

November 30, 1913.

Recognition of Still's Disease.—J. Pisek discusses the clinical picture of this disease, and reports in detail two cases of his own, and the autopsy findings of one of them. The x ray plates and the results of therapy are very interesting.

Diet in Diabetes gravis.—M. Labbé states that the problem of nourishment is a very complicated one in this condition. The patients are in danger of hyperglycemia, loss of nitrogen, acidosis, and coma. The first of these makes necessary a reduction of the carbohydrates and proteid. The loss of nitrogen demands a diet rich in proteids. The acid intoxication, on the other hand, requires that the proteid be decreased, particularly the animal kind. It is thus very difficult to satisfy these conflicting demands. The mixed meat diet with the curtailing of the carbohydrates has the advantage that it is well borne, acts favorably against the hyperglycemia and the nitrogen loss, but encourages acidosis. The milk diet, the flour and oat cures, lessen the acidosis but unfortunately increase the hyperglycemia. The fast cures act favorably upon hyperglycemia and acidosis. They should be resorted to not too frequently, as they are not without danger. The patient must be studied and his requirements accommodated gradually to these various cures.

ZENTRALBLATT FÜR CHIRURGIE.

December 13, 1913.

Operation in Aneurysms and Wounded Vessels.—H. Coenen takes the collateral circulation seriously into account before deciding upon his operative treatment of an aneurysm or wounded vessel. He exposes the vessel in question, loosens it up, and applies a ligature just above, and another just below, the aneurysm or wound. A clamp is then applied to the artery a little below the peripheral ligature, and the artery divided between clamp

and ligature. He then opens the blades of the clamp slightly, so as to allow a little blood to escape. If red blood comes forth, he knows that a sufficient collateral circulation has been established to supply the tissues below, and proceeds with confidence to resect the aneurysm, but if no red blood appears, it is a sure sign that measures must be taken to furnish a blood supply if gangrene is to be avoided.

Treatment of Ascites.—J. Kumaris instituted experiments on dogs to determine whether resection of large pieces of the parietal peritoneum would not leave an absorptive surface in ascites. Results were so satisfactory that he finally tried the experiment on a women aged fifty years who needed to be tapped every two weeks. Fluid was removed from the abdomen a day or two before the operation; laparotomy was performed, and a rather large piece of peritoneum excised on each side of the incision. The peritoneum was silvery white and thickened. The general condition of the patient improved for a little over two weeks, when an attack of facial erysipelas caused death on the twenty-second day after operation. At this time the abdomen was quite soft and showed no traces of fluid.

January 3, 1914.

Protection of Thiersch's Grafts with Cork-paper.—A. Wydler proposes, as substitute for rubber tissue ordinarily used over Thiersch's grafts, paper made of cork 1/10 to 1/100 mm. thick, such as is used for the tips of cigarettes. This may be obtained in fairly large sheets, is very porous, sufficiently pliable, and can be sterilized perfectly. It adapts itself to the surface of the wound, and sticks very little to dressings.

PRESSE MÉDICALE.

January 10, 1914

Hypotensor Action of Certain Pituitary Extractives.—Henri Claude and René Porak call attention to the diversity of action of different pituitary extractives according to their mode of preparation. Whereas a preparation of the entire organ or its posterior lobe made by maceration or decoction causes increased arterial tension and slowing, with augmented force, of the heart beats, the substances isolated from the organ by Houssay and by Claude and Baudouin cause a pronounced fall in blood pressure—more marked in man than in the rabbit,—with diminished amplitude of the cardiac contractions, sometimes followed by a rise in pressure slightly above the normal. In a case of hemoptysis given an intramuscular injection of the Claude and Baudouin preparation, the pressure dropped from 160 to 110 mm., beginning to rise again three and one half hours later. These preparations appear to retain, however, the stimulating action of extracts of the whole organ on intestinal peristalsis as well as on the uterus. An extract of pituitary from which the lipoids have been removed with chloroform will produce glycosuria, but its vasoconstrictor and diuretic effects appear less marked than with the total extract. These observations suggest the advisability of employing separate pituitary products for different therapeutic purposes, e. g., of using a hypotensor preparation in hemoptysis and in hemorrhage from the abdominal viscera.

Uteropelvic Tonicity.—Macrez considers that an examination for what he terms uteropelvic tonicity affords important indications as regards prognosis and treatment in gynecological cases. After gently applying a one in 1,000 solution of mercury oxycyanide or one in 200 solution of silver nitrate to the cervix and external os, a sterile metallic or rubber sound is carefully introduced in the cervical canal until resistance is met, i. e., to a depth of thirty to thirty-five mm. Normally, this resistance is easily overcome, causing slight momentary pain. Where uteropelvic tonicity is decreased the sound passes through with little or no resistance or pain, while where there is hypertonicity, it is almost impossible to push the sound past the obstacle and the attempt to do so causes sharp pain radiating through the pelvis along the sciatics, and occasionally general hysteroid agitation. Diminished uteropelvic tonicity affords ready entrance to infection in the uterus; competely lost tonicity involves various types of uterine displacement; increased tonicity results in neuralgic pains for which no causative organic lesion can be found on clinical examination. Estimation of the uteropelvic tonicity is especially advisable in subacute and chronic cases. Altered tonicity in the presence of endocervicitis should lead one to suspect a congestive state of the body of the uterus or the annexa. In uterine displacements, the tonicity is always lowered, but at intervals there are attacks of hypertonicity, accompanied by sharp pain. In pelvic neuralgia there is cervical tenesmus so marked as to preclude passage of the sound, and in addition, on the vaginal surface of the cervix points, pressure upon which causes sharp, radiating pains lasting several minutes or even hours after the examination. Such a condition, which may eventuate in semiinvalidism, sterility, and dyspareunia, not infrequently follows operative work and acute or chronic disease of the cervix, and indicates a liability to recurrence of the previous disorder. In complete cervical atony, oftenest met with after the menopause, medical treatment is without effect. Where it is only partly lost, measures calculated to stimulate cervical tone bring about rapid general improvement. In the event of hypertonicity, sedative treatment at thermal springs is often successful. Pituitrin will at times relieve atony, and belladonna, hypertonicity. Brief séances of massage at short intervals and local decongestive measures are useful. Cautious electric treatment, with electrodes on the abdomen and over the sacrococcygeal region or in the vagina or cervical canal, constitutes an important measure. Where thermal spring treatment is not possible, nervous patients should receive cool baths in atony, and hot baths where there is hypertonicity.

Diabetes and Typhoid Fever.—M. Labbé and A. Gendron report a case of typhoid fever in a diabetic woman in which there took place a recrudescence of fever after return of the temperature almost to normal, with renewal of rose spots, intestinal hemorrhage, hepatic

congestion, delirium lasting a week, and abscesses —containing typhoid bacilli—in the buttocks where drugs had been injected. Although glycosuria diminished during the disease, carbohydrate tolerance was even more markedly decreased, rising again to a high level, however, after recovery. Study of reported cases of acute infection in diabetics shows that the tolerance is often lowered during the acute disease, and even that such an infection may lower tolerance in a previously healthy individual and be the origin of a postinfectious diabetes. Acidosis occurs during infections in grave diabetes, not in mild cases. Of seven published cases of typhoid fever in diabetics only two ended in recovery from the infection. Intestinal hemorrhage and abscesses are frequent in such cases.

SEMAINE MÉDICALE.

January 1, 1914

Hypermobile Uterus.—F. Lejars refers to cases in which, in the absence of all prolapse, the uterus is found at times in complete retroflexion, at others in complete anteflexion, and again, deviated laterally, causing intermittent functional symptoms often leading to mistakes in diagnosis. Illustrative cases are related. When deviated laterally the uterus, often presenting a spherical body appended to a long, abnormally narrow isthmus, may give the erroneous impression of an annexal enlargement. Repeated examinations, exploration in the knee-chest posture, and if necessary, hysterometry, can alone obviate such mistakes. In these cases pain generally recurs in paroxysms under certain conditions, especially during and before the menses. Ligamentopexy of the uterus not infrequently yields temporary benefit, but in three to six months, the previous complaints return, in spite of the fact that, in the majority of instances, the uterus is found in good position at this time. On the whole, the question of treatment in such cases resolves itself, not into a search for various new technics of ligamentopexy, but into a careful study of the patient's general state and the institution of the constitutional therapeutic measures indicated.

ROUSSKY VRATCH.

October 25, 1913

Local Anesthesia with Pantopon-Roche and Cocaine.—P. I. Buchman employed pantopon as a general soporific and cocaine as a local anesthetic in a large number of operations, both major and minor. Two hours before operation the patient received hypodermically 1.1 c. c. of a two per cent. solution of pantopon, and immediately before operation local infiltration or nerve blocking, two to twelve c. c. of a warm one half per cent. solution of cocaine, with one to two drops of one to 1,000 adrenaline to each ten c. c. of the solution. Comparing pantopon with morphine, the author finds that while the pantopin is slower in action, the effect lasts longer. Pantopon exerts a better psychic effect, diminishes intestinal peristalsis to a greater degree, and does not cause prolonged suppression of urine, as morphine does.

Serodiagnosis of Tuberculosis by the Abderhalden Reaction.—P. S. Krym performed experiments with the Abderhalden test in tuberculosis, using dialysed patient's serum and fat-free tubercle bacilli. Of twenty-six cases of pulmonary tuberculosis positive reaction was obtained in twenty-four. Of nineteen cases of surgical tuberculosis positive reaction was obtained in twelve. In six out of fifteen nontuberculous affections a positive reaction was obtained, while the blood serum of four out of five healthy persons gave a positive reaction. The author concludes that the reaction is not specific in tuberculosis and is of little practical value from a diagnostic standpoint.

November 2, 1913

Leucocytosis in Carcinoma.—I. A. Valedinsky reports the blood findings in fifty-seven cases of cancer, of which thirty-seven were carcinoma of the stomach. The average number of leucocytes was 9,966 of which neutrophiles constituted seventy-five per cent., lymphocytes twenty per cent., mononuclears 6.2, eosinophiles 1.2 per cent., and basophiles 0.6 per cent. In the cases investigated by himself he found an average leucocytosis of 10,590, neutrophiles seventy-eight per cent., lymphocytes twelve per cent., mononuclears 7.8 per cent. eosinophiles 1.6 per cent., and basophiles 0.6 per cent. This leucocytosis, which closely resembles the leucocytosis infection, the author attributes to degeneration and secondary infection of malignant growth. He is of opinion that leucocytosis will help to differentiate carcinoma from simple achylia, chronic gastric catarrh and, generally, from any other condition which is not accompanied by hyperleucocytosis.

Comparative Action of Adrenaline and Histamin on Heart and Bloodvessels.—W. I. Berezin reports a comparative study of the action of adrenaline and histamin (beta-imidazolylethylamin) on the heart and bloodvessels of fish and rabbits. He found that the action of histamin is similar to that of adrenaline, except that the latter dilates the blood vessels of the lungs, and the former contracts them.

Reaction of Complement Fixation in Surgical Tuberculosis.—K. K. Wedensky obtained positive results in most cases of surgical tuberculosis, as well as advanced tuberculosis of other organs. In very early and far advanced stages the reaction was either absent or doubtful. In mixed infection with tuberculosis and syphilis it was possible to determine the presence of two specific antibodies. The author believes that with improvement of technic, the method of complement fixation will prove a valuable aid in diagnosis of tuberculosis.

Cultures of Plasmodia of Tropical Malaria.—G. I. Perckropoff describes the following phases of the protozoa in cultures made by modification of Bass's method: Development of protozoa with a deposit of pigment in the protoplasm commences at the fourth hour. From the seventeenth to twenty-fourth hour (rarely twenty-seventh) schizogenesis is observed. Gametes begin to form from the seventeenth and continue to the twenty-seventh hour. Formation of the ocinetes commences at the twenty-seventh hour. At the thirtieth hour the sporocysts form, which burst at the fortieth hour, liberating sporozoites. At the forty-third hour the process is complete, the sporozoites entering the red blood cells,

November 9, 1913.

Simple Method of Obtaining Hemin Crystals.—I. P. Michajlovsky has simplified Teichmann's method of using formic acid (specific gravity 1.12 or concentrated lactic acid, instead of acetic acid, without the addition of sodium chloride. The acid is added directly to dried blood or may be added to liquid blood without drying.

BRITISH MEDICAL JOURNAL.

January 24, 1914.

Chronic Intestinal Stasis.—J. George Adami deals a severe blow to the pet theories of Lane and his followers as to the cause of symptoms associated with chronic intestinal stasis. He first takes exception to the term, "autointoxication," because it is not employed to indicate true self poisonings, but to cover a multitude of poisonings distinctly of exogenous source. In no sense can products of the digestion of foodstuffs, whether by normal ferments or the action of bacteria, be regarded as giving rise to "autointoxication"; for their products, if they be toxic, are derived from without, and not from the body tissues. "This blessed word 'autointoxication,' *sensu Bouchard*, has become a shibboleth; and after the inevitable tendency of frail humanity it is scarcely ever employed for the self poisonings proper; we see it used every day, both by those who ought to know better—like Sir Arbuthnot Lane and Doctor Saundby—and yet more often by those who obviously do not know better, as a blanket or omnibus term to cover all the processes which are not autointoxications, processes whether of toxic or infectious nature originating in the alimentary canal. As a consequence, the users are blinded to the fact that they are confusing together many processes which for the purposes of clear thinking and progress ought to be carefully kept apart." Lane enumerates no less than seventeen different symptoms or conditions attributable to intestinal stasis; yet it is admitted that no case shows more than one or two of these, proving that in different patients the etiological factor must differ, although there is stasis in all. The whole process of digestion is the conversion of food substances into a soluble or fluid state; it is certain that with the great absorption of fluid that goes on in the colon there is also absorption of a large amount of foodstuff. Further, the process of drying and concentration which takes place in the large intestine is inhibitory to the growth and activity of bacteria and lessens putrefaction. While one third to one quarter of the solids of the healthy stool is composed of bacteria, it is a striking fact that nearly all of these are dead. "It is an utter fallacy to picture the contents of the colon, as I fancy most of us are apt to do, as undergoing acute putrefaction." The arrangements and relationships of the appendix, cecum, and colon in themselves indicate function. In the light of our present knowledge, it is certain that it is not the action of normal digestive fluids on foodstuffs which gives rise to Lane's symptoms, for the tendency of this action is continually to reduce the toxicity of the various substances which they attack. Granting that bacteria may act on the foodstuffs so as to produce toxic bodies, such as indol and beta-iminoazolylethylamin neither of these bodies is absorbed readily from any portion of the intestine, and it is only when the mucosa is damaged that they can enter into the circulation in amounts sufficient to cause symptoms. The exotoxins of the bacteria themselves have been accused, but most bacteria in the intestines are not possessed of exotoxins, and secondly, symptoms of absorption of bacterial exotoxins are not those of Lane's list, but rather simulate anaphylaxis. Adami believes that the proper explanation of Lane's symptoms is to be found in the fact that bacteria enter the tissues of the host and give rise to subinfection, varying in its symptoms with the degree of infection, type of organism, and tissue involved. This explanation is capable of demonstration and covers all symptoms which Lane and others have attributed to the absorption of toxins. It is probable that marked intestinal stasis leads to a greater opportunity for bacilli to gain entrance through the somewhat damaged mucosa, but this does not justify the short circuiting of every colon, nor its removal, but rather indicates necessity for careful study of the precise nature of infection in each case, the institution of adequate medical treatment, and, where there is very decided obstruction to passage of the intestinal contents, to operative removal of the cause.

LANCET

January 24, 1914.

Doses.—C. O. Hawthorne says the one valuable function of the statement of doses in the pharmacopeia is to give security to the dispenser and precision in correcting serious errors due to miscalculation or accident. But the codification of official doses has certain disadvantages and dangers. The chief disadvantage is, that a stated official and fixed dose tends to hinder liberty in prescribing. These doses are repeated in textbooks and taken as standards by examiners. "Hence the medical student becomes accustomed to regard such doses as authoritative; and even the prescriber, influenced by his early habits, remains in greater or less measure sensible to their restraining influence and feels more or less acutely the advisability of keeping his prescriptions within the limits of the official figures. But efficient and successful prescribing is not cultivated by adherence to a system of rigid rules; it demands, rather, the adjustment of doses of selected remedies to the needs, peculiarities, and idiosyncrasies of the individual patient. Dangers no doubt attend excess, but equally they attend defect. Against the one there are constant warnings, but the mischiefs of the timid and officially restricted prescriber are rarely recited." To rectify this tendency, it would seem advisable to have it plainly stated that each dose is the "pharmaceutical dose," indicating that it is not to be slavishly followed, thus affording to the dispenser advantages which it is the function of the pharmacopeia to provide. This statement should be made throughout for each dose, not alone in the preface.

Protein Metabolism during Starvation and after Administration of Milk Proteins.—Gustav Mann, by methods of physiological histology, which he perfected, has made extensive studies in cellular metabolism under different conditions of

nutrition. He divides cell protein into three classes, namely: "Total" cell protein, or that which is not merely within the cell, but what has been built up into the cell and is specific for that cell. This is greatest just after the cell has fed. The "available" cell protein, that portion of its total protein which it uses up in the intervals between regular feedings; and lastly, "indispensable" protein, or that which remains in the cell after death by starvation, and which cannot be utilized in its economy. To the class of indispensable protein belong all glandular secretions, and secretions of nerve cells, as Nissl's substance. It is of vital importance that this protein should not be used up in the process of starvation; if it were, cells would no longer be able to build up substance when food is supplied. After a long series of experiments for the most part on frogs, and adequately controlled, Mann offers the following general conclusions: "Starvation leads invariably to a rarefaction of the cell body and its processes, as is evidenced by the diminished staining power of the cell plasm of all cells in the body. Thus in all starved animals the contractile elements of the heart, both the isotropous and the anisotropous, undergo atrophy amounting to twenty-five per cent. of the normal state. The nervous system also suffers during starvation. . . . Feeding with sodium caseinogenate containing five per cent. of sodium glycerophosphate it is possible within two hours to get a definite increase in the nuclear activity even of cells which are not supplied directly by the blood, as, for example, in the cornea and in cartilage. This milk protein further leads to an increased depth of staining of the heart muscle and of nerve fibres, and this deeper staining it is impossible to explain in any other way, except to assume that the aminoacids liberated by the digestion of the caseinogen are actually built up into what I have termed the "available" protein. From the conservation of protein point of view, as well as from that of restoration, it is absolutely necessary to have a nonpurin-containing, easily digestible albumin. From the evolutionary point of view milk protein must be the best, as it took millions of years of elimination to make it into what it is now."

Toleration of Arsenic by the Human System.—H. G. A. Harding's experiments were made upon himself. Beginning with one sixtieth grain doses of arsenic trioxide three times daily, taken after food for four days, the urine was examined and found to contain about one fiftieth of a grain daily. The dose was then increased until one fifteenth grain was being taken three times a day, and the urine was found to contain from twenty-five to thirty per cent. of the amount taken. This dose produced no symptoms, and the urine remained normal. The same dose was then taken on an empty stomach and produced distinct irritation with discomfort lasting for about two hours. There was now a marked increase in the amount excreted in the urine, rising to about seventy-five per cent. Next, a single dose of one fifth of a grain was taken with the production of more marked irritation and uncomfortable abdominal pains for four and a half hours. The twenty-four hour specimen of urine collected after this dose contained one twelfth of a grain of arsenic. By returning to the smaller doses and gradually increasing, it was possible to reach a point where one fifth of a grain could be taken without irritation. The average percentage of excretion in the urine was maintained. At this point the urea increased, potassium salts increased, and traces of broken down tissues appeared. The dose was pushed until half a grain was taken three times a day. At this stage it was found necessary to continue longer with one dose before increasing. Finally one grain was being taken thrice daily, and it was evident that the limit of tolerance was being reached. The percentage excretion of arsenic remained fairly constant, but the amount of broken down tissue in the urine greatly increased. The drug could be taken with comfort only with dry food; liquids caused immediate burning pains and a decided laxative effect. Ultimately a dose of one and a fifth grain was reached, but this produced marked and lasting discomfort. There was frequent purging. Discontinuance of the drug now produced fullness after meals and general derangement. Return to the drug relieved these symptoms, and it was possible to reduce the dose rapidly without discomfort until none was taken. These huge doses left no lasting effect, the urine soon returning to normal. There was a gain in weight of two and a half pounds, which was soon lost.

BOSTON MEDICAL AND SURGICAL JOURNAL.

January 29, 1914.

Recurrences of Ulcer of the Duodenum Following Operation.—William J. Mayo says that failure to cure, and recurrences following operations, can be divided into two groups: The first group includes failure of operation to relieve the stomach of its acid, irritating secretions, inadequate protection of the ulcer itself during the healing period. This condition occurs more often in cases without obstruction, or with obstruction to the first degree, in which gastrojejunostomy has been done, especially in the well nourished individual without obstruction. The pylorus is open and much of the food passes out of the pyloric instead of the gastrojejunostomy orifice. In such cases attempts have been made to close the pylorus, thus forcing the food through the gastrojejunostomy opening. Such closure of the pylorus may be brought about by infolding the pyloric end of the stomach with buried silk sutures, but the general experience has been that closure by sutures has not proved permanent. Therefore he has used for blocking, a strip cut from the gastrohepatic or gastrocolic omentum, leaving it attached at one end and drawn twice about the stomach just above the pylorus, or, if the ulcer of the duodenum is far enough below the pylorus, about the duodenum between the pylorus and ulcer. The site of blocking should be diminished in size by the application of several interrupted sutures of fine silk to take the strain during the healing process. In the second group of cases, recurrence of the ulcer was apparent rather than real, and had its origin in improper suturing in the gastrojejunostomy; a new ulcer had been formed by the suture. Very fine silk should be used, and the bight of the sutures should be as near as possible to the margin of incision. He uses cat-

gut for the inner row, and silk for the outer, and it is the outer sutures, or musculoperitoneal, that give the trouble.

Progress in the Diagnosis and Treatment of Syphilis.—John H. Cunningham discusses the spirochaeta, salvarsan, and the Wassermann test, and finally says that, disregarding statistics and diverse opinions of others and considering the subject from the viewpoint of personal observation based upon a considerable experience, he has come to certain definite conclusions, the most important being that syphilitic patients must continue now, as in early days, to remain under observation for years. He urges a conservative policy until the future offers a solution of the confusion of opinions, for it is more prudent at this time to rely upon clinical signs and laboratory control, than to impose a haphazard, hit-or-miss, and most miscellaneous form of treatment, to the inconvenience of the patient; while promise of distinct advantages cannot be offered.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

January 31, 1914.

Accidental Injuries to the Descending Portion of the Duodenum during Removal of the Right Kidney.—W. J. Mayo cites three cases in which duodenal necrosis and fistula occurred, with a fatal result. This accident, he believes, is more common than records show; that fistulas have formed following right nephrectomy, that other supposedly intestinal fistulas have really been duodenal. During removal of renal mesotheliomas accidental injury to the duodenum will not often take place, because the kidney pelvis is seldom involved; but, in removal of carcinoma of the pelvis, injuries to duodenum and vena cava are liable to occur. In such cases subcapsular nephrectomy is inadequate if we are to give the patient a chance for cure. Kidney, capsule, and pelvis with an adequate portion of the ureter, must be removed; it is in these cases that the duodenum will be endangered even by the most expert and careful surgery. As to repairing the damage when the accident has occurred, the author states that he makes, before the patient becomes exhausted, a transperitoneal attack on the fistula itself, lifts the descending duodenum from its bed, sutures the opening, transplants a flap of peritoneum or omentum across the suture line, and finally makes a jejunostomy for temporary feeding purposes.

Periosteum in Bone Transplantations.—C. A McWilliams, from experiments in the Surgical Research Laboratory of Columbia University, reaches the following conclusions: 1. The theory that contact with living bone is necessary for the subsequent life of grafts must be given up. 2. Living bone grafts have life inherent in themselves, and are capable of permanent growth even when transplanted into the soft parts. 3. The life of grafts depends on sufficient blood supply, and this is surely obtained when periosteum is on the grafts. 4. Forty-eight per cent. of the author's bone grafts without periosteum were successful, whether or not there was contact with living bone. Hence it appears that there is some other factor than periosteum or contact with living bone, making for the life of grafts. This, he takes to be a sufficient blood supply. Since it is impossible to tell beforehand when grafts without periosteum will attain a sufficient blood supply, it is evident that grafts should always be transplanted with as much of their attached periosteum as possible. 5. Periosteum transplanted into the soft parts will produce new bone in a certain proportion of cases.

Corpus luteum Organotherapy in Bilateral Salpingo-oophorectomy.—W. T. Dannreuther concludes: 1. Corpus luteum extracts are superior to preparations made from entire ovaries. 2. Suitable cases for corpus luteum organotherapy must be selected. 3. Indications for administration of corpus luteum are distinct; its use should be limited to these conditions. 4. Its administration is followed by certain definite phenomena. 5. Of great importance is an extract from ovaries of pregnant animals. 6. Five grain doses, three times a day, are generally sufficient. 7. Constant supervision of the blood pressure of patients taking corpus luteum is necessary. It should not be allowed to fall more than fifteen mm. below the patient's normal pressure, and never below ninety mm. 8. According to personal experience corpus luteum is of considerable value in clinical practice. 9. In one patient it reestablished menstruation after the extirpation of all ovarian tissue.

Ureteral Obstruction Causing Urinary Stasis, by O. S. Fowler.—See this JOURNAL for July 5, 1913, p. 48.

Vagotomy and Its Relation to Mucous Colitis.—B. L. Spitzig says that, on account of anatomical distribution of the vagus, symptoms of increased innervation are readily identified in the gastrointestinal tract. The bowel, chiefly the colon, remains in a more or less constant phase of overcontraction, causing a form of constipation known as spastic. Tender, palpable colon is a prominent sign of vagotomy; so also a tightly contracted sphincter ani. Abdominal pain is frequent, but not necessarily constant. Often the pain is referred to the cecal region, which is responsible for removal of countless innocent appendixes. In cases without pain, physical examination usually elicits varying degrees of tenderness of the large bowel. Frequency of the disorder is astounding; perhaps two thirds of young adults suffer at different times. For vagotomy, belladonna and its active principle are remedies *par excellence.*

MEDICAL RECORD

January 31, 1914.

Occupational Diseases.—W. G. Thompson refers to the principal occupational diseases, to what has been done in this country and England in investigating and avoiding them, and states that in Vienna, Berlin, and nearly a dozen other foreign places there are now museums of safety, where all kinds of devices are exhibited to secure the safety and health of workmen. In Milan there is a hospital of 150 beds, with excellent laboratories and outpatient department, exclusively for treatment of industrial diseases. There seems, he says, a great lack of literature on occupational diseases; he believes that at the present time physicians should collect more accurate data. In his own clinic he uses a special kind of history card for the report-

ing of industrial diseases. He emphasizes the importance of definite and cooperative investigation; the subject calls for cooperation of economists, philanthropists, physicians and legislators. Suitable legislation, he feels, is bound to come.

Beriberi at Culion.—V. G. Heiser, director of health for the Philippine Islands, describes an outbreak of beriberi at the Culion Leper colony. He states that two months after the use of polished rice, cases of beriberi began to appear, the maximum number being reached in three months. Unpolished rice was begun, and in three months the disease had completely disappeared; nor has there been any beriberi since at Culion among government inmates. In the past the author has recommended that a definite standard of polished and unpolished rice should be adopted; that the quantity of phosphorus pentoxide might be used as an index of the degree of polishing which the rice has undergone. From general agreement among workers in beriberi, any rice, he says, containing more than four tenths of one per cent. of pentoxide may be regarded as incapable of causing the disease; and extensive practical experience with this standard in the Philippines has proved it satisfactory. The degree of polishing can be roughly estimated by the depth of color when rice is stained with either methylene blue or iodine; the test is sufficient for practical purposes. The author further remarks that the general use of unpolished rice could be brought about best by a tax on polished rice. Polished rice would be available for those who could afford to pay for it and purchase other foods, and would cause no beriberi. The greatest obstacle to the more general use of unpolished rice has been the unwillingness of rice mill owners to produce it, owing probably to fear that they would be placed in an unfair position with competitors who had not adopted the manufacture of unpolished rice. That solution of the beriberi problem would probably save more lives, and at the same time be of great economic advantage, is urged; the subject well merits serious consideration by the governments concerned.

Amebic Dysentery Treated with Emetine.—Three cases are reported by J. Wagner, who draws the following conclusions: 1, Emetine hydrochloride is a specific in dysentery due to Amœba histolytica. 2. It is given hypodermically in daily doses of half a grain, dissolved in sterile water, for a period of seven days. 3. No ill effects are shown from its use. 4. Two or more doses may be given in doubtful cases, for diagnostic purposes; improvement indicates an amebic dysentery. Two cases relapsed; therefore intermittent treatment with emetine seems necessary.

Treatment of Deafness with Sonorous Vibrations by the Zünd-Burguet Method.—L. M. Hubby believes that the electrophone of Zünd-Burguet of all instruments devised, most nearly fulfills the requisites of treatment of the deaf by means of sonorous vibrations. The ceruminous secretion becomes more normal; the Eustachian tube more healthy; and, if it has a tendency to remain closed, its patency increases, provided there is no organic structure. Metabolism and health of the tympanic and Eustachian mucosa improve. Partial ankylosis of the ossicular chain decreases, and sometimes disappears. The muscular tone of the stapedius and tensor tympani increases; the patient is better able to adjust properly the receiving mechanism of membrana tympani, and ossicular chain, for the proper transmission of sound vibrations. Tinnitus, sensations of numbness and fullness, neuralgic otalgias, etc., diminish or disappear. Obstinate otorrhea frequently ceases.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

December, 1913.

Pathology of the Thyroid Gland in Exophthalmic Goitre.—L. B. Wilson states that the studies on which this paper is based are a continuation of those first reported five years ago. His conclusions are: 1. A detailed pathological study of fixed tissue preparations from 1,208 thyroids, removed from patients whose condition would ordinarily have been diagnosed as exophthalmic goitre, showed that seventy-nine per cent. of the thyroids contained large areas of marked hypertrophy and hyperplasia. A parallel clinical study has shown that for a period of three years all patients with true exophthalmic goitre, and from whom gland tissue was removed, fall into this list. 2. In this series of 1,208 so called exophthalmic goitres plus 585 so called simple goitres, or a total of 1,793 thyroids, but four instances of marked primary hypertrophy and hyperplasia of the parenchyma have been noted which did not show clinical symptoms of true exophthalmic goitre. Three of the four patients were children. 3. Twenty-one per cent. of the 1,208 glands studied were either regenerations or adenomas. Clinically, while all of these were markedly toxic, all were chronic and none of them would now be grouped clinically as true exophthalmic goitre. 4. By assuming that the symptoms of true exophthalmic goitre are the results of an excretion from the thyroid, and by attempting to determine the amount of such secretion from the pathological data, one is able to estimate in a large series of cases the clinical stage of the disease with about eighty per cent. of accuracy and the clinical severity of the disease with about seventy-five per cent. of accuracy. 5. It would therefore appear that the relation of primary hypertrophy and hyperplasia of the parenchyma of the thyroid to true exophthalmic goitre is as direct and constant as primary inflammation of the kidney is to the symptoms of true Bright's disease.

Antityphoid Vaccination.—F. F. Russell concludes his Harvey lecture on this subject by saying that at the present time sanitation alone is not ample protection, and some measure of personal prophylaxis is absolutely essential the moment we leave home. We are, then, reduced to measures of personal hygiene and individual prophylaxis, and the best method at the present time is vaccination. Only by it can we protect ourselves against infection with as great certainty as against smallpox; in this day and generation it is, in fact, the one promising method of protection from the sporadic and residual typhoid which has so far resisted the efforts of sanitarians. There is no occasion for conflict between the advocates of general and individual prophylaxis; one is as necessary as the other, and no

one interested in the suppression of this disease can afford to ignore either.

Cutaneous Manifestations of Septicemia.—J. W. Churchman says the most familiar cutaneous manifestations of invasion of the body by microorganisms are the syphilides and (if a microorganism is conceded in this case) the exanthemata. In the class of diseases more strictly known as septicemia the following groups are to be distinguished: Papular rashes; urticarial rashes; the hemorrhagic group; vesicles, pustules, and pemphigoid eruptions; herpes.

Conclusions Derived from Further Experience in the Surgical Treatment of Brachial Birth Palsy (Erb's Type).—A. S. Taylor states that the essential etiological factor consists in the forcible separation of the head and neck from the shoulder on the side of the lesion. The deep cervical fascia, the nerve sheaths, the nerves, and small accompanying vessels are torn; and after a time the resulting blood clot and torn structures form a dense cicatrix, which prevents nerve regeneration. The paralyzed muscles fall into groups according to the roots injured. The characteristic attitude is one of extreme marked inward rotation of the whole extremity, which is accentuated by the pronation of the arm and hand. The prognosis is bad, as there is usually some degree of deformity and paralysis which persists. Operation gives the best prospect for a useful arm, and the best time for operation is as early as the general condition of the patient will permit (three to twelve weeks). In the cases where roots have been torn from the cord these must be laterally implanted into the neighboring roots, or, if the latter have been damaged enough to require resection, all the distal nerve trunks may be sutured in a bunch to the proximal roots still attached to the cord. After operation the head and shoulder must be held in approximation by a steel brace. Aftertreatment must be systematic and persistent.

Further Experiences with Stretching of the Pylorus.—Max Einhorn finds that stretching of the pylorus can be performed with advantage in all cases of pylorospasm, provided there is no fresh, active ulcer in the pylorus or its immediate vicinity; also largely in the beginning in benign pyloric stenosis, and in advanced benign pyloric strictures where operation is impracticable.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN

December, 1913.

Cæsarean Section.—A. B. Davis reviews his experiences with a series of 193 consecutive sections. After mentioning the results, 0.8 per cent. of the mothers dying, and 16.9 per cent. of the children being stillborn or failing to live, he briefly discusses the indications for such an operation. He emphasizes that it has moved far beyond the "last resort" idea and is now an infinitely simpler and safer operation than it was twenty years ago. As to the proper time in which to perform Cæsarean section, Davis concludes that it should be a few days before term and before the onset of labor. The mother is then saved from labor pains, and the child is not subjected to any compression. The chief feature in Davis's operation is the making of a median incision eight to ten cm. long from above down to the umbilicus. The important advantage of this method is that there is no danger of adhesions between the uterine and the abdominal wounds and the uterus therefore is allowed to undergo involution normally and take up its position in the pelvis without restricted mobility.

Thyroid Tissue Tumors of the Ovary.—Outerbridge gives a careful review of the histology and probable origin of such growth, also a table giving the essential details of similar cases that have been reported. He concludes that these tumors are teratomas, with varying degrees of suppression of the ectodermic and mesodermic elements.

Histogenesis of Sarcomatous Change in Uterine Fibromyomata.—Geist believes that there can be no doubt raised as to the origin of the sarcoma from the muscle cells of a fibromyoma.

Treatment of Sterility by the Dudley-Reynolds Operation.—Holden gives in detail the technic of this operation and reports results obtained by Reynolds in forty cases. By this operation the flexion of the anterior wall of the uterus is removed and in eighty-five per cent. of cases cures dysmenorrhea, and sterility in twenty-five per cent.

Exophthalmic Goitre and Pregnancy.—Gellhorn discusses the best way of dealing with a pregnancy complicated by exophthalmic goitre, and reports one case in which he emptied the uterus. On account of the tendency of this disease toward transmission to the offspring, the author believes that tubal sterilization seems justifiable if vaginal Cæsarean section has to be performed.

Treatment of Placenta prævia by Cæsarean Section; When, If Ever, Is It Justifiable?—McPherson is prepared to uphold the method. He believes that the indication is clear when there is encountered a primipara with a placenta prævia, either marginal or central, or a multipara with a central placenta prævia, whether the cervix is rigid or undilated. This holds good whether or not there is pelvic disproportion, provided the child is viable and the mother offers the ordinary safe operative risk. Cæsarean section in such instances holds out a better chance of saving the lives of both mother and child with fewer complications than any other method of delivery.

JOURNAL OF MEDICAL RESEARCH

December, 1913.

Relation of Hodgkin's Disease to Lymphosarcoma and Endothelioma.—Oliver calls attention to the question of the nature of Hodgkin's disease, whether it is a granulomatous or neoplastic process. The material used for examination consisted of twenty-two cases of lymphosarcoma, eleven cases of Hodgkin's disease, and thirteen endotheliomas. By comparison of the histological appearances of these three conditions, the author has attempted to show that the histological picture of Hodgkin's disease lies midway between that of lymphosarcoma on the one hand and the endothelioma on the other, and differs from them more quantita-

tively than qualitatively. The conclusions are that Hodgkin's disease must be classified with the lymphosarcoma and the endothelioma of the lymph-nodes as a neoplastic process. The following facts seem to compel the conclusion: 1. The similarity, and in some cases identity, of the histological changes. 2. The early and constant development of malignancy (invasion of capsule and veins). 3. The ultimate formation of true metastases, partly at least, by the bloodstream.

Diet Studies in Transplantable Tumors.—Van Alstyne and Beebe undertook certain experiments to determine the effect of a noncarbohydrate diet upon the growth of transplantable sarcoma in rats. From their results it seems justifiable to conclude that an animal may be in excellent nutritional condition, and yet because of peculiar preparation by diet be unable to grow tumor tissue. Certain it is that the susceptibility to tumor implantation in rats is markedly modified by the character of the food. It cannot be said, however, as a result of these experiments that tumor incidence is higher in a lot of animals or race of people who eat a rich, carbohydrate diet, instead of a flesh diet. But, it may be maintained that susceptibility and immunity to tumor transplantation are not entirely independent of the diet.

Some Histological Evidences of the Disease Importance of Pulmonary Anthracosis.—Haythorn discusses the anthracotic process, the association of anthracosis and tuberculosis, and its association with pneumonia. He concludes that the endothelial leucocyte, and not the polynuclear, is the chief pigment phagocyte of the body. In relation to tuberculosis, Haythorn believes that the presence of pigment-bearing cells in the connective tissue about tuberculous lesions acts as an additional stimulus to fibrosis and encapsulation. The obliteration of the pulmonary lymph spaces in the anthracotic process is unfavorable for the local spread of tuberculosis and also aids in the localization of the condition. With pneumonia the relation of anthracosis is very different, because any process which interferes with the free lymphatic drainage will delay resolution, both by actual mechanical obstruction to the migration of cells, and, by aiding in the accumulation of waste products, probably embarassing enzymatic digestion of the exudate.

JOURNAL OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

December, 1913.

Prophylaxis of Ocular Birth Infections and Venereal Disease.—Robert Sattler says that the beginner in practical obstetrics must face two unsettled questions, toward the solution of which he may contribute later the results and conclusions of his own experience. First: What proportional share of all ocular birth inflammations can be unquestionably assigned to a gonococcal origin, in private, charity eye and obstetric dispensaries, and in public lying in hospitals? Second: The probable channel for the ingress of gonococci and other pyogenic cocci or bacteria, and in particular, the time of implantation, whether before or during or whether it follows sooner or later the parturient act of the mother? Whether an infant's eyes, for the known reason that the eyelids are immobile and firmly closed, even additionally agglutinated by thick amniotic paste, with every absence of reflex muscular movements owing to the still dormant function of the retinas, is thereby safeguarded against infections or other material forcing its entry at this time? At this early period the tears which are considered the natural aseptic and antiseptic agents of the eyes are absent. Certainly their absence, or the fact that they are not secreted until some time after birth, renders the accidental or forced introduction of foreign material more likely to happen, and because of its retention for longer time, more difficult to dissolve or dislodge. It may also explain the greater liability to ocular contamination in general. It accounts also for the longer period of latency before an active inflammatory process is started in some cases. It is not improbable that owing to the absence of tears, pyogenic organisms may more readily migrate or be forced into the eyes through a patulous nasal duct from the nasal cavity, which is a larger and easier receptacle for the longer lodgment of infectious pus during protracted labor.

OPHTHALMIC RECORD.

December, 1913.

Visual Requirements in Railway and Traction Services; Protection of the Eyes of Workmen.—Burton Chance describes the requirements of the Pennsylvania Railroad and of several trolley lines in Pennsylvania. Concerning industrial accidents he is right in saying that those of us who see many of them are apt to become impatient after a series of cases of destroyed eyes, and to declare that such accidents could not have occurred had there been sufficient protection for the workmen. It may be well, therefore, to review the precautions to be found at a modern steel works as described by him. The "red ball of danger," the "universal danger sign," is everywhere, and large, legible signs in all languages are placed conspicuously to point out dangers and to warn the men. Examples are: "Do not work with unsafe tools. Tell your foreman." "The proper inspection of tools by employees using same will help to prevent accidents." In the chipping yard the foreman makes sure every morning that each man is provided with a perfect pair of goggles, and urges that they be worn. Signs in various languages like this are posted: *"Danger!* you are warned against working without eye protection and with battered tools. Get proper tools from foremen." On the arm of the grinding machine is painted, "Wear your goggles." Over the tool rests are adjustable eye shields through which the man may watch his grinding with safety. Goggles are worn by the men pouring molten metal; if they do not wear them, they are sent home. Face shields also are provided in some parts of the work, and in some places the entire body is shielded. "In one shop I saw seven men working on a great casting; each one was provided with goggles, yet four had them up on their foreheads." Some shops require a physical examination of new employees, including the testing of the eyesight. Light is furnished in foundries. The invention and supplying of these appliances ought to receive full consideration in the discussion of the employer's liability in cases of injury when the accident is due to failure to use the protection furnished and to disregard of shop rules.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Anniversary Meeting, Held November 20, 1913.

The President, Dr. WILLIAM M. POLK, in the Chair.

The Fundamental Basis of Nutrition.—Dr. GRAHAM LUSK declared that his object was to present the subject of nutrition in its broadest general aspects and to suggest the possibility of the practical application of some of the facts. It seemed as though mankind had a right to a knowledge of the value of the foods which a bountiful Nature provided for his use. Even among educated persons there were the grossest errors regarding the nutritive value of a hen's egg, and few of those who ate at restaurants realized that the greater part of the nourishment which was served them lay, not in the specific dish ordered, but in the bread and butter which ostensibly was presented as a gift. In the fuel factor and the repair factor lay the science of nutrition. The workshops of life were in a constant state of partial breaking down, and materials must be furnished to repair the worn out parts. One gram of glucose, when oxidized, yielded sufficient heat to raise one litre of water 3.75°C. Since the measure of heat was that quantity required to raise one litre of water 1°C., it followed that one gram of glucose yielded 3.75 calories of heat. Sugar yielded the same products in the bomb calorimeter and in the body, and, therefore, the amount of heat produced was identically the same, no matter where the oxidization took place. This was also true of fat. An investigation into the quantity of heat produced in the human body by various foodstuffs showed that one gram of glucose yielded 3.75 calories, one gram of cane sugar four, one gram of starch 4.1, fat 9.3, protein 4.1. When oxidization took place in the body the store of power in the foodstuffs was liberated and became the source of the motions of life, and in the resting organism was finally eliminated as heat. If one measured the quantity of protein, fat, and carbohydrate oxidized in an animal in twenty-four hours one could calculate the quantity of heat which arose from this process. If, at the same time, the animal were placed in a calorimeter, which measured the heat actually given off during the period, the two computations should exactly agree. Rübner had demonstrated this truth. Doctor Du Bois and Dr. Warren Coleman had discovered that a typhoid fever patient, during a period of five hours' rest in their calorimeter, produced the same number of calories which it had been calculated that he would produce from the materials that were oxidized in his body, and the contemplation of such a result drove home the fact that if the typhoid fever patient was to be kept from losing his own body muscle and fat, he must be given the equivalent of 422 calories of food substance during a five hour period. Thus measurement of the total heat production became a measure of the intensity of the life processes. It had been shown by Rübner that all well nourished mammals produced the same number of calories to the square meter of body surface. The quantity of heat produced by a man in the morning while resting in bed, having been without food for fifteen hours, was the minimum or basal heat production, and in a man weighing seventy kilograms would be seventy calories an hour, or 1,680 calories in twenty-four hours. If food were taken, extra heat would be produced, but not in excess of ten per cent. of the basal heat production, or seven calories an hour, or 168 in twenty-four hours. Hence the requirement of a normal man resting in bed would be 1,848 calories daily. The amount of fuel needed beyond this depended upon the amount of work done. Since the influence of food was to increase the metabolism seven calories an hour, and that of a sedentary employment increased it twenty calories, and since the exercise which a normal man should take required 320 additional calories, the total number of calories for a man engaged in a sedentary pursuit was 2,488 a day. Statistics showed that, as a matter of fact, inhabitants of cities took this amount of fuel daily. Men doing heavy physical labor required 3,000 or more calories daily in the food consumed. A boy of twelve years required 1,500 calories and a newborn babe 100. In fever and hyperthyroidism, where the heat production was far above the normal, increased nourishment was indicated. A hospital patient was liberally fed when he was receiving about 2,168 calories, and anything more than this might be looked on as a reserve fund.

A diet might be deficient in calcium salts and the body would suffer from calcium hunger, or it might be deficient in iron, as was a milk diet, when the person using such a diet might become anemic, but the important material to be treasured and protected was the body protein. Milk, meat, fish, vegetable, and gelatin proteins had different physiological values. The most important of the proteins were glycoll, alanin, leucin, phenylalanin, aspartic acid, glutamic acid, serin, tyrosin, cystin, lysin, histidin, arginin, ammonia and tryptophan. When the component parts of any protein were in very different ratio from those of the body protein, they were of inferior nutritive value. Such inferior proteins occurred among the plants. Plant proteins were reconstructed into beef proteins, and thus beef proteins attained a higher biological value for the nutrition of man than was possessed by the vegetable proteins.

It was necessary that the body have a constant replenishment of its protein store, and there was no doubt of the superior value of meat, fish, eggs, and milk proteins to that of bread, beans, and Indian corn. The proteins of rice and potato held an intermediate position between the two classes of proteins above mentioned. Such facts made it possible to classify proteins according to their physiological value, and they might be sold, as milk now was, in three grades, A, B, and C, and in a fourth grade, D, might belong gelatin and some other proteins which could not replace the body protein which was continually wearing away. Experiments with wheat protein showed that glaidin, which represented nearly one half the protein of wheat, was of inferior food quality. It required more protein in the form of bread to protect the body from protein loss than it did when milk or meat was ingested. The same was true of other proteins derived from grain. The protein of the kidney bean failed completely to maintain the weight of rats and might be considered as lacking in some chemical unit. It had been

pointed out by the New Haven investigators that a single protein like casein could cause normal growth involving the production of all the various body proteins. Casein did not contain glycoll, but this might be manufactured from it by the animal organism. Proteins were usually taken in excess of that quantity barely necessary to repair tissue. This excess was oxidized and used as fuel just as were the fats and carbohydrates. Protein very largely increased the production of heat in the body. Individuals maintained on a low protein diet might suffer intensely from the cold. Glycocoll was one of the units of protein that caused a marked increase in the heat production and was completely converted into sugar without undergoing oxidation; hence it acted as a chemical stimulus and not in virtue of its energy content. Heat production was effected by all kinds of protein, even by such incomplete proteins as gelatin. In order to obtain the warming effects of protein it was not necessary to purchase so costly an article as beef.

The speaker would like to make an interesting comparison of the dietary habits of men in different parts of the world. The Eskimo consumed large quantities of meat, even as much as nine pounds a day, and yet health and strength were not wanting among these meat eaters and neither were they the victims of "uric acid diseases." The population of China, Japan, and India lived mostly on rice, but this did not always serve to keep them in good condition. The Bengali who lived entirely on rice were inferior to their neighbors in the hills who lived partly on their flocks. The European laborer took more calories than either of these, though he ingested less protein than the Eskimo.

Rübner believed that there should be an excess of protein in the diet so that, if, after physical exhaustion, there was a depletion of the glycogen reserve, there might be building units in reserve quickly to repair the tissues destroyed. It was pointed out that the staple diet of the robust and healthy Bavarian peasant had been milk, cheese, bread, and vegetables, and this for many centuries. Such a diet, though it contained no meat, was not a diet low in protein. According to the chemical analyses, there seemed to be no difference in the relative value of beef, veal, mutton, and chicken, and experiments in feeding gave no indication that one was more readily absorbed than another. The substances that were convertible into uric acid were present in all these meat foods in about the same quantity. Ultimately the question was one of flavor; man ate what he liked best, and taken in moderation, what he liked best he digested best. Therefore the demand for meat which was not necessary, and could be largely replaced by the cheaper proteins of milk, or even the proteins of wheat and beans taken together. The human organism was extremely sensitive to certain substances in minute quantities, for instance, epinephrine the active constituent of the suprarenal glands, was present in the blood in one part to 100,000,000, yet this was essential to life. The profound effect of small amounts of materials formed in the various internal glands was a well established fact, but it had only recently become probable that, in order to maintain the organism in condition, a small quantity of something not hitherto recognized was necessary. As to the relation of polished rice to beriberi, Funk had sought to isolate these substances which prevented beriberi and which he termed vitamines. This substance had been isolated from dried yeast and on purification yielded three materials, which he had called substance 1, substance 2, and nicotinic acid. Substance 1 and nicotinic acid were of little value in curing polyneuritic pigeons, but when three mgm. of the one and two mgm. of the other were administered together, the diseased pigeons were cured in from two to four hours. Rice polishings yielded these same two substances. It, therefore, appeared that a class of vitamines existed in the vegetable kingdom which were necessary to the normal growth and nutrition of the animal tissues. If meat were eaten, their direct ingestion from the plant became unnecessary.

Apropos of the high cost of living in the light of scientific knowledge of food values, and the increased cost of food during the past twenty years, they saw that efficiency of labor depended upon energy and constant repair. It certainly was of no small account that the citizen should know in times of trouble where to turn to find nourishment in the form which was best and cheapest. The manufacturer of foodstuffs would not give this information, but if through the press and the schools, everyone knew the caloric requirements for maintaining the human body in good condition, no one suffering for want would spend his money, e. g., for tomatoes, which were little more than flavored water.

A recent estimate showed that a family of five, father, a clerk, mother, who did her own house work, and three children, aged respectively, nine years, six years, and one month, required 7,750 calories daily. A study of the market value of staple foods in New York on January 28, 1913, showed that for an adult requiring 2,500 calories the cost would not exceed twenty cents a day at the market price of the fresh materials and that the cost for this family would range between fifty and seventy cents daily. When more than an average of eight cents was expended for 1,000 calories of nutriment, the diet must include luxuries. Some of the market prices of various food staples showed the great variation in the cost of 1,000 calories.

A family in moderate circumstances keeping two servants, could live comfortably on from one dollar to $1.40 a day, and a wealthy family keeping six servants on $1.50 to $2.10 a day. Whatever was spent in excess of such amounts was for flavors of high price or for carnivorous indulgence approaching that of the Eskimo. It was among the poor that this scientific knowledge was most needed, and it was this class which was last to receive it. As the result of a recent investigation of the diet of the working classes of Glasgow, Miss Dorothy Lindsay concluded that one of the main contributing factors to malnutrition among the poor was bad marketing The experience of America had shown that in the matter of school lunches for children of the poor, it was a demonstrable economy on the part of the State to feed the undernourished child. The State should aso teach the mother that weak tea could not take the place of milk in the nourishment of the child. If a manufacturer put on the market an article differing in character from that deposited

with the government, he should be heavily fined. Complaints had been made by manufacturers that in this country scientific men did not sit on the boards of directors as they did in some other countries. In our country this sort of thing had been discountenanced and rightly so. The day of the sale of the reputation of a scientific man, or of that of the institution with which he was connected, has passed. The scientist had sufficient altruism to believe that his services belonged to all the people and not to a set of money making individuals. Physiological chemistry was as advanced in this country as anywhere in the world, and there was an opportunity for good work here. Appeal was made, therefore, to the understanding of physicians and of educated people in this country to take an interest in this subject to the end that enlightened activity for the welfare of our citizens might follow.

ILLINOIS STATE HOSPITALS MEDICAL SOCIETY.

Meeting Held in Chicago, January 28, 29, 1914.

A Practical Campaign for the Prevention of Mental and Nervous Diseases.—A committee consisting of Dr. H. Douglas Singer, director of the Illinois State Psychopathic Institute; Dr. E. A. Foley, assistant superintendent, Jacksonville State Hospital, and Mr. A. L. Bowen, executive secretary, State Charities Commission, presented a report in which was outlined a campaign for preventing mental and nervous diseases, which stated that the main lines of communication were the press, the magazines, the lecture platform, the pulpit, the school room, the college, and university classes in sociology.

The problem which it was necessary to solve was twofold, first, to get what information had been gathered into proper form for public consumption, and, second, to bring into harmonious action all the forces that served to carry this information to the public.

Among the facts might be mentioned a few principles in heredity, the effects of alcohol and venereal diseases upon the heredity and the mental structure of the individual, the debilitating and destructive effects of bad housing and unsanitary environment upon growing children, to say nothing of the matured adult, the serious consequences of worry, the long train of persisting toxins which developed from certain preventable physical diseases and attacked the mental and nervous fabric. The evidences of mental disorders should be taught so that the professional and lay mind also might detect them in the beginning. It was necessary to remove from the public thought the last vestige of the old theory that insanity was a visitation of Providence or the favorite weapon of the devil. It was necessary to establish in public opinion a confidence in the State hospitals as the proper place to go when the first signs of mental sickness appeared; that these institutions were properly conducted; that they were equipped with scientific men and means; and that they were leading in the research and study of mental afflictions, their causes, their prevention, and their remedies.

The report further stated that the State must approve the establishment of psychopathic hospitals in the large cities for the early treatment of mental cases which otherwise would remain away until too late. Such a hospital should be erected in Chicago within the next five years. No money the State could spend in battling insanity would bear so great a return in dollars and cents and in spreading information and knowledge pertaining to mental diseases. County courts, wherein commitments were made, and sheriffs often contributed to the acuteness of the cases by not understanding them. The system of commitment was barbarous, cruel, and inhuman, and had without doubt plunged many a mind into darkness for which there was hope in intelligent treatment and sympathetic care. The idea of jailing a man because he was sick was repulsive to every instinct of humanity, and the sight of two or three officers conveying to a State hospital a single man or woman, cuffed or chained, ought to be horrifying. That nine out of every ten patients so treated in strong rooms, and padded cells and conveyed thus, chained and strapped, were released on arrival at the hospital and turned over to some little woman to enjoy a degree of liberty, ought to be enough to arouse public sentiment against these ancient and useless barbarities.

The State must take the lead in stopping these practices, for they were damaging to patients. They could not estimate the number who had gone into an insane hospital for a lifetime, because of the inhuman and cruel treatment received in the first days of sickness.

For that great army without friends and outside support, the State should furnish supervision. It should see that the paroled patient was employed only such hours as were best for him, and it should, beyond that, furnish him the financial support necessary to make up the difference between his earnings and his living necessities. Over all classes of patients, paroled, or discharged as convalescent, the State should exercise supervision. Through competent nurses and agencies it should oversee the homes and environment into which they went. Many a returned patient could charge his misfortune to the lack of such supervision, and cost to the State of this class alone was too great to pass unnoticed and unchallenged.

The report pointed out the necessity of requiring of the medical schools a course in psychiatry as a condition to graduation, and the State board of health should examine in these subjects. Such a course should include clinical experience. The general hospitals of the city should have psychopathic wards where the student could observe and study. These schools and hospitals should encourage their graduates to enter the State hospitals as interns. The experience gained by interns in such service would be of incalculable benefit in the education of the public mind in these matters.

With physicians trained and experienced, the proposed psychopathic hospital in the larger centres of population would perform the maximum of service in forbidding commitments and in preventing the tremendous financial burden now entailed by the chronic insane upon the taxpayer. When the general practitioner of medicine is able to detect far under the surface those evidences of approach-

ing mental disease, and has the proper hospital accommodations to which to send his patient, such as the psychopathic hospital would furnish, then the committee believed that they should begin to notice a decrease in the population of their State hospitals.

The State expended from $300 to $1,000 to train and educate a delinquent boy or girl or an equal amount to care for and treat a mental case and then turned them out without attention or supervision. How often the entire expenditure was lost and the discharged ward returned to institution care or became a burden upon the public in other ways.

Referring to the modern panaceas, such as sex hygiene, sterilization, eugenics, and the like, all of which had been proposed by the unthinking or the loose thinking and cure-alls for the mental ills of the race, but all of which were in controversy at the present time, the report stated they believed that the little experiments of sterilization which had been made, had been sufficient to relegate it to obscurity. Those classes which they could, under the terms of any rational, legal enactment, subject to the operation, should be segregated during the entire reproductive period. They believed this was the whole answer to the argument in favor of sterilization.

Sex hygiene, so far as its teaching in the schools was concerned, was unwise, if not positively detrimental. The opponents of this idea contended that the moral and the religious instruction were more essential and more successful as deterrent against the vices which the sex hygienist was seeking to counteract. They agreed with this thought in the main, but in the presence of injunction against religious instruction in the public schools, they believed that a course in morals, including sex morals, might be prepared which would be free from any indelicacies and all the evils which were complained of as a part of the sex hygiene propaganda.

In discussing the subject of eugenics, which had been under a powerful limelight, especially during the last few years, the committee stated that many of its enthusiastic supporters believed in it as the salvation of the race. Eugenics had its place in modern education. It should be located and made to serve its proper function. But when they began to formulate into law the principles of the eugenists and say to the men and women of the present age, "You must," and "You must not," then they were going backward from positive achievement.

Accepted and demonstrated truths of heredity and eugenics were well to know. The public should know them, but if all the principles that the eugenists contended for were today miraculously put into full operation, they might, for the time being, have a perfect race, but how long could it be maintained? How long would it be until vice and selfishness and appetites invaded this perfect race and again filled it with corruption? Miraculous manifestations and changes in human nature must precede the perfect physical and mental race.

The State was now burdened with old people who had been cast into the hospital because ungrateful children did not wish to care for them. Voluntary and involuntary commitment of plain alcoholics had become a practice in Illinois which the board of administration had been compelled to stop by drastic measures.

Their commitment laws required amendment in other ways than had already been indicated. They should be more elastic to permit easier voluntary commitment of incipient cases, never, however, releasing the safeguards of court supervision and knowledge, but such laws should prevent the wholesale commitment of the aged and feeble whose only offense, in the eyes of their children and relatives, was that they were hard to care for. Such laws should protect the State and those patients who were in real need of attention.

The commitment laws should be extended to include the feebleminded. The State School and Colony at Lincoln was now much too small to accommodate the demands upon it, but the committee realized that it was for the benefit of the children and the public that, once they were determined to be fit subjects for such an institution, they should remain there unless guarantee could be given that, if released, they would be cared for and protected to the extent that they did not reproduce their kind.

In summarizing the committee urged: 1. Newspaper and magazine publicity through State boards and through the various State hospitals, through the superintendent, or some member of the staff who had editorial and newspaper ability. 2. The general assembly should be impressed with the importance of organizing an outpatient department. The State boards and institutions should join in the recommendation for these departments. Money sufficient to pay the expenses of running these departments could be saved in other departments. 3. The creation and erection of psychopathic hospitals by the State depended upon the general assembly. All interested in this question should unite in renewing the recommendation to the assembly for such an institution at once in Chicago. 4. There should be regulation or legislation to secure courses in psychiatry in medical schools. 5. The University of Illinois should establish in its College of Commerce a course in the administration of public, charitable, correctional, and reformatory institutions. 6. Each of the State hospitals should be equipped with laboratory and all other modern facilities for the study and treatment of patients, and the superintendent and board of administration should see to it that once installed, they were used.

Letters to the Editor.

A CORRECTION.

New York, *February 7, 1914.*

To the Editors:

In your issue for February 7, 1914, you published a communication by Doctor Vander Veer and myself entitled An Inflating Gastroscope and Duodenoscope. Reference was made to the employment of the cystoscope by *Roosing*. This is a typographical error, and should read *Rovsing*. His original article was entitled Gastro-Duodenoskopie und Diaphanoskopie and was published in *Verhandlungen der deutschen Gesellschaft für Chirurgie*, 1908. He employed a specially made, large Nitze's cystoscope with inflator. There were no untoward results, such as acute dilatation of the stomach, following the use of this instrument. Probably other devices have been improvised, but the inventors of the new instrument, as far as they can determine, believe that it is the first practical direct vision instrument, giving the operator perfect control.

Robert Coleman Kemp, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Prostitution in Europe. By ABRAHAM FLEXNER. Introduction by John D. Rockefeller, Jr., Chairman of the Bureau of Social Hygiene. Publications of the Bureau of Social Hygiene. New York: The Century Co., 1914. Pp. ix-455.

From the dawn of history, prostitution has been one of the most perplexing problems of mankind, but the further he has advanced in civilization, the more helpless has man shown himself in its presence. It is not too much to say that in America we have reached the pinnacle of stupidity and futility in handling the various problems connected with prostitution, and our vast and comprehensive ignorance of the subject has recently been strikingly shown in the hue and cry after a purely imaginary quarry, the celebrated white slave, torn from the bosoms of our best families by an inconceivably vulgar but evidently fascinating cadet. It is to be hoped, therefore, that Mr. Abraham Flexner's cold and accurate account of prostitution in Europe will be widely read. Bad as the surroundings of a prostitute may be, in the majority of instances they are an immense improvement over what she has known earlier in life. It is an extraordinary tribute to the innate chastity of woman that, in spite of the temptations afforded by good food, handsome clothing, and comfortable lodgings, only the lowest class succumb as a rule, girls either unusually ignorant or not very sound mentally. Mr. Flexner had evidently no thesis to prove and apparently no prejudgments to be shattered; his book is as impartial and as unimpassioned as a treatise on geometry. He tells how the police of the large cities of Europe handle brothels, or bordels, as he prefers to call them, street walkers, and other aspects of the question, and shows how women drift in and out of the profession as circumstances permit or compel. He recognizes the difference between the mistress, the sweetheart, the semiprofessional, and the lowest of types, all beautifully confounded in many an American mind. *Réglementation* is recognized as a farce and is shown to be disappearing, but the significant fact is made clear that in London, Paris, Budapest, and Copenhagen, the mere act of irregular copulation is not regarded as a crime, even though money passes, a point of view that is eminently sane and not thoroughly understood here. We have too great a tendency to confound *mala prohibita* with *mala per se*, the distinction between which might well be taught before we extend the suffrage much further, in connection with the drink problem, for example, among others. No conclusions are drawn from the great mass of facts presented, but the latter, as pointed out by Mr. John D. Rockefeller, Jr., in an introduction, will be highly pertinent to any discussion in this country as to the merits of proposed legislation. We should welcome more books along the same lines, showing what Europe has accomplished, after an experience of a thousand years and more, in handling other problems. It is not only in medicine that Europe can teach us a few things. We hope that Mr. Flexner's book is spread broadcast, with the result that many passionate delusions will be put to flight and we shall be able to handle with some hope of success the devastation now wrought by syphilis and gonorrhea, the latter disease, according to some writers, having reached among men the wonderful figure of 100 per cent.; the escape of some five or six per cent. of men being made up by the half dozen attacks of others. A happy era may some day dawn when the performance on a woman of a laparotomy will demand a judicial inquiry into the cause; and when Neisser's diplococcus will be a guest of our best families as rare as it is unwelcome.

The Practical Medicine Series for 1913. Under the General Editorial Charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School, and CHARLES L. MIX, A. M., M. D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume III: The Eye, Ear, Nose, and Throat. Edited by CASEY A. WOOD, C. M., M. D., D. C. L., ALBERT H. ANDREWS, M. D., and GUSTAVUS P. HEAD, M. D. Volume IV: Gynecology. Edited by EMILIUS C. DUDLEY, A. M., M. D., Professor of Gynecology, Northwestern University Medical School, and HERBERT M. STOWE, M. D., Associate in Gynecology, Northwestern University Medical School. Volume V: Pediatrics. Edited by ISAAC A. ABT, M. D., Professor of Pediatrics, Northwestern University Medical School, Chicago. Orthopedic Surgery. Edited by JOHN RIDLON, A. M., M. D., Professor of Orthopedic Surgery, Rush Medical College. With the Collaboration of CHARLES A. PARKER, M. D. Volume VI: General Medicine. Edited by FRANK BILLINGS, M. S., M. D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, and J. H. SALISBURY, A. M., M. D., Professor of Medicine, Chicago Clinical School. Series for 1913. Chicago: The Year Book Publishers, 1913.

We have heard it stated that the chief defect of this class of works was, that if a practitioner was particularly interested in a given subject, it would surely happen that nothing would be found on that particular subject. Not only does this not prove true in the vast majority of cases, but were it the case, the reader should remember that the editors are expected to select from the vast number of articles written each year only those which contain something new or interesting. That every subdivision of medicine or even every disease should not be favored each year in this direction is selfevident. The work of selection for the Practical Medicine Series is very well and conscientiously done, and the editors should in every way be encouraged.

Interclinical Notes.

By a singular mischance, in our review of Professor Robin's admirable work on tuberculosis, which appeared in our issue for January 24th, we attributed the American agency of the book to a well known Philadelphia publishing house, instead of to the people who really handle it, The Macmillan Company, 64-66 Fifth Avenue, New York. Moreover, the price of the volume is $5.25 and not $7 as previously given.

* * *

Dr. Wilfred T. Grenfell, continuing the story of his adventures in Labrador in the *Wide World Magazine* for February, says, among other things: Another privilege of the doctor is to look after orphan and deserted children, and, indeed, to perform all the functions of service of which he is capable. He attends births, celebrates marriages as magistrate, conducts funerals, and holds religious services, in the absence of specialists in any of these departments. Jack of many trades, being also navigator of the vessel, he is very apt to be master of none. Had not the generous and loyal volunteer services of many men and women from all the three Anglo-Saxon countries, Great Britain, Canada, and the United States, come to our assistance, our record could only be one of diffuse inefficiency.

* * *

"It is the rule at St. Susan's to give each discharged patient four dollars," is the way The Wedding Rings of Mary Alline, by Henry P. Dowst, begins in *Young's* for January, 1914. St. Susan's was a maternity hospital and had customs unusual save in fiction. We are glad to say that the heroine, Mary, whose foot had slipped once, made a very good match with a broad minded gentleman in the ice business.

* * *

Pursuant, possibly, to its recently announced editorial policy to publish items of medical news that it believes will interest its readers, irrespective of the opinions of physicians in the matter, the *New York Times*, for January 22, 1914, gives the novel and more or less valuable and interesting information that heroine is prepared by the action of acetic acid upon cocaine; "as it is much cheaper than cocaine, its use is proportionately greater."

* * *

A "wheeze" at an uptown theatre involves the query by one comedian, "What is worse than having the earache and toothache at the same time?" The answer is, "Having rheumatism and St. Vitus's dance both at once." This little joke is particularly amusing to physicians who are

to the family physician.

* * *

that we like these revelations better than the amusement-combined-with-instruction books that the writer's eminent years ago.

* * *

There is a symposium in the February *Strand* as to why "silencers" in certain cases of matrimony would render the contemplation of the rite by single men less terrifying. Mr. Temple Thurston, "for being happily married." This has an obvious sound.

Meetings of Local Medical Societies.

(Section in Ophthalmology); Yorkville Medical So- Clinical Society.

cine (Section in Medicine); Tompkins County Medical Society; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology; Tri-Professional Medical of Kings; Binghamton Academy of Medicine; Syra- sociation; Oswego Academy of Medicine.

WEDNESDAY, *February 18th.*—New York Academy of Medicine (Section in Genitourinary Diseases); Alumni Association of City Hospital, New York; Schenectady Academy of Medicine; Women's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; Northwestern Medical and Surgical Society of New York.

cine (stated meeting); Auburn City Medical Society; Geneva Medical Society; German Medical Society, Brooklyn; Æsculapian Club of Buffalo; New York Celtic Medical Society.

FRIDAY, *February 20th.*—New York Academy of Medicine (Section in Orthopedic Surgery); New York Microscopical Society; Mount Vernon Medical Society; Clinical Society of the New York Post-Graduate Medical School and Hospital.

Official News.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending February 7, 1914:

Bispham, W. N., Major, Medical Corps. Detailed to inspect the Iowa Militia at Sioux City, March 16th; Des Moines, March 18th; Iowa City, March 19th; and Clinton, March 20th. **Clarke,** J. T., Lieutenant Colonel, Medical Corps. Detailed to Lisbon, N. D., to inspect Sanitary Detachment, North Dakota Militia. **Delaney,** Matthew A., Major, Medical Corps. Special Orders No. 128, June 14, 1913, have been amended so as to direct

Dunbar. [illegible] Harris, Porter. [illegible] Detailed to board duty at Fort Sheridan.

Births, Marriages, and Deaths.

Married.

Bunn—Kindly.—[illegible]

Clark—Baum.—[illegible] January 26th, Dr. Charles E. Clark and Mrs. Rosa A. Eck—Birkle.—[illegible] January 28th, Dr. Peter A. Eck and Miss Lillian B. Birkle.

Died.

Attwood.—[illegible] ary 1st, Dr. G. H. Attwood, aged ninety-five years. **Babcock.**—In Grand Rapids, Mich., on Tuesday, January 27th, Dr. J. Newton Babcock, aged thirty-eight years. **Baker.**—[illegible] Dr. Burrage Fowler Baker, aged fifty-five years. **Bell.**—[illegible] A. Macdonald Bell, aged thirty-eight years. **Burton.**—In Cleveland, Ohio, on Friday, January 23d, Dr. Erasmus Darwin Burton, aged eighty-nine years. **Cox.**—In New York, on Tuesday, February 3d, Dr. James A. Cox, aged fifty-five years. **Crouch.**—In Richmond, Va., on Tuesday, January 27th, Dr. Richard Gallego Crouch, aged eighty-five years. **Day.**—In New York, on Tuesday, February 3d, Dr. Edward Gardiner Day, aged seventy years. **Dickerson.**—In Conway, Ark., on Saturday, January 24th, Dr. George D. Dickerson. **Froelich.**—In Hartford, Conn., on Saturday, January 31st, Dr. Charles Froelich, aged seventy years. **Fulton.**—In New Orleans, La., on Monday, January 26th, Dr. James D. Fulton, aged forty-two years. **Glenn.**—In Woolsey, N. C., on Sunday, January 25th, Dr. Marshall R. Glenn. **Glynn.**—In Hartford, Conn., on Friday, January 30th, Dr. Dennis L. Glynn, of Portland, Maine. **Hatt.**—In Onaway, Mich., on Monday, January 26th, Dr. David A. Hatt. **Hinchey.**—In St. Louis, Mo., on Tuesday, January 27th, Dr. William Hinchey, aged sixty-one years. **Logue.**—In Bellmore, L. I., on Tuesday, February 3d, Dr. Daniel C. Logue, aged eighty-two years. **Ludwig.**—In Pottstown, Pa., on Saturday, January 31st, Dr. J. Harry Ludwig, of Boyertown, Pa., aged thirty-eight years. **Lyon.**—In McLeansboro, Ill., on Sunday, January 25th, Dr. C. M. Lyon, aged seventy years. **Magruder.**—In Washington, D. C., on Wednesday, January 28th, Dr. G. Lloyd Magruder, aged sixty-five years. **McCallum.**—In Clinton, Ky., on Saturday, January 24th, Dr. J. A. McCallum, aged seventy-eight years. **Nipple.**—In Mount Union, Pa., on Saturday, January 10th, Dr D. C. Nipple, aged sixty-two years. **Pierce.**—In St. Vincent's Island, Fla., on Wednesday, February 4th, Dr. Ray V. Pierce, of Buffalo, aged sixty-five years. **Poston.**—In Chattanooga, Tenn., on Tuesday, January 20th, Dr. J. M. Poston, of Cleveland, Tenn. **Simpson.**—In New York, on Friday, February 6th, Dr. William Kelly Simpson, aged fifty-nine years. **Snell.**—In Los Angeles, Cal., on Thursday, January 22d, Dr. Lewis A. Snell, of Charlotte, Mich., aged seventy-four years. **Thorne.**—In Havelock, New Brunswick, on Monday, January 26th, Dr. Bliss S. Thorne, aged seventy-two years. **True.**—In Chicago, Ill., on Friday, January 30th, Dr. Charles True, aged seventy-one years. **Uebelacker.**—In Morristown, N. J., on Friday, February 6th, Dr. Armin Uebelacker, aged eighty-three years. **Voelkers.**—In Kiel, Germany, on Tuesday, February 3d, Dr. Karl Voelkers, aged seventy-seven years. **Wilson.**—In Nashville, Tenn., on Saturday, January 31st, Dr. W. L. Wilson, aged eighty years. **Worthington.**—In Annapolis, Md., on Tuesday, January 27th, Dr. Eugene Worthington, aged seventy-two years.

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Original Communications.

GLAUCOMA.*

From the Standpoint of the General Practitioner.

BY WENDELL REBER, M. D.,

Philadelphia.

Within recent years I have been struck with the fact that cataract is probably on the decrease and glaucoma on the increase. As far as my own experience goes, I am persuaded that I see more glaucoma in private and hospital practice than I did, say, twenty years ago, and less cataract. If there are any reasons to be assigned for these impressions, I should say that the decreased incidence in cataract may be due to the fact that the greater portion of the community have been for twenty years paying more and more attention to the wearing of proper corrections of their errors of refraction. The undeniable results of such a practice on the part of the community is lessened strain on all the ocular structures with greater integrity of those same structures. The same cannot be said for glaucoma, which in our judgment is directly related to the higher tension at which our present day life is led, along with indulgence in what have been so aptly termed *physiological vices*. All of this predisposes to a systemic blood pressure greater than normal with fine intravascular disease which, to our way of thinking, stands in direct relation to the clinical picture termed glaucoma. The relation between the systemic blood pressure and the pressure within the eyeball is not to be gainsaid.

If a small cannula connected with a narrow bored mercury manometer is pushed into the anterior chamber or into the vitreous chamber of an animal, it will be found that the mercury in the manometer will rise about twenty-five mm. In other words, the contents of the eyeball (which are for the most part fluid), exert a pressure upon the inner side of the walls which is about twenty-five mm. of mercury greater than the atmospheric pressure which falls upon the outside walls, and the walls (or tunics) of the eye are thus kept well stretched.[1] The pressure inside the eye is called the *intraocular pressure*, or *tension* of the eye.

In order that this tension of the eye may be kept up, work must be done by the organism, and it is evident that the source of energy must be the blood pressure. This conjecture has been proved conclusively to be true by experiments on animals, by which it has been found that the intraocular pressure follows passively every change in the general or systemic blood pressure.

The necessity for keeping up the normal tension of the eye has been alluded to; but the interesting fact is that this intraocular pressure must be maintained, and at the same time the secreted lymph within the eye must be circulating lest it become stagnant and loaded with excretion products. Just as in other parts of the body, the lymph is formed by filtration out of the capillaries, so in the eye, the filtration of lymph depends upon the difference in pressure inside or outside of the capillaries, which determines the rate of lymph filtration. The small difference, however, between the pressure within the intraocular capillaries and outside of them results in two important differences—first, the lymph (or aqueous humor) is secreted more slowly; and, second, this lymph is biochemically different in composition from ordinary lymph, the aqueous humor being notably low in its proteid content. The accepted conception is that it is entirely secreted by the ciliary body (which closely resembles the glomeruli of the kidney) passes through the posterior chamber around the pupillary edge of the iris into the anterior chamber and escapes from the eye through the meshes of the pectinate ligament into the venous plexus, known as the canal of Schlemm, where it gains ready access to the anterior ciliary veins. A very small portion of the lymph thus secreted reaches the central lymph channel in the vitreous (the canal of Cloquet—an embryonic remnant) and passes out through the vaginal space of the optic nerve. Such lymph as accumulates in the choroid is thought to leave the eye entirely by the vena vorticosæ of the choroid. Of these three channels for the escape of lymph no longer needed in the eye, the one of prime importance in the maintenance of the intraocular pressure or tension, is that by way of the angle of the anterior chamber and the canal of Schlemm. Anything that for a sufficiently long time disturbs the balance between the secretion of aqueous humor and its escape from the eye, will produce in some form the picture of glaucoma. The best definition of glaucoma yet offered is that of Priestly Smith, namely, that "glaucoma consists of increased intraocular pressure plus its causes and symptoms."

Many theories have been advanced for the explanation of glaucoma, but no one fits into all the phases of the disease, so that we are compelled to admit that as yet the exact cause of glaucoma is not definitely known. Chief among the theories are the following:

1. The hypersecretion theory.
2. The retention theory.
3. Priestly Smith's postulate of a small cornea and too large a lens.

*Presented to the Lackawanna Medical Society, December 6, 1913.

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The advocates of the hypersecretion theory maintain that because of increased secretion of aqueous by the ciliary body and other abnormal accumulations of fluid in the vitreous body, the lens is forced forward against the root of the iris, which in turn is forced forward and thus partially or completely occludes the angle of the anterior chamber. Retarded or completely arrested filtration by way of Schlemm's canal is thus induced. The intraocular structures cannot long withstand the increased intraocular pressure, and edema and venous stasis are quite sure to result with all the phenomena characteristic of glaucoma.

The "retentionists" assume that the whole clinical picture is almost invariably due to defective outflow. Most of them, therefore, accept the postulate of Priestly Smith, who ascribes the preponderant role to the lens, which continues to increase in size throughout life. The space between the equator of the lens and the ciliary body (processes) will therefore become smaller as the patient grows older. If the eye (and therefore the cornea) is small, this space may become so diminished that the lens will impinge on the ciliary processes and prevent the fluid secreted by the ciliary body from passing forward through the pupil. Filtration is thus obstructed and glaucoma may supervene. If the obstruction is not complete, a subacute attack is more likely to ensue.

Other theories put forward are those of Fricker and Gilbert, in which the cardiovascular and vasomotor systems are considered the prime factors; that of Martin Fischer who ascribes it to a swelling or edema of the colloidal substances in the eye; and lastly that of Stronsky who attributes the entire trouble to an indurative scleritis.

ETIOLOGICAL AND PREDISPOSING FACTORS.

While there is much room for argument as to the intimate character of the intraocular process that produces glaucoma, there is pretty general agreement as to the powerful influence of certain predisposing factors. Prominent among them is age with its concomitant sclerosis of the tissues and vessels. Glaucoma is essentially a disease of later life.

Next in importance is the chronic low grade autotoxemia that is so often associated with glaucoma. Acute glaucoma is much more frequently met with in women who were described by Goodell as "constipated animals." Intestinal stasis has been occupying the attention of the medical profession to a very great extent recently. There have been some rather warm differences of opinion as to details, but there has been no dissent whatever from the main proposition that intestinal autointoxication is responsible for far more evils than Metchnikoff imagined. The results of constipation are so serious that it certainly behooves us all to study it in far more detail, particularly in middle life and in the aged. It is our conviction that intestinal stasis, cardiovascular change, and glaucoma are intimately related. Moreover, clinically and under the microscope, nearly all glaucomatous eyes are vascularly degenerated eyes, a finding which lends much interest to the hypothesis of Fricker and Gilbert, above referred to. Finally among predisposing factors hypermetropia in its association with small corneas and relatively too large lenses; also shock and grief which dilate the pupil and pervert normal secretion.

With this imposing array of etiological and predisposing factors, it is a matter of surprise that glaucoma is not even a more frequent clinical picture than it is.

DIAGNOSIS.

If the increase in intraocular pressure is sudden, the clinical picture presented is of a distinctly inflammatory character, and hence is generally known as acute inflammatory or irritative glaucoma. If, on the other hand, the augmentation in pressure is slow and gradual, the condition is generally a noninflammatory one, and we speak of it as chronic simple glaucoma.

Inflammatory glaucoma.—The violence of the symptoms in this phase of the disease and its duration are directly as the increase of tension. The chief associated symptoms are trigeminal neuralgia, nausea, vomiting, nervous excitement, violent redness of the conjunctiva and sclera, a steamed appearance of the cornea, oval or ovoid dilatation with fixedness of the pupil, and rapid loss of sight. A less constant symptom is shallow anterior chamber. This clinical syndrome should be distinct enough to be readily recognized, but strangely it is often diagnosed as a bilious or migrainous attack because of the nausea and vomiting associated with the trigeminal neuralgia. The badly congested eye and sudden loss of sight should guard one against this mistake. Another error in differential diagnosis frequently made is to look upon the condition as an acute iritis, but the small irregular pupil of iritis is sufficiently characteristic to enable the practitioner to separate the two diseases. This is the pivotal point in the differential diagnosis, as on it turns the local treatment, which for the two diseases is diametrically opposite. Miotics are used in glaucoma and mydriatics in iritis. If, wrongly atropine should be used in an acute or subacute glaucoma, the chances are the eye would be irretrievably damaged and perhaps permanently ruined. Hence the extreme importance of properly recognizing the two diseases which closely parallel each other in the matter of symptoms, save for the state of the pupil, which in acute glaucoma is enlarged and in iritis is contracted. One other point of value is that acute glaucoma is rarely simultaneously bilateral.

Chronic simple glaucoma goes to the other extreme and unfolds its symptoms insidiously and very slowly, sometimes even years elapsing before the full clinical picture is developed. The excess of tension is often not perceptible with the fingers or even with the tonometer. This phase of glaucoma produces colored halos about lights, contraction of the nasal portion of the field of vision, pushing backward and excavation (cupping) of the optic nerve head, and shallowing of the anterior chamber. Because of the gradual failure of the vision and the noninflammatory course of the disease, chronic simple glaucoma is often diagnosed by the practitioner as cataract, especially as it most frequently appears in patients past the meridian of life. If the practitioner would only use an ordinary hand mirror in a dark room to throw light into the pupillary area he would be saved this error in diagnosis.

for if the pupil illuminates as a bright red area, no cataract is present and the disease may be relegated to the optic nerve, retina, or choroid. The one other differential point is that of simple primary optic atrophy, which the most expert ophthalmologist cannot sometimes differentiate from a chronic simple glaucoma. For an error of this kind the general practitioner should be freely absolved. Contrasted with the inflammatory form of glaucoma, the noninflammatory form is usually bilateral.

TREATMENT.

If the patient is seen in an acute or subacute attack of inflammatory glaucoma, the local treatment would be with pilocarpine, two grains to the ounce, to be used every hour, preceded by as hot a fomentation over the eye as the patient can bear for fifteen minutes. Leeches to the temples are sometimes used and generally with good effect. Counter-irritation over the brow and temple are equally serviceable. To relieve the terrific trigeminal neuralgia (fifth nerve pain) acetanilid or phenacetin, four grains, with codeine sulphate, one quarter grain, may be used every two to three hours. A course of calomel is invariably indicated, to be followed by sodium salicylate, five grains, or quinine, iron, and strychnine, three times a day. A good sweat is often of great help. If after twenty-four hours the pain is lessened and the sight is no worse or has improved somewhat, the treatment may be continued until the eye has quieted down partially or completely, when operation will be in order. If, on the other hand, the symptoms are in no wise abated by the foregoing treatment in twenty-four to thirty-six hours, immediate operation is demanded, as the optic nerve will not stand many days of sudden excessive intraocular pressure. The ophthalmic surgeon will have to determine whether this shall be the classic iridectomy or one of the modern filtration operations. In subacute glaucoma the treatment outlined above should control the accession of symptoms, and when the eye is quiescent or quiet, operation should be resorted to. Just as an appendectomy is better performed in the absence of high grade critical inflammatory symptoms, so a glaucomatous eye is much better approached in the period when the eye is quiet. It sometimes happens when a patient has refused operation for acute or subacute glaucoma, that with each succeeding attack the vision diminishes until finally blindness ensues. This condition is known as absolute glaucoma, in which the pupil is widely dilated, greenish, and immobile, the cornea slightly clouded, the anterior chamber shallow, the scleral and circumcorneal veins much injected, producing a practically permanent deep red circumcorneal zone. Generally tension is markedly increased. The teaching has been that for absolute glaucoma there was but one treatment, namely, enucleation, but it is our feeling that nearly every one of these eyes may be preserved to the patient (sightless it is true) by the modern operation of sclerocorneal trephining.

Chronic noninflammatory glaucoma is a field into which the general medical practitioner has not entered as he should. When we reflect that chronic low grade autotoxemia is the soil upon which noninflammatory glaucoma particularly flourishes, it seems a strange fact that the practitioner has not figured more largely in the treatment of these cases. It is our own feeling that the carefullest study of such cases from the general medical standpoint would be productive of much better results than are at present seen.

The best possible elimination is none too good for these patients. To this end the bowel, kidney, and skin should be alternately stimulated, the results being controlled by study of the indican, urobilin, and conjugate sulphates content of the urine. The systemic blood pressure is often significantly increased and is also one of the controls in this study. Diet, exercise, outdoor life, in a word, *rational living* counts for much.

As to the treatment of the eye itself, the ophthalmic world is divided into two camps, those who contend that operation offers the best chance for the preservation of sight, and those who maintain that treatment with miotics promises the patient some degree of vision quite as long as any operative procedure. To us, the truth appears as usual to lie between these two extremes. So long as a patient under thoroughgoing elimination and miotics in the eye can maintain a useful degree of vision without increase of intraocular tension or cupping of the optic nerve head, and reduction of the visual fields, we would be slow to recommend operation. But if in spite of such general and local treatment, the vision continues to fall off to a point where reading of good sized print becomes impossible and the visual field suffers with deepening of the optic nerve cup, we would urge operation at such a time with all the earnestness at our command. Our choice of operation would be sclerocorneal trephining, which to us seems a much safer operation. A word as to the proper method of miotic medication may be indulged in. Beginning with one grain to the ounce of pilocarpine and one half grain to the ounce of eserine, the pilocarpine is used three times during the day and the eserine at bedtime. From time to time the strength of the miotic is increased, enough being used to keep the pupils well contracted. The solutions should be freshly prepared, at least once in two weeks, and filtered each time. The patient is cautioned to keep the dropper clean lest the solution become contaminated. Unless the patient is willing to cooperate with the physician at every point, this form of treatment will often fail. Obviously, therefore, the miotic treatment produces its best results in private patients and frequently fails in hospital and dispensary patients, a large proportion of whom necessarily would come to operation. Ocular massage is sometimes of great help in this peculiar class of cases.

In the chronic form of the disorder, the fullest cooperation of the general practitioner and the special practitioner is demanded. If the patients will submit to thorough elimination and conscientiously adhere to the miotic treatment, they may often escape operation for many years and sometimes altogether. It is not out of place here to observe that if patients will allow themselves to be rightly guided in the way of proper living by their medical advisers, many cases of chronic noninflammatory glaucoma may in future be prevented. In this respect, glaucoma, like all other phases of slowly pro-

gressive diseases, should yield to the twentieth century idea of prevention. We are not sanguine, however, as to this outcome, inasmuch as chronic noninflammatory glaucoma is linked with wrong living, and to the average individual wrong living is infinitely easier of accomplishment than right living.

As to the operation to be performed for noninflammatory glaucoma, when such a step has been consented to, the ophthalmic profession has come to look upon iridectomy with much doubt in recent years, and the modern filtration operations are now being given thorough trial. One has a choice of Herbert's or La Grange's modification of sclerotomy, of Heine's cyclodialysis, or of Elliot's sclerocorneal trephining. For reasons which we have set forth elsewhere (*Transactions of the American Academy of Ophthalmology and Otolaryngology,* 1913) we believe the sclerocorneal trephining operation by far the safest and most productive of results. In twenty-nine cases performed thus far by this method, there have been no serious complications at the time of operation in any case, and this we do not believe can be said of either the classic iridectomy, or La Grange's scleroiridectomy. By the trephining method seven eyes with absolute glaucoma have been preserved to their possessors, that formerly would have been removed. In seven other eyes which were sightly, there was a small degree of vision gained by the operation, such as hand movements at one to three feet.

In the remaining fifteen eyes the results were good, in that the eyes gained considerably in vision and usefulness. The greatest gain in vision after trephining was from 3/50 to 6/12. The least gain was from 5/12 to 5/10, but this gain was greater than appears on the surface, for it was the patient's second eye, the first one having already been blinded by chronic simple glaucoma. Today (after one year) this patient's optic nerve excavation remains what it was one year ago. His field of vision is enlarged and the cicatrix is filtering nicely. We are therefore justified in feeling that the usefulness of this eye will be preserved to him for many years, which is all that can be hoped for from any glaucoma operation.

Because of our experience with sclerocorneal trephining in these twenty-nine cases, we now approach a glaucomatous eye from the surgical standpoint with a hopefulness that we have never enjoyed up to this time.

1212 Spruce Street.

GLIOMA OF THE CAUDA EQUINA.

Report of a Case with Secondary Gliosis of the Spinal Cord.

By William M. Leszynsky, M. D.,
New York,
Attending Neurologist, Lebanon Hospital; Consulting Neurologist, Harlem Hospital, and Christ Hospital, Jersey City.

The patient whose case is herewith reported was admitted to my service in the Lebanon Hospital, October 25, 1911. A report of an elaborate and exhaustive study of the microscopic findings therein, by Dr. E. P. Bernstein and Dr. S. Horwitt, will be found in the *Medical Record* for October 18, 1913:

Case. Miss R. M., born in the United States, aged forty-nine years, twelve years ago slipped and fell striking herself violently on the buttocks, but was apparently uninjured. She remained well until three years later, when she began to have pain in the left lumbar region, radiating in the course of the left sciatic nerve and extending to the knee. At times, the pain also occurred either in the anterior portion of the left thigh or in the left calf. The pain was paroxysmal, and usually of a sharp or darting character, lasting for several hours. There were periods of several months in which she was entirely free from pain. At times, the pain was so severe that she was unable to lie abed. She was treated for sciatica by massage, baths, etc., for several years without relief. About four years after the left lower extremity was attacked, the right

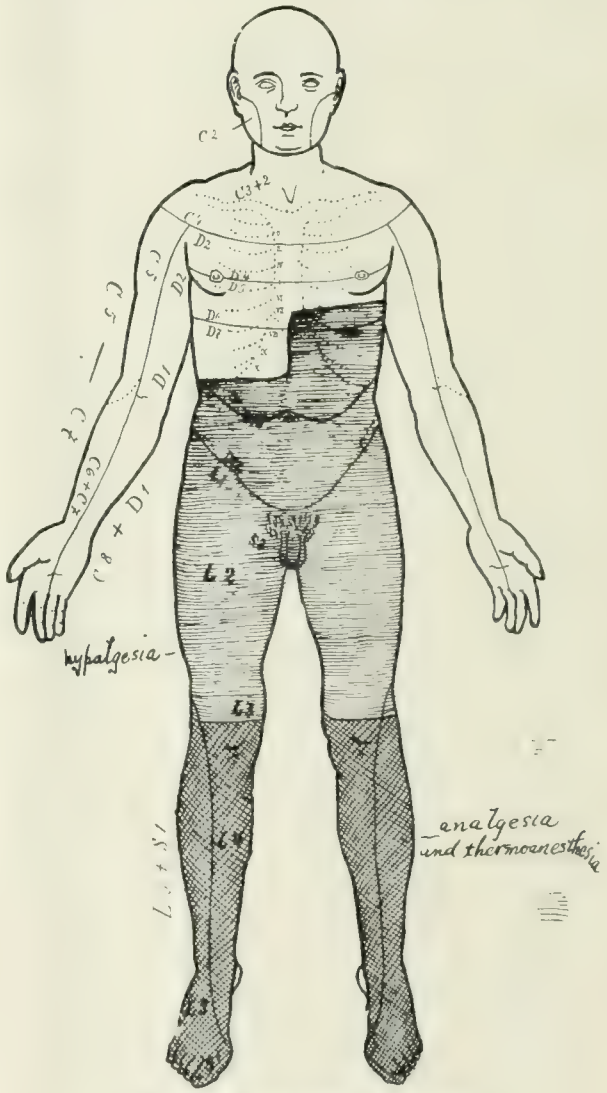


Fig. 1.—Chart of sensory disturbance.

side became similarly affected. For a number of years she had an occasional bandlike feeling of pressure around the waist line. During the last three years, there had been numbness in both feet and toes. The legs would often give way in walking, and were not under good control, and she noticed that walking was getting more difficult. At this time, the knee jerks were found absent, and there was loss of sensibility extending from the toes to the knees. This was accidentally discovered when her sister applied a strong faradic current. She was then told that she probably had locomotor ataxia. She was able to walk, but with increasing difficulty, until two months ago. She never had any pain in the back in coughing or sneezing. She still had occasional slight pain in both lower extremities

which had become progressively weaker, so that now she was unable to stand or walk. About three weeks before, she noticed occasional incontinence of urine and frequent attacks of involuntary flexion of the left lower extremity at the knee and hip joints. She had recently had several attacks of occipital headache; no tinnitus, vertigo, nor vomiting. The bowels were always constipated, and prolapsus ani had been present for many years. She had been in the habit of drinking one glass of beer and several cups of coffee daily. Menstruation ceased the previous February (menopause). She had always been of a nervous temperament.

She was unable to stand or walk and there was moderate generalized atrophy of both lower extremities. At brief intervals (i. e., every few minutes) there occurred sudden involuntary flexion of the left lower extremity at

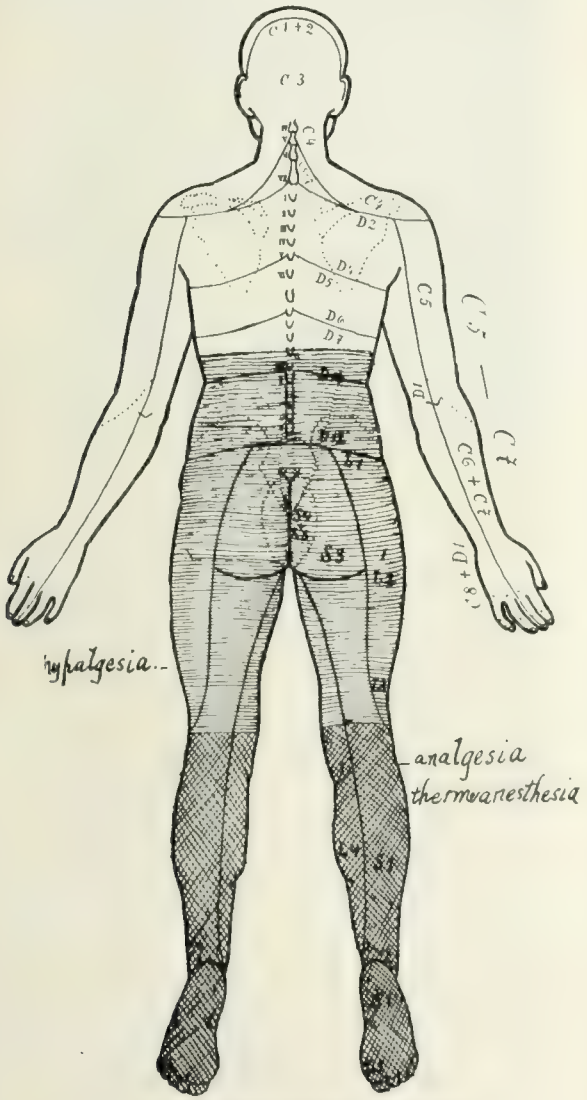


FIG. 2.—Chart of sensory disturbance.

the knee and hip joints, also occasional adductor spasm. While in recumbency, she was unable to elevate either leg or move the feet and toes. The crural group and the iliopsoas were paretic on both sides. When either thigh was passively elevated and supported, she was able to extend the leg several times, but the muscles became rapidly exhausted and she was then unable to accomplish the slightest movement. There was bilateral foot drop with contracted tendo Achillis on the right side, and a trophic ulcer was forming over the heel. The knee jerks, Achilles and plantar reflexes were absent. There was an old scoliosis with the convexity in the lower thoracic region; tenderness on pressure over the right side of the first lumbar vertebra. In the midthoracic region on the right side there was a small subcutaneous fibrous nodule about the size of a large pea which was freely movable. Later, this was excised and found to be a fibroma. There was complete analgesia and thermoanesthesia, and loss of the sense of position on both sides extending upward to one inch above the patella. On the right side anteriorly, hypalgesia extended to one inch above the level of the umbilicus, while on the left side it reached to three inches below the nipple. Posteriorly, it extended to the level of the eleventh thoracic spine. *Tactile sensibility was preserved.* (See chart of sensory disturbance.)

The faradic irritability was normal in all nerves and muscles in both lower extremities. The upper extremities, face, tongue, cranial nerves, pupils, and optic discs were normal. There was no evidence of disease of the thoracic or abdominal viscera. Radiographs of the vertebral column showed normal conformation, and there were no indications of exostoses. The Wassermann serum reaction, the blood count, and urine examination were negative in result. No cerebrospinal fluid could be obtained, although two series of punctures at different levels were made at intervals during the course of two weeks. At every puncture, however, there was a distinct sensory reaction following impingement of the needle upon the nerve roots forming the cauda equina.

The failure to obtain cerebrospinal fluid was subsequently explained by the presence of a tumor mass which completely filled the sacral canal. She remained under observation for six weeks. During this time, the attacks of spontaneous flexion of the extremity subsided, and the paraplegia became complete, with vesical and rectal incontinence. The history of unilateral root pains of several years' duration, followed by a similar condition on the opposite side, and later, by signs of compression such as bilateral foot drop, and ultimately complete paraplegia, etc., were all indicative of a neoplasm, involving principally the cauda equina. It was assumed that the adjacent lumbosacral cord also the thoracic portion of the cord were secondarily affected. Operation was advised, and this was performed, December 22, 1911, by Dr. Charles A. Elsberg, to whom I am indebted for the following notes:

Removal of twelfth dorsal, first and second lumbar spines and laminæ in the usual manner. Dura of tissue paper thinness so that a large tumor could be seen inside of the dura. When the dura was incised, a typical gray brown tumor mass was exposed, which filled the canal and extended from the lower part of the wound up to and over the conus. The tumor was well encapsulated, and the roots of the cauda were spread over its dorsal surface. Above, the tumor extended above the level of the tip of the conus. The growth was well encapsulated above, and when it was depressed with a blunt instrument, cerebrospinal fluid escaped in moderate amount. Below, the entire spinal canal was filled by the tumor mass. The growth was left for extrusion. Suture of muscles, fascia, and skin in the usual manner. Duration of operation to opening of dura, fifteen minutes; to end of operation, fifty minutes.

December 26th: General condition excellent; motor power in lower limbs somewhat better; could flex both limbs at knee to about 60 degrees; some movement of toes of left leg.

December 29th: Suture removed and wound reopened under ether anesthesia. Tumor found fully extruded with most of the roots of the cauda behind the tumor. With little difficulty, most of the growth was removed within its capsule, although in the removal the capsule tore below, and some pieces of the growth had to be separately removed. Some oozing, controlled by hot packings. Suture of dura, muscles, fascia, and skin in the usual manner. Duration of operation, fifty-five minutes; amount of blood lost, moderate; condition of patient at end of operation, good; anesthesia uneventful.

February 1st: Patient had been slowly losing flesh and strength; she looked pale; she had several large trophic

ulcers on both hips and back which were very deep, and granulating only poorly. She had no pain. The motor symptoms were unchanged from before the operation. The slight improvement that occurred between the two operations had disappeared. There was still incontinence of urine and feces, as before the first operation. There was now a marked diminution of all three sensations up to the level of the seventh dorsal segment. There seemed to be no healing power in the patient's tissues. The wound edges were not united in four weeks, and there was, for two weeks, a slight discharge of cerebrospinal fluid. Part of the wound opened after three weeks, and its appearance was that of a freshly made wound without granulations. Finally, after four weeks, the wound began to granulate, and at this date, only a superficial granulating surface about four cm. in length remained. She had had some slight fever at times, due to the large sloughing bedsores.

Her condition remained unchanged, and death took place from exhaustion, March 18, 1912. The autopsy was performed on the same day. Consent was obtained, with the proviso that the examination be limited to the spinal cord. The report from the pathological laboratory of the Lebanon Hospital is herewith appended:

Scar of laminectomy operation, extending from the eleventh dorsal to the third lumbar vertebra. The *spinal canal* from the eleventh dorsal vertebra was more roomy than normal. The dilatation was uniform, there being no localized depressions or protuberances. The bone, ligaments, and periosteum were not diseased. The dura mater showed no congestion, exudation, nor adhesions externally. Internally, beginning with the lower portion of the lumbar enlargement, it was adherent to the pia, and at the level of the conus, it became intimately adherent to the tumor mass to be described below. Beginning with the lumbar enlargement, the cord looked more yellow than above that level. It appeared thicker than normal, as though dilated, and the covering pia was ademato us. Just above the conus, the dura was separable with difficulty from the pia and cord. At the level of the conus, the dural sheath was (see Fig. 3) filled with tumor mass, to which it was intimately adherent. This tumor mass was of a fibrohyaline structure, pushing some of the nerve bundles of the cauda equina against the dural sheath, and enclosing others within its substance. In the middle portion of this mass, there was a longitudinal cavity about one and a half inch long. At the level of the first sacral segment the tumor mass was less hyaline, but somewhat granular, and, in the lower part of the sacral portion, the dural sheath enclosed a tumor mass the size of a pigeon's egg, which on section was mottled grayish red, and coarsely granular. It was loosely adherent to the surrounding dura, and the nerve bundles were disposed peripherally to it. On transverse section made at different levels of the lumbar enlargement, the central portion was found to be hollowed out by irregular longitudinal cavities. The cavities in the cord described in the report on the gross pathology lay chiefly in the anterior portions of the posterior columns. Bordering on the cavities were areas of gliosis. The tumor mentioned in the gross description as embracing the cauda equina was a *glioma*. Both the ascending and descending tracts showed advanced degeneration.

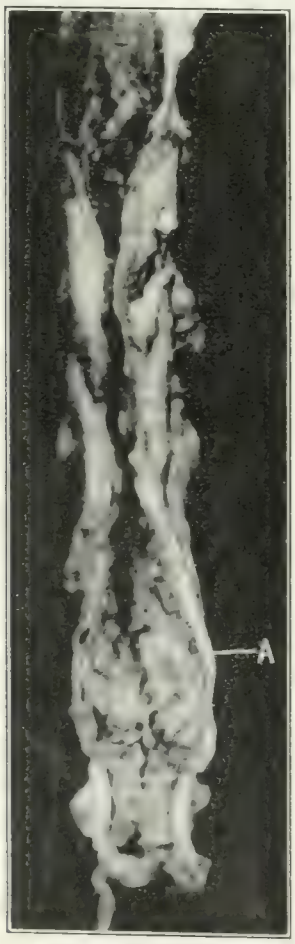


Fig. 3.—Tumor of Cauda equina.

145 West Seventy-seventh Street.

TRANSVESTISM.*

A Contribution to the Study of the Psychology of Sex.

By B. S. Talmey, M. D.,
New York.

The study of psychoerotic pathology dates back no farther than the last quarter of the last century. Before that time very little was known of sex, except its pathological anatomy. Complete silence reigned on sex psychology. No textbooks dared to lift the veil over this important part of the human psyche.

The first real impetus to the study of the psychoerotic anomalies was given by the publication of Krafft-Ebing's book, *Psychopathia sexualis*. Since that time the literature on this subject has become so vast that it could fill a large library.

One of the newest discovered anomalies in this sphere is "transvestism," or "cross dressing." In his book, *Die Transvestiten* (Magnus Hirschfeld, 1910), Hirschfeld describes a number of cases, where the sole psychosexual anomaly consisted in the desire for cross dressing. The male patient has the abnormal desire to dress like a woman, and the female patient longs to dress like a man.

The cases of pure transvestism thus far published are still scarce. Hence every additional case, shedding light upon this interesting subject, deserves to be recorded. This consideration prompted the writer to publish the following cases.

The first patient was known to the author, in a social way, for a number of years, and during all this time, the writer never detected any outward suggestion of femininity nor did he discover any delusional state in his psyche. The patient's narrative of his case took the writer by surprise. The history of his case reads as follows.

Case I. Mr. S. was the thirteenth child of a healthy prolific family of fourteen children. The first six died young. The cause of their death is unknown to the patient. They had no peculiarities. The father was the mother's senior by fifteen years. He died when fifty-eight years old from injuries received in an accident. The mother was fifty-seven years old when she died.

The patient was very delicate all the time up to four years of age. While still an infant he had the cholera, during an epidemic in Germany. He began to walk when four years old. From the fourth year on he was always healthy, except for a certain eye trouble when twelve years of age. He never had any convulsions nor fits of hysterical crying. He never had any accidents to speak of.

His father died when the patient was four years old, and the boy was brought up by his mother. As the youngest living child (*Nesthäckchen*, the last of the brood), he was rather spoiled by her. He slept with his mother until

*Read before the Society of Medical Jurisprudence, December 8, 1913.



Fig. 1.—First patient, as Queen Louise.

he was fourteen years old. The patient's looks were rather girlish. He always wore girl's shoes, on account of the high instep. Up to twelve years of age, the patient played with girls, made dolls' dresses, cooked on girls' cooking stoves. The patient was very bright in school and often received prizes for scholarship. The patient's sister was a dressmaker and often used the patient as a model to drape or to try on dresses. Otherwise the patient was never seduced by anyone to irregular practices. When ten years old he began to rub his knees against each other, experiencing certain pleasurable feelings while doing so. He came upon these practices by himself, without any seduction from outside. Later in life, when masturbating, he donned female attire, but his fancies had always women as the objects.

With puberty a certain change took place in the psyche of the patient. At this time, when about twelve years old, he began to think, how nice it would be if he could be changed into a girl. He never had any sexual desires for women, although he liked strong women. Before marriage he only had intercourse three times with venal women, the first time when he was eighteen years old, upon the invitations of friends in order to be like the others.

When the patient is dressed like a man, no one would take him for a woman. There are no strongly pronounced feminine traits. The sexual organs are those of a normal man. The distribution of the hair on the body is almost the same as in any other man. The head is rather bald. On the arms there is no hair, but the hands are covered with hair. The hands are rather small. They are narrow, soft, well shaped, artistic. The fingers are tapering. The legs and feet, when in dainty stockings, are rather feminine. The patient wears woman's shoes, size 7 E. Otherwise when he is dressed like a man he looks like a normal man. But when the patient is nude, as in his photograph, *The Bath of Psyche*, or when dressed like a woman as in his photograph as *Queen Louise*, no one would take him for a man. The lines of the figure in Psyche are absolutely perfect. He only used a little padding for the breasts to make the lines absolutely without blemish. On one breast there is an extra wart; the other two warts contain erectile tissue. The shoulders are narrow, the hips large. The general appearance of contour and the measurements are like those of a full grown young woman.

When dressed as a woman the patient does not need any padding of any kind in his dresses. He has taken walks on streets unnoticed, though as a precaution he was always veiled. But he never drew any attention, so perfectly does he look like a woman.

The patient's behavior is quiet but not effeminate. His voice is low, of uncertain timbre. He tries to cultivate a female voice, without resorting to falsetto. His writing is uneven, sometimes bold; mostly, however, it is a woman's small handwriting. The gait is like that of a woman, swaying in the hips.

The patient suffers from periodical hemorrhages from the nose, which he is inclined to consider as a kind of vicarious menstruation. He possesses a bright intellect, and the power of judgment and observation is keen. He is proprietor of a big business and himself takes charge of it. He is a student of archeology and at the same time author of some literary productions, which are mostly



Fig. 2.—A characteristic [illegible] of patient N. [illegible] posing in imitation of a celebrated painting.

written along useful lines for practical value rather than for style and reputation. His memory is good for large things, but he forgets small matters. He is not courageous.

As far as the patient's emotions are concerned, there is a marked feminine sensibility. Tears come easily when watching emotional scenes. He rarely laughs outright, but smiles almost constantly when in conversation. He is quite sentimental. He is very sensitive to pain, still he is stoic enough not to complain. He blushes on the slightest pretext. He is possessed of feminine adaptability. He is of a yielding disposition, though at times he is quite strongheaded. He is possessed of a strong sense of order, and is quite energetic. He likes needle work and loves to do crocheting, although he has little experience. He also likes female amusements like *Kaffee-klatch*. He is a free thinker.

The patient possesses normal love and admiration for the other sex and experiences some sex attraction for women. He takes the greatest pleasure in contemplating pictures of the female form. Still his sexual feelings were and are very little pronounced for women and never for men. His day dreams and illusions are only of females. He has no homosexual inclinations, but rather a profound repugnance to homosexual relationship. He never longed for a male instead of a female lover. Still he seems to want a man before whom he could expose the charms of his own person and who would kiss and caress him. His sexual desires are not developed. He never was in love with any women or men. His wife proposed to him, otherwise he may have remained single. He married when he was twenty-six years old and has three children, two girls and one boy, all perfectly healthy, well built, and strong. In coition he prefers the under position, although his wife does not take kindly to it.



Fig. 3.—Third patient.

The peculiar anomaly of the patient, or the inversion he is suffering from, is the desire to be a complete woman. From his childhood, he had the wish to be a girl, although he never identified himself with any girl. His desire now is to live as a woman absolutely.



Fig. 4.—Fourth patient, dressed for the street.

He never had any dreams where he saw himself as a woman, in fact he never had any erotic dreams. He never wished to go through the experience of having a baby. But he often wished to be castrated to be more like a woman. He longs for the female form.

The patient is attracted by beautiful women, but the instinctive feeling toward them is not the desire for possession or jealousy, but more of envy that he cannot be one like them. The appeal of woman's beauty to him is connected with the desire of inner imitation or psychical identification of himself with her, the desire to be in her place, *Einfühlung, Miterleben,* as the Germans call it. He would do almost anything to see a girl in any condition of exposure, but he would experience only the impulse of inner imitation not that of contrectation. His desire to show himself in female clothes is also founded upon the impulse of being considered a full woman.

The patient's inversion from a legal point of view is mainly confined to the sphere of clothing. He has a profound longing for female clothes. He takes pleasure in the sight of female attire. Woman's underclothing exercises a greater charm upon him than the woman herself. He especially attaches great importance to the corset, but he is keenly interested in all kind of feminine dress. He even longs for a female boudoir. Each costume gives him a different variety of pleasure. He is not exactly occupied with fashion, although he is not averse to this thought.

The patient is always dressed in female underclothes. He wears only a man's coat, vest, and trousers, or the clothes belonging to the outward cover. He wears woman's shoes, shirtwaists, corsets, stockings, etc. The earlobes are pierced for earrings, which he wears every night. He takes breakfast dressed as a woman.

When the patient is dressed as a woman, he has all a woman's feelings and longings. For this reason he tries to dress as a woman at every opportunity.

He often walks the streets in full evening dress. This desire to be dressed like a woman takes the form of an imperative impulse. When he cannot dress up he becomes restless. He would rather commit suicide than be without female apparel.

The patient can concentrate his thoughts better when in female attire and consequently can do more and better brain work. When dressed as a woman, he feels himself to be in normal condition and is cheerful. A feeling of absolute comfort and restfulness comes over him when in female clothes, and his behavior is in full accordance with his feelings, while in male dress, there is a kind of absentmindedness about him; he is always thinking of his female dresses.

In his day dreams, when in female attire, he sometimes fancies being undressed like a bride and led to bed, but by a woman and not by a man. In these fantasies he remains passive and is conquered, kissed, and hugged by the woman.

The patient's wife knew of his anomaly and objected to the masquerading. Still she married him, and now all objections are overcome. He and his wife wear lingerie in common. His wife gives him presents for female use, like perfumes or jewelry, for which he has a great love.

The history of this case offers many points of interest to the psychologist. In normal men dressing is never a matter of great concern. Here we have a man who in all other ways would belong to the superior class of men, *gebildete Menschen,* a man at the head of a large business, a writer and lecturer of no mean merit, a man holding honorary offices in social and literary societies. Still this man attributes such a vast importance to feminine dress as is very rarely found, even among women themselves. Such a condition is in no way a mere fancy. If this impulse is not a true obsession, it is surely an important anomaly.

Case II. The second case is that of a gentleman of about sixty-two years of age, living in the western part of our country, who is personally unknown to the writer and whose history he received through the assistance of his first patient. With only a few slight changes, the patient's letter reads as follows:

"My father's age, at the time of my birth, was thirty-two years, and his age at his death was seventy-six years. The cause of death was pneumonia. My mother's age at the time of my birth was twenty-nine years. She died of dropsy at the age of seventy-eight years. I cannot recall that either of my parents was ever sick to a degree where a doctor was necessary. They were both active and energetic people. I never heard of any nervous diseases or insanity on either side of my house. My father seldom took any alcoholic drink, and my mother never. I had three brothers older and five sisters younger than myself. All of them were strong, robust, and of good health. My general health during childhood was good, except that like most other children I had the measles, whooping cough, mumps, and a few other children's maladies. I never had convulsions nor nightmares except to dream that I was a girl and awake to find it otherwise. I was known as mother's boy, and mother and I were always very fond of each other. I have always done my best to please her, spent as much of my time with her as possible, and took great pleasure in the tasks she would give me, i. e. knitting, crochet work, or plain sewing. On most of all these occasions she would first put me in girls' clothes. The hardest tasks would then be a pleasure for me. I have often thought that her reason for putting me in girls' clothes was because she knew that nothing else would appeal to my feelings stronger as being dressed like a girl. These practices continued up to my twelfth year of age. From my earliest recollections my playmates were always girls, and my playthings were dolls, ribbons, and miniature housekeeping furniture, etc. I was an expert doll maker, and cut and made doll clothes for my sisters and other little girls. At ten years of age, I could cook and prepare a meal, which only girls much older could accomplish. I was known to have no lack of courage. Whenever any of the boys tormented any of my girl playmates, they always received the licking coming to them, and it was always I who saw that they got it.

I remember that at about fourteen years of age my breast became swollen and hard and remained so for several months. This was the only abnormality that I ever experienced. In coition, I very much prefer the lower position. Were I addicted to masturbation, it would only be possible in woman's clothes. My inclinations are always toward strongminded, energetic women of the masculine type. I have also an uncontrollable admiration for other men of my type, when seeing them attired as women. Still I never had any homosexual inclinations. I always had an almost uncontrollable desire to wear woman's attire. When so dressed, I can always think more logically, feel less encumbered, solve difficult problems in a manner next to impossible under any other conditions. But for the popular prejudice against freedom of dress, I would certainly wear only woman's attire, and that in spite of all taunts and derision in the universe. Among my other characteristics, I wish to state that I blush readily. I could never countenance vulgarity, i. e., smutty stories or obscene remarks. I have always been regarded as a good nurse. My best and truest friends are invariably women. My first attempt at cohabitation occurred when I was eighteen years of age. But the situation so overawed and frightened me that the effort proved a fiasco, and I did not try the venture again until after I got married.

My skin is soft and clear, the hair of my head soft and light, the beard is soft and very light, and there is no hair on my body. My shoulders are square and my breasts quite large. My measurements are waist 38, chest 46, and hips 44 inches. There is no trace of Adam's apple. My voice is high; I can easily sing high A, or high tenor in any key. I take great interest in fashions for women. I am receptive. I am very sensitive to pain or pleasure and I am inclined to be stubborn. My intellect is keen and I think logically. My judgment and power of observation are generally good. I am not much inclined to religious fanaticism. My adaptibility is active, and I yield slowly. My fancy is strong. My sense of order is acute. I can perform systematically most any work that a woman can. On the other hand, as a man, I easily excel seventy per cent. of my fellow men. In support of this fact I will give a bit of my life history.

My fifteenth year marks a turning point in my life. An uncle, a fanatic preacher, came to our house on an extended visit and accidentally discovered my sinful (?) habit of occasionally dressing up in girl's clothes. He immediately went to my father and all but roared his head off against my sinful habit, with the result, that my father ordered me forthwith to gather up and burn every article of girls' clothing in my possession. He told me that if I were seen in girls' clothes again he would cripple me, etc. I stood it for a while, but I soon became despondent, and one day I kissed my mother a fond goodbye and disappeared. I made my way to the then far west, landing at Grand Island, Neb., in the spring of 1867. I drove a team on construction work of a railroad and, in the fall of the same year, found myself hunting buffalo. In the five ensuing years I have done my part in the winning of the west, with the result that I carry two Indian bullets in my legs to this hour. But I cover them up with petticoats as often as opportunity permits. Then I forget all about them, as well as all other troubles.

I have never dissipated at any time of my life. I have served as a detective in a United States marshal's office, as a sheriff, and as a justice of the peace. For five years I was publisher of a newspaper. I never failed to make good in any of my ventures. I am still hale and hearty and dare say that I have been able to conquer most everything except my uncontrollable passion for female attire. In fact I would not care to live without the opportunity of indulgence in my favorite pastime. I never appear in public in female attire, but when the inclination to dress comes over me, I am unable—try as I may—to resist it.

Now, really why should I resist it? I am doing no one any harm by my harmless indulgence. I aim to trouble no one, and allow no one to trouble and hinder me. I know that the majority of modern mankind regards such an inclination as a silly weakness in a normal man, but that does not make it so. I know that my characteristics in this case are due solely to prenatal causes, viz., my mother's unbounded faith and hope that her expected child would be a girl. If error was made, Nature alone is responsible, and he who is foolhardy enough to fight Nature, invariably gets it in "the neck." *Vive la jupe, et honni soit qui mal y pense.* Respectfully, M.

In his last remarks, the patient in our second case protests against the majority of mankind that regards his inclination as a silly weakness. Still the condition cannot be considered a mere fancy. When the desire for cross dressing assumes the degree of a veritable imperative idea (if the desire is not satisfied, some patients are seized with anxiety accompanied by cold perspiration and palpitation of the heart), so that a boy of fifteen becomes despondent and is driven away from his home and a loving mother, because he is not allowed to satisfy it, such impulse must be considered pathological. The fact that the patient began to harbor this peculiar desire in his early childhood also determines the morbidity of the desire.

That the patient considers himself a normal man is quite natural, but his belief does not make him so. Neither will his explanation of the etiology of his anomaly stand scientific criticism. Those conversant with the Mendelean laws of heredity will never admit that the faith and hope of a pregnant mother could determine the characteristics of the child.

The third case is of a gentleman, living in London, England, thirty-two years of age, married, and by profession a printer. In his answer to a letter written by Mr. S., the gentleman of our first case, asking Mr. J. for his life history, Mr. J. wrote that he expected a letter from S. because Agnes M. had told him that he would receive one. Now this Agnes M. who, having been homosexually inclined, did not belong here in this paper, and, by the way, later on committed suicide, was a man; and it is characteristic of these patients that they called each other by girls' names. We shall meet with the same peculiarity later on in the history of Professor M. Our Mr. J. signs his name "Yours femininely, Blanche," then follows his real name, Harold I. J. The part of the history of this "Blanche" that interest us most reads as follows:

Case II. In beginning a short history of my life in the essential of having a complete female mind with a normal male body, I must say that the feminine instincts first made themselves apparent at the early age of four years. I was then attending a small girls' school in the country, my mother having a business in town. At about that age, it was suggested that it was about time that I was put into knickers. I remember very distinctly, indeed, the horrid feeling that assailed me when first dressed in the dress of a boy. However, it was not to last long. For I found out where my frocks had been put, and managed to get a full outfit. These I put on, and to my great delight, I once more felt that I was dressed properly. This went on for a few days, until I was found out. I remember well the chastisement that followed. However, I did not seem to be able to fight against the craving for frocks. Once again I was found out, and this time, to my great delight, my mother resolved to give up the idea of putting me into a boy's clothes for a few more years. In coming to this conclusion she was influenced by my eldest sister, and it is to her good offices that I am indebted for having been able to wear frocks for the first eighteen years of my life.

I had a young lady's education, and all my life I have never felt happy unless dressed as a lady. When I was fourteen years of age, my sister married, and I lost a good backer in my desires. However, the time has done its work, and I was allowed, as mentioned before, to go on for another four years. When I had reached the age of about eighteen years, necessity made it imperative that I must earn something more, and since that could not be done as a girl, I was forced to go out into the life of the world as a boy. Never shall I forget the great aversion which assailed me, when I first went out in trousers. I seemed ashamed to look anyone in the face and I always wanted to hide my legs.

I never gave up feminine underwear, and I would not under any condition be without the necessary appurtenances of feminine attire. Well, the years went on, and I continued to dress outwardly as a man, earning a fair wage as a printer, a trade I managed to pick up at my first place, where I started as a reading boy. When I was twenty-four years old, my dear mother passed away, and I was left on my own resources. I managed to find a comfortable home with some old friends of my family who knew of my desires and longings for female dress. I was told that I might dress as a woman in the house, of course I jumped at the offer, and here I am at the present time. I dress as a man in outside dress only. But all my life, with the exception of the few days mentioned, I have worn female underwear.

My mind is never contented during the daytime. When the evening comes, the first job on getting home is to don a petticoat and frock and to be for the rest of the evening in the garb which my mind tells me is the right one, but alas, which my body negatives.

The measurements of my body without female dress are, chest, 37 inches, waist 28 inches, hips 39 inches. With female dress I make a bust of 36 inches, waist of 22 inches, hips of 36 inches. I take 5's in shoes and 5½ in gloves at present. I have been down in my waist measurement as low as 19 inches, but that small size made me unwell and I had to go back to 22 inches.

With regard to the wearing of female attire, I have felt no particular liking for any one part of a lady's outfit, but when I am wearing the dresses, etc., I feel in my heart that this is the proper dress, and that I ought really to be always wearing it. How different one feels in the two styles of clothing. In the garb of a man, I feel nothing but nausea, and the thought that I am not really a man is often running through my mind.

Respecting sexual congress, I may add that the feeling that would lead to such behavior has never worried me, hence the silence of any mention in my letters. If I am thrown in the company of young men, I seem to feel altogether out of place, and a shrinking, timid feeling takes possession of my mind. Why is it? I have asked myself that question, times without number, and I could never arrive at a correct answer. On the other hand, I am perfectly at home in female company and find myself thoroughly competent to converse upon the subjects most dear to the female heart, dress, etc.

As far as my knowledge goes, there has never been any cases of effeminization in my family, but there are numerous cases of nervous diseases, but never anything affecting the brain power of the individual.

With regard to the effect my behavior has upon my next relations, those who do me the honor to tell me so, think that I am clever and strongminded, but very eccentric. Of course I put up with that, as they cannot possibly think as I think, hence the difference of opinions.

This case differs from the first two in so far that the pronounced anomaly dates back to the very early age of four years. In the two previous cases the initiative for the masquarading was taken by the patients' sister and mother respectively. Here the young boy of four years of age, forces his mother to keep him in girl's clothes until the age of eighteen. Another interesting point is the emotions of the patient in presence, or rather in company of other young men. These emotions resemble greatly those of homosexual individuals. Still our patient does not manifest any homosexual

inclinations. At the time when his letter was written, seven years ago, he seemed to have been entirely frigid, and at present he is happily married.

The fourth case is that of Professor M. In his letter to Mr. S. where he describes the history of his case, he addresses our first patient by a girl's name. His letter reads as follows:

CASE IV. My dear Miss Othilie: If you don't care, I will address you by this pet name under cover. A good many of my letters are addressed on the envelope as Miss Maude M. While writing you this letter I am dressed in full female costume. My mother dressed me in girl's clothes until I became a large sized boy, and when she attempted to put me into boys' clothes I would kick and scream. Since that time when opportunity presented itself I would masquerade in female garb. There seems to be a peculiar fascination and pleasure to me when dressed in the clothes of the opposite sex. A sort of an irresistible impulse comes over me at times, and I cannot extricate myself. People cannot understand why I want to dress in this manner. They do not know the pleasure I experience. I can control my thoughts better, write and seemingly work better when dressed in skirts, and I am more contented. I have a most beautiful form for a man aged sixty-two years. Very few ladies of my age look as well as I do. I measure 32 inches waist or corset measure, 40 inches bust. I am 5 feet 7 inches in height. I have small hands and feet, a beautiful head of hair which I can do up in lady's fashion by the aid of switches.

I do not go down to the business section of the town, dressed up in female attire. Too many people here are just looking to cause trouble. This is a farmer town of 7,000 to 8,000 inhabitants. The past two years I lived in Dayton, Ohio, a city of 100,000 inhabitants. The people did not molest me, and I had police protection. While in this place the populace have persecuted me in all kinds of ways, even when dressed as a man. They made threats of mob violence and attempted to incarcerate me in a lunatic asylum. So you see I am up against it. God and my hypnotic power were all that saved me. I am plucky and not afraid of any one, so long as I am in the right.

I was arrested in this city April 1, 1905, for appearing on the street dressed in female attire, although I have a State license to protect me in trying to make a living outside my pension from the government on account of my old army trouble. Some people are unkind enough to tell me that what is the matter with me is a female trouble. They also tell me that I look like a woman, dressed in man's clothes, when I am on the streets. My sexual organs are fully developed and do not differ from any other male organs. A number of years ago I was strong sexually and fond of the opposite sex. I was once married for six months to a wealthy German Jewess who had all kinds of money. She was five to six years my senior. She was a widow of an old soldier, without children. I then made an attempt to have intercourse, but failed. My wife thereupon left me. Nowadays I care more for my own sex. Men look more attractive to me than the woman does. It seems strange, but I think all female impersonators learn to have an abhorrence for the female sex, even a hatred in the course of time. I have thought for some time, I was possessed with a female spirit, or a female soul inhabited my body. If I am a man, why is it that some men wish to have sexual relations with me? Is it a chemical affinity or a mental attraction, or something else attracts them? Dear Miss S., as you and Maude are in the same boat, I am free to ask you these questions. I am pleased to find one who thinks as I do. The common herd does not understand me.

This case throws a certain light upon the psyche of the woman impersonators. They do not become effeminate through the long habit of masquerading, we must not confound cause and effect, but their inherited anomaly leads them to choose impersonating as a profession. A normal manly man would hardly select such a profession as his life work.

An interesting point in the letter of this patient is his wail and cry that the common herd does not understand him. It is the old feminine protest that men do not understand women. It is the familiar catch phrase which a flattering yellow journalism and mediocre literature are continually dishing out to their women readers. Men will never understand women, is preached in and out of season, insinuating a certain depth in and mystery about her psyche. Most certainly, man does not understand woman's psyche. He does not understand his own. The experiments in psychological laboratories are dealing only with the relation between sensations and perceptions, not with the "whence, how, and the why" of the mechanism of the mind. Still, the workings of the human mind are subject to observation, and we know by experience that woman's psyche changes with the change of her dress. The mind of a man born in poverty and brought up in humble surroundings, will always remain poor, even when he becomes a millionaire. He adapts himself with great difficulty to changed conditions. Woman's adaptation to new surroundings is phenomenal. Dress her as a queen, and she is a queen, clad in rags, she acts the beggar. Normal men do not understand the nature of such a mind. Neither does man understand the wonderful instinct of the hymenopter. Yet the insect seems to be less proud of its mystery than our patient of his.

The following case is that of a gentleman, aged thirty-six years, an artist painter who is about to marry. In his letter to our first patient, dated December, 1907, he protests against the insinuation of homosexualism. He writes as follows:

CASE V. The reason why I did not answer before is because it seems to me that our views on the matter mentioned are very diverging. As far as I can judge from your letter, it looks as if you consider man's love for dressing in female clothing equal to homosexualism. Another reason is that I am collaborating with an artist friend of mine in Bruxelles, Belgium, touching on the same subject, but from another point of view. I waited for his answer first. I can tell you that homosexualism has always been an abhorrence to me, and that the sole reason for my desire to wear gowns is purely a feminine love for what is beautiful and picturesque. In my relations to the other sex, I am just as normal as any other man.

From the point of view I look at cross dressing, it seems to me a hopeless thing to expect a realization of my ideas, which are that if a man is in the position that he, without neglecting the duties he owes to the community he is living in, can follow his tendency to wear female costume, he ought to have the right to do so.

But I am tired of the whole thing, it has brought me nothing but trouble. The man who feels himself sexually stirred by the sight of a woman is normal, but a man who finds a certain nervous satisfaction in wearing female garments, e. g., lace trimmed underwear, is considered unnatural and is looked at with the same contempt as if he was a public drunkard, nay worse than that. Nothing is more contemptible in the eyes of some people who think themselves on the summit of civilization, than the desire for cross dressing. Hence I think the best thing I can do is to abandon the whole thing if I can. I know very well that it will never die out in my brain.

Some day during this year I am going to be married. Perhaps married life and hard work will put an end to my swarming around in fields where there is much of trouble and few good things to reap.

In considering the histories of our five cases, the important question to be answered is whether transvestism is only a symptom of homosexuality or whether it is a pathological entity by itself. Cross dressing was known in medical literature before Hirschfeld's publication, but it was con-

sidered a mere symptom of homosexuality. The homosexual pathic has naturally the impulsive desire to dress like a woman, and vice versa, the Lesbian woman longs to dress like a man. But Hirschfeld showed that cross dressing, beside being often a symptom of homosexuality, is in no way identical with the same.

Homosexuality is a morbid sex state of gross somatic experiences. It emanates from the crude powerful sensation of sex. The individual's longings extend to somatic sensations. These desires often rapidly reach an obsessional state. Transvestism, on the other hand, is a sexoesthetic inversion of pure artistic imitation. Hence it occurs most in artists and in men of letters, i. e., in persons endowed with a highly developed artistic taste. Such persons are, as a rule, disgusted at the sight of the organs of the sex to which the individual by anatomical configuration belongs, while such sights offer to the homosexual individual additional charm and piquancy.

Transvestism tends to accent the esthetic sensibility. It is more in harmony with the basal esthetic demands. The patient harbors exalted ideas and is striving to secure artistic enjoyment in the appreciation of the beautiful. The attraction is in the mind and not in the sexual organs. Hence transvestism seldom celebrates orgies of lascivious and voluptuous practices, as often found in homosexuality. If sensuous caressing does take place, it is with a person of the other sex, for the physical part of the sex activity is perfectly normal. The anomaly consists solely in the passionate longing to belong to the cross sex or to dress in its attire.

The longings for cross dressing in our cases are best explained by the fact that the feminine strain, normally found in the male, exists here in a greatly exaggerated form. Every normal woman attributes an exaggerated value to clothes and, Narcissus-like, is more or less enamored with the female body. This is the psychological explanation for her love of histrionic spectacles. Almost two thirds of all theatregoers are certainly women; still so much deminude femininity is presented on the stage, presumably for the benefit of men and so few seminude men for the amusement of woman. Why do so many women run to the theatres to see the nudity of their own sex? Men do not care for the sight of nude men. The reason is that feminine nudity is presented on the stage, not only for the benefit of the few men, but most for the amusement of the great throng of women. The female body has a sexually stimulating effect upon woman, no less than upon the man (Colin Scott, *American Journal of Psychology*, 2, 1895). The pride of the female, says Weininger (*Sex and Character*, p. 201) is something quite peculiar to herself, something foreign even to the most handsome man, an obsession of her own body, a pleasure which displays itself even in the least handsome girl, by admiring herself in the mirror, by stroking herself and by playing with her own hair, but which comes to its full measure only in the effect that her body has on man. Woman desires to feel that she is admired physically. Woman, as a rule, regards her body as made for the stimulation of man's sensations. This complex emotion forms the initial stage of her own pleasure. The female body has therefore a greater exciting effect upon women than the male body has upon men. Female nudity produces a greater impression upon her than the male body ever does. Statues of female forms are more liable than those of male forms to have a stimulating effect upon woman.

The same emotions are evoked in woman at the sight of female clothes. Woman takes it for granted that her clothes, just as her body, have an erotic effect upon the male. Hence female clothes awaken in woman a complex emotion akin to the sight of the female body. For this reason clothes are to woman of the greatest importance. The desire for beautiful clothes was originally an irradiation of the sex instinct. The man adopted dress for the purpose of decoration, the woman for the purpose of attraction through covering. For the parts covered are rendered more conspicuous. It was not for esthetic reasons that clothes were adopted. The sculptor who knows most of beauty seldom covers up the naked body.

But although originally there was a close connection between clothes and the attraction of the sexes, still by heredity and social custom clothing has become a mere side current of the irradiation of the sexual. Clothes are nowadays used mainly as a means of beautifying. Ornamental clothing is not any longer a simple lure. It is a sign or symbol of a greater refinement of perception and delicacy of feeling. By the use of clothes the attention is directed rather to the personality than to the person. It is an attempt to display psychical rather than physical features. Even sex morality owes its origin to clothes. Coverings provoke the feeling of shame, and the use of clothes has become the centre expression of a specific human sex morality.

Just as with womankind, transvestism means striving to reach by clothes an effect of a more psychical nature. This impulse is more an imaginative radiation and far remote from the desire of a physical exhibition. The patient's experience of an increased comfort and well being by the gratification of the pronounced impulse of cross dressing, is more akin to the satisfaction of the artist, experienced by the successful expression of a certain symbolism.

This accounts for the phenomenon that the anomaly is found mostly in individuals possessing the so called artistic temperament. Such people will never commit any wrong when masquerading in the costume of the other sex. They are, as a rule, honorable and moral people who will never make themselves conspicuous by their mask nor become offensive in their behavior. Hence in the interest of their health and even of their life, for some commit suicide when prevented from cross dressing, such patients should be permitted to wear the clothes of the other sex in public without danger to the morals of their fellowmen. In several European countries such patients receive documentary permission from the police and are thus secure from arrest and molestation. Probably, however, it will be many years before we learn to look with indifference upon sexual aberrations.

12 West 123d Street.

PRIMARY PERNICIOUS ANEMIA.*

Observations on a Case.

By Walter G. Baetz, M. D.,
Canal Zone,
Physician, Ancon Hospital.

Among the number of diseases of unknown etiology, there is probably none more baffling, nor destructive at times, than so called idiopathic or primary pernicious anemia. When Addison first described this malady, it was thought to be, sooner or later, almost invariably fatal. During late years the profession has begun to realize that, though relapses are frequent, many a mild case and some severe ones end in recovery.

The publication of these observations was prompted by the history of the course of pernicious anemia, recently brought to our attention, in a prominent New Yorker. This gentleman was afflicted with the disease in its most severe form. The blood destruction became so pronounced that he lapsed into coma, in which state he remained for several days. Presumably, as a matter of last resort, it was decided to have recourse to transfusion of blood from the living subject. Preliminary precautions having been taken by examining the patient's and the donor's blood serologically (thereby eliminating the possibility of hemolysis and luetic infection), a notably clever surgeon was called to perform the transfusion. The result was nothing short of marvelous. The patient, who had been in coma for several days, awoke and has steadily gained to such an extent that he is today able to be again at work, in his most strenuous profession. The lesson which this case teaches seems to be, that it is unjustifiable to wait, in severe cases, for the natural trend toward recovery, provided a satisfactory donor can be selected by a skilled serologist and surgeon.

The following case was treated in only a medical way, because, at the time, little faith was held in blood transfusion by the ward physician. Nevertheless, the case seems to be sufficiently interesting for publication, in that it shows the possibility of even a spontaneous recovery, in a desperate case.

Case. A. W., Barbadian negro, aged twenty-nine years, was admitted to Ancon Hospital, December 24, 1910 (chart No. 90,131). He gave a history of having been sick for about a month with dropsy, slight fever, dyspnea, cough, and prostration. The positive physical findings were anasarca and marked anemia. The temperature, pulse, and respiration were normal. Five different uranalyses showed a specific gravity ranging from 1,004 to 1,025. Traces of albumin were found three times, but casts were always absent. A tentative diagnosis of chronic nephritis was made, which was not substantiated. The patient later requested discharge from the hospital, against the advice of his physician. March 5, 1911, he left in an improved condition, but with hemoglobin only thirty per cent.

March 22d, seventeen days later, he was readmitted (chart No. 94,423), giving a history of having been sick for the previous six months. He complained of swelling of face and legs, dyspnea, weakness, and frequent urination. The patient's mind was clear, but physically he seemed to be in extremis. An appalling anemia was apparent. The entire body was waterlogged. The heart was found to be enlarged, with loud, hemic murmurs at the base. Congestive enlargement of liver and spleen could not be demonstrated because of interfering anasarca. A stained blood film showed marked anemia, poikilocytosis, and a few macrocytes. Basophilic stippling and polychromatophilia were in evidence. Nucleated erythrocytes could not be found. The urine on this day had a specific gravity of 1,002 and neither casts nor albumin were present. Microscopic examination of the feces revealed the ova of Tricocephalus dispar.

Three days after admission a blood examination gave the following result: Erythrocytes, 560,000; hemoglobin estimation, fifteen per cent.; color index, 1.3; leucocytes, 4,200. A stained blood film showed extensive poikilocytosis, in addition to numerous microcytes and an occasional macrocyte. Nucleated erythrocytes were again absent. Physical examination on the ninth and sixteenth day after admission found the patient in an apathetic state, weaker than formerly, but minus the anasarca. On the ninth day, the blood destruction reached its maximum intensity, as follows: Erythrocytes, 456,000; hemoglobin estimated at twelve per cent; color index, 1.4; leucocytes, 3,800. From the sixteenth day on, the patient began to gain, and daily blood observations were made over a period of over two months (see accompanying chart). Blood plaques were usually scant and sometimes could not be found at all. Nucleated erythrocytes were also few in number, while microcytes and macrocytes, in bizarre shapes, abounded. Dr. Herbert C. Clark, pathologist of the board of health laboratory, kindly undertook the tedious work of making daily differential leucocyte counts. To enumerate them all would require more space than we are allotted. There was a persistent increase of the small lymphocytes at the expense of the polynuclear element; a fair example being: Polynuclear neutrophiles, fifty-nine per cent.; large mononuclears, two per cent.; small lymphocytes, thirty-seven per cent.; eosinophiles, two per cent.

Throughout the period of observation many uranalyses showed the urine to be limpid and colorless, having a specific gravity of from 1,000 to 1,007, with usually a very faint trace of albumin, but no casts. At times pus cells were found microscopically. Repeated careful microscopical examinations of the feces for the ova of anemia-producing parasites, especially Uncinaria and Bothriocephalus, were negative.

During the first three weeks in the hospital, the patient had an intermittent evening temperature of from 99° to 100° F. As the blood picture improved, his physical condition became better. At the end of a month he was able to sit up in a chair and eat full diet. Several days later he was strong enough to walk about.

As to the value of medical treatment in this case, little can be said. For ten days the patient was given iron in the form of Basham's mixture. The routine quinine treatment of the tropics, grains x, three times daily, was also adhered to for a like period. Then, as it became apparent that the anemia was of the primary type, arsenic in the form of Fowler's solution was administered in increasing doses. At the end of six weeks the patient was taking ten minims three times a day. This dose was then continued, in conjunction with Basham's mixture in one dram doses, three times daily, for about three weeks more. During these three weeks there was a decided slump in the former rapid improvement (see chart, days 40 to 61). The possibility of overtreatment with arsenic being considered, all medication was discontinued. This procedure was followed by immediate betterment, as judged by the blood findings.

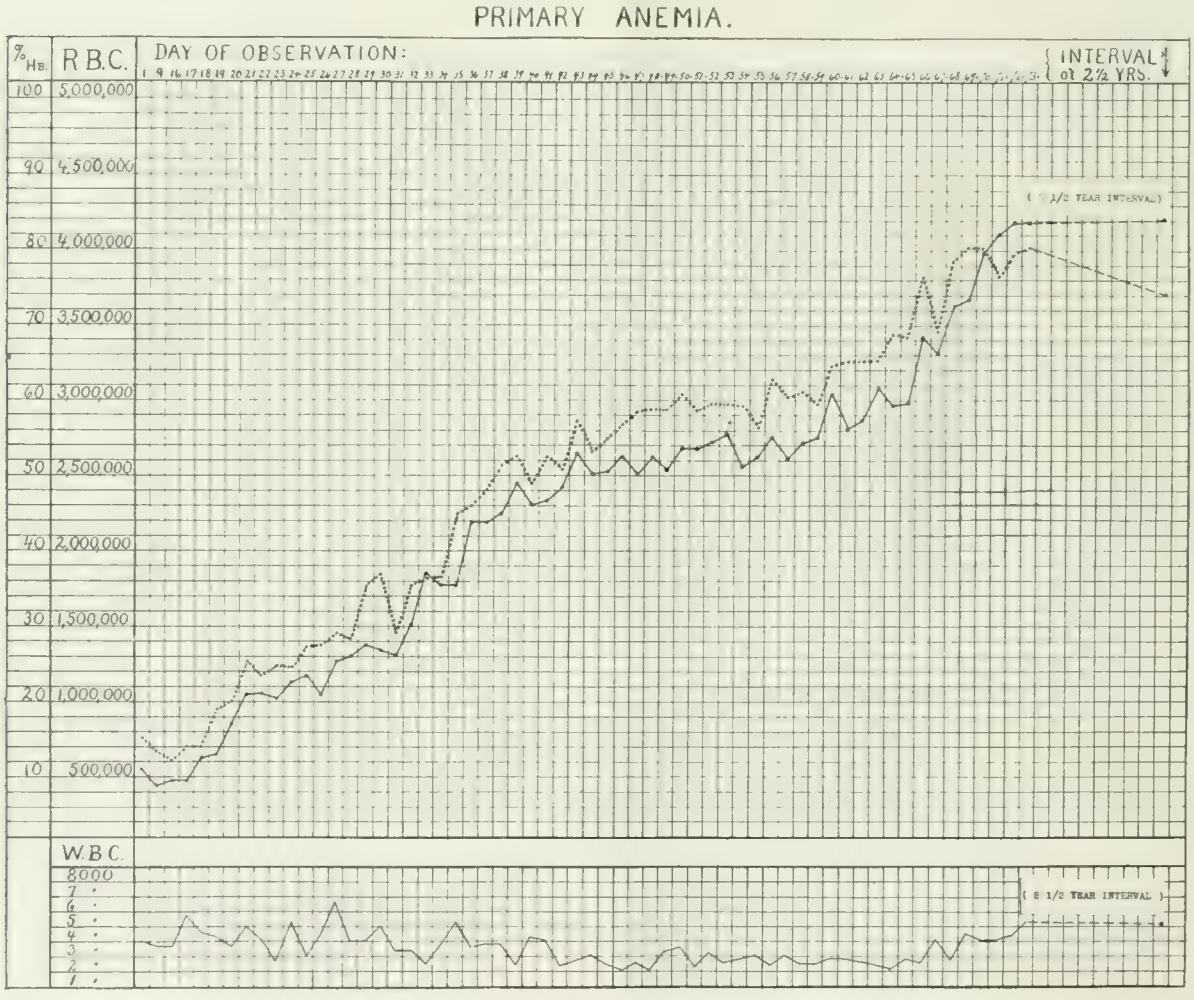
After two and one half months' hospital treatment, the patient was discharged, improved, with the following blood picture: Erythrocytes, 4,200,000; hemoglobin, eighty per cent.; color index, 0.95; leucocytes, 5,200. With the exception of this slight secondary anemia, he seemed to be in splendid health. In order to keep him under observation

*My thanks, for permission to publish, are due to the following gentlemen: Colonel John L. Phillips, acting chief sanitary officer, Lieutenant Colonel Charles F. Mason, superintendent of Ancon Hospital, and Dr. William E. Deeks, chief of the medical clinic.

for a longer period of time, he was given a position as hospital orderly. This position he filled satisfactorily for several months, after which he left the hospital service to work at the more strenuous trade of carpenter.

For the following two and a half years he was heard from only indirectly, as being at work and retaining his regained health. In November, 1913, he was on Flamenco Island, where he was working as carpenter in the construction of the canal fortifications. At our request he came to the hospital to have his blood examined again. He gave a history of continuous good health. His blood picture was as follows: Erythrocytes, 4,200,000, the same as on the day of discharge, two and a half years previously. The hemoglobin had fallen from eighty to seventy-four, bringing the color index down to 0.9. The former absolute leucocyte count of 5,200 remained unchanged. The differential leucocyte count was: Polyneuclear neutrophiles, forty-nine per cent; large mononeuclears, one per cent.; small lymphocytes, forty-five per cent.; eosinophiles, five per cent. Because of the fall in hemoglobin and the increase in eosinophiles, the very common infection with uncinaria was suspected as having taken place since the previous examination. Unfortunately the patient left before this theory could be proved or refuted.

Whether or not the term, primary pernicious anemia, includes more than one disease entity, can be no more than suspected. In glancing over the dictum of the different authorities on the diagnosis of this mysterious disease, and noting the frequent changes and differences in opinion, one can easily be led to that belief. Later authors are already attempting divisions into distinctive types.



Blood chart of a so called primary pernicious anemia, under observation for over two and a half years. The dotted line represents the percentage of hemoglobin. The upper continuous line shows the number or percentage of erythrocytes per c. mm. The lower continuous line gives the corresponding leucocyte count. An interval of two and a half years immediately precedes the last charted observation.

THE CARE OF CRIPPLED CHILDREN IN GERMANY.

By Douglas C. McMurtrie, M. D.,
New York.

The effort to provide properly for the care and education of crippled children has probably been more energetically exerted in Germany than in any other country in the world. The movement started early with the foundation of the Munich institution in 1832 and since that time the homes have grown

steadily in number and the standard of work has been raised higher and higher.

Furthermore, this movement in behalf of the cripples has been an intelligent and concerted one. For several years there has been a national society for cripple care, the Verein für Krüppelfürsorge. Since 1900 there has been published a year book on the subject, the *Jahrbuch der Krüppelfürsorge*, and since 1908 there has been issued an excellent quarterly journal dealing with the work, the *Zeitschrift für Krüppelfürsorge*. By these means the persons in Germany having in charge the care of cripples have been kept thoroughly informed regarding improvements in methods, and there has been free and constant interchange of experience. This feature of the German work should be especially suggestive to those in America engaged in the same field.

In the German medical and sociological literature the questions affecting the care of cripples have received extended attention. A glance at any bibliography of the subject will reveal the preponderance of material in the German language. There have also been articles by experts in the more popular magazines and periodicals. Publicity in these various forms has contributed to an understanding of the subject and has resulted in an increase of interest and support.

During recent years I have endeavored to study work for cripples in various parts of the world, with a view to making the foreign experience available for American physicians and others who were dealing with similar problems. From time to time these studies of various European countries have been published, but I have only just realized that as yet no mention was made of the German work—the most important of all. The reason for this was not paucity of material, but a surfeit. There were always so many data on hand that the task of getting them all up to date at any one time seemed utterly discouraging. It has, however, been possible to compile what seems approximately complete information regarding the German work during a recent year, 1910, and it is this which the present paper will set forth. It is hoped this personal reference to my own work will be pardoned, but it offers an interesting commentary on the situation with which we desire to deal.

At the end of 1910 there were in Germany fifty institutions for the care of cripples. The rate of progress was most satisfactory; the number having risen from thirty-nine two years previously. If the various institutions under a single management were counted separately and the new buildings in course of erection were also considered, there were fifty-six places in which care for cripples was available. Of the fifty different institutions, twenty-six were Protestant, five Roman Catholic, and nineteen undenominational. From 1908 to 1910 the accommodation capacity increased from 3,371 to 4,188, this latter figure comprising 2,329 males and 1,859 females. The smallest home had six and the largest five hundred beds, the average being one hundred. According to religious affiliation, the Protestant homes had 2,819 beds, the Roman Catholic 425, and the undenominational 944. The usual age of admission ranges between 14, 16, and 18 years. In twelve institutions, however, inmates as old as 36 years are received or there is no age restriction whatever.

Almost all the homes charge certain fees for care. This system, however, is designed to place part of the burden of support for the crippled child upon his or her local philanthropic or religious agencies. Thus a crippled child needing care is sent to any one of the homes and the fee paid by the public, charitable, or religious interests most intimately concerned. In the majority of instances, of course, the fee does not begin to cover the expense, the home meeting the difference through endowment or contributions. It is thought in Germany that this system of maintaining a partial local responsibility is of ultimate benefit to the cripple, especially upon returning home after the stay in the institution. The fee in the most inexpensive home is 120 marks a year; in the most expensive 1,095 marks. The average fee is 415 marks, or a little over a hundred dollars a year. There are 567 free beds and others partially so. At Angerburg all 400 beds are free. Other homes frequently decrease the fee or make no charge whatever in needy cases.

The directors of the institutions are clergymen in twenty-one cases, physicians in five, teachers in two, laymen in eleven, and sisters in six. Every home is provided with medical attendance. It will be noted how prominent is the religious element in the work. An important factor in this is the Inner Mission, a Lutheran organization, which operates several of the institutions, notably the Oberlinhaus at Nowawes, and the Samariterhaus at Cracau, near Magdeburg.

In order to gain an accurate idea of the status of educational work in the homes, it is necessary to except several of them. Four institutions are restricted to orthopedic treatment and consultation, four only have patients who are above school age and who receive advanced training, one institution which receives children only up to the age of ten has no school, and in two new homes the classes were in process of formation at the time of this enumeration. Of the remaining thirty-nine institutions, thirty-five have schools for mentally normal crippled children and fourteen have classes for the mentally defective as well. There are twelve kindergarten (often designated in Germany as Fröbel classes) and nine advanced classes.

As regards industrial training, the occupations taught are numerous. Boys are taught basket making in nineteen institutions, tailoring in eighteen, shoemaking in sixteen, brush making and chair caning in thirteen, cabinet making and bookkeeping and stenography in ten, bookbinding in seven, bandage making in six, mat weaving and key making in four, house painting, gardening, lithography, machine embroidery, the making of orthopedic apparatus, carving, wood sawing, and fret sawing in three; the making of pasteboard boxes and paper bags, agriculture, and sail making in two; drawing of architectural plans, turning, mat making, glaziers' work, the making of wooden shoes, tinsmithing, instrument making, knitting, carving, painting, mechanics, natural wood work, net making, sewing, photography, the making of portfolios, saddlery, and dentistry in one each.

The girls are taught housekeeping in twelve institutions, dressmaking and plain sewing in ten, machine knitting in nine, embroidery in eight, hand work in five, bookkeeping and stenography in four, knitting in three; weaving, cooking, and typewriting in two; basket weaving, art embroidery, Röntgen ray work, photography, machine knitting, the instruction of small children, lace work, chair caning, and the making of artificial flowers in one each.

Girls and boys receive instruction alike in all subjects in four institutions, in bookkeeping and stenography in fourteen institutions, in chair caning in fourteen, machine knitting in twelve, and typewriting in three.

To summarize, boys are taught forty-nine occupations and girls twenty-six.

One defect of the German work is the lack of special facilities for the education and care of crippled children by the nonresident system, so successfully operated in England and the United States. It is expected, however, that some efforts in this line will be made in the near future.

The greatest possible aid to the development of the work in Germany was derived from a census of all the crippled children in the Empire in 1906. Individual data regarding each cripple under sixteen years of age were recorded and tabulated. The results and findings have been excellently presented by Biesalski.[1] In all there were found 75,183 crippled children *under* the age of sixteen. In relation to the population this made an average of 14.8 crippled children under fifteen years of age to each 10,000 of population of all ages. Calculated on the basis of proportion to the total population of children within a similar age group, it is found that there were among each 10,000 children 35.73 crippled children. That is among the juvenile population 0.35, or nearly four tenths of one per cent. were crippled.

As the definition of cripple may vary considerably, we are fortunate in the fact that the compilers of this census made comparative classifications. A general division was made under two heads: Those not needing home care (*nicht heimbedürftig*) designated as N, and those needing home care (*heimbedürftig*) designated as H. The N classification was then further subdivided as Nb and Nk, and the H classification as Ht, Hg, and Hu. These classes were defined as follows:

N Classification.

Nb. Children having orthopedic defect. Needing treatment but not resident care.

Nk. Cripples. Provided for or supporting themselves. Needing neither treatment nor resident care.

H. Classification.

Ht. Cripples needing treatment and industrial education.

Hg. Incurable cripples, incapacitated for industrial education, but needing care in a home.

Hu. Incurable cripples requiring prolonged care and provision.

On this basis of classification the tabulation of statistics gives the following result:

In connection with the number of crippled children needing home care, 42,240, it was pointed out that there were available at the time (1906) in German institutions but 3,125 beds. In the case of 9,388 an active desire for admission to an institution had been expressed. The accommodation has since been considerably increased.

The sex distribution was as follows: Male, 39,303; female, 35,880; total, 75,183. As will be seen, the distribution was a very even one. In every 1,000 crippled children there were 522.8 boys and 477.2 girls.

There has been much difference of opinion regarding the mentality of crippled children. It is

GERMANY

Age groups	N		H				N–H
	Nb	Nk	Ht	Hg	Hu	Hg–Hu	Total
[illegible]	4,457	1,863	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	3.9	2.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	221.8	196.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

not possible here to discuss this matter in detail, but the figures on mentality and character are of considerable interest.

In every 1,000 the distribution was as follows, and the percentage can also be deduced:

	In every 1,000	Percentage
Of sound mind	885.9	88.6
Mentally defective	[illegible]	8.5
[illegible]	[illegible]	2.9

INSTITUTIONS.

We may now proceed to the detailed description of the status of the various German institutions at the end of the year 1910. These individual records will give an accurate idea of the scope and character of the German work for cripples.

Wohltätigkeits-Anstalt Bethesda. Angerburg, East Prussia. Founded 1897. Protestant. Accommodation, 180 boy and 180 girl cripples, ranging in age from six months to fourteen years. All care is free, and the incurable are provided for. The staff consists of one superintendent, forty-five sisters, twenty servants. In the school, which is attached, there are five classes with an equal number of teachers and two Fröbel schools with two teachers. A gymnasium is provided. The boys are given industrial training in tailoring, key making, cabinet work, shoemaking, basket weaving, printing, and bookbinding. The girls are taught sewing and housework. The workshop, added in 1909, accommodates forty, between the ages of fourteen and thirty.

Diaspora Anstalten (Krüppelheim). Bischofswerder, West Prussia. Protestant management. Cripples received without regard to creed. Cripple department established 1890. Accommodates one hundred crippled children of all ages, having in 1910 thirty-five boys and eighteen girls. Yearly charge, 240 marks, often reduced. No free places provided by regulations, but several afforded by annual collections in churches. Staff consists

[1] Biesalski, Konrad, M.D. [illegible] für die [illegible] Fürsorge [illegible] Krüppel. Leipzig, 1911.

of the director, three deaconesses, and four house servants. One class is maintained in the school, and facilities for advanced training are provided. The boys are taught chair caning, mat weaving, tailoring, and basket making; and the girls dressmaking, embroidery, knitting, and housework.

Berlin-Brandenburg Krüppelheil- und Erziehungsanstalt, Berlin. Undenominational; founded 1906. It accommodates one hundred and thirty from infancy to sixteen years of age, at a daily expense of two and a half marks for clinical cases, others paying 500 marks annually. There are five free patients. Beside the director, there are twenty-seven sisters and seventeen servants. The institute has three classes, with a master, two teachers, one kindergarten, one class for abnormal pupils, and three advanced classes. Separate religious instruction is given Protestant, Roman Catholic, and Jewish inmates. The boys are taught shoemaking, tailoring, basket weaving, bandage making, making of orthopedic apparatus, office work, dentistry, and machine knitting; the girls dressmaking, housework, weaving, plain sewing, art embroidery, photography, Röntgen work, and commercial operations.

MENTALITY AND CHARACTER.

Classification	N		H				H	N H
	No	Nk	No+Nk	Ht	Hg	Hu	Ht+Hg+Hu	Total
Of sound mind	17,729	14,510	32,239	30,[illegible]	5,715	145	35,959	[illegible]
Mentally defective	395	204	599	4,446	366	697	5,882	6,481
Tendency to viciousness and crime	58	38	96	348	45	15	408	[illegible]

Krüppel-Pflegeanstalten des Oberlinhauses, Nowawes, Brandenburg, Prussia. Protestant; founded 1886. It accommodates 150 boy and 120 girl cripples between the ages of infancy and twenty, at an annual fee of 720 marks or 600 marks for those connected with relief unions. Beside the director, there are a housemaster, fifteen sisters, two nurses, and thirty-two servants. The school, which has three classes of two divisions each, provision for advanced training and for training the less talented, besides including a gymnasium, is directed by three male teachers and one female teacher. The boys are taught tailoring, shoemaking, brush making, tinsmithing, chair caning, bandage making, lithography, cabinet work, and machine knitting; the girls learn dressmaking, lace making, embroidery, and housework, and are also trained to become teachers of small children.

Anstalt Bethanien (institution for feebleminded and epileptics, with a division for the cripple). Fürstenwalde-on-the-Spree, Brandenburg, Prussia. Lutheran; founded 1892. It accommodates thirty in all of any age, at a charge of 400 marks, which is often lowered. It provides for five without charge. Beside the director, there are sixteen nurses and four servants. The school for the abnormal has four classes, and Fröbel, and advanced training are provided. The boys are taught chair caning, shoemaking, and machine knitting.

Orthopädische Abteilung und Krüppelheim des Paul-Gerhardt-Stifts, Berlin. Protestant deaconess institution; founded in 1908. It has accommodation for ten children of each sex up to the age of fourteen; daily expense for the first class, ten marks; for the second, six; and for the third, three The staff, beside the director, is composed of four sisters and one servant. There are three classes, and Fröbel work is also taught.

Maria-Victoria-Krüppelheim. Oranienburg bei Berlin. Roman Catholic. No statistics are available.

Krüppelheim für Knaben, Alt-Colziglow, District of Rummelsburg, Pomerania. Protestant; founded 1899. Accommodations for thirty boys, without restrictions as to age, at an annual fee of 300 marks, which is often decreased. The staff consists of the director, two deaconesses, and three servants. Twenty-four teachers conduct whatever instruction may be requisite. The boys are taught basket weaving, chair caning, mat weaving, cabinet work, and tailoring.

Pommersches Krüppelheim Bethesda im Johanniter Ordenshause im Lüllchow, near Stettin, Pomerania. Protestant; members of other communions also admitted; founded in 1900. It accommodates twenty-four boys and thirty-six girls to the age of fourteen, at an annual fee of 450 marks, which is generally decreased. It provides for one without charge, and for another at two thirds of the annual fee. The institution is conducted by the Pomeranian Society for the Care of the Crippled. The school has three divisions and a class for the abnormal. The boys are taught brush making, chair caning, and carving; the girls machine knitting, chair caning, knitting, dressmaking, cooking, and housework.

Krüppelheim Wolfshagen, 10 Czayçze, Bromberg, Posen. Protestant; founded January 1, 1909. It has accommodations for twelve of each sex, from one to about twenty years of age. The fees are 400 marks annually. The staff consists of the directress, one nurse, three sisters, and four servants. The school has only one class. The boys are taught basket weaving (plans were being made for shoemaking and tailoring) and the girls knitting, weaving, machine knitting, and like occupations.

Schlesisches Krüppelheim, Rothenburg O.-L., Silesia. Protestant; founded 1903. It has accommodations for sixty boys and forty girls under fourteen years of age, at an annual fee of between 300 and 420 marks, from which a rebate, or even entire remission, is often made. The staff consists of the director, seven deaconesses, and eight servants. Instruction is given in two classes by one teacher and one deaconess. The boys are taught bookbinding, tailoring, shoemaking, and basket weaving; the girls plain sewing, dressmaking, machine knitting, and housework.

Krüppelheim Bethesda, Marklissa, O.-L., Silesia. Protestant; founded 1900. It accommodates fifty male and sixty female cripples up to the age of thirty, at a monthly fee of ten to twenty marks, which is generally remitted. The staff consists of the director, six nurses, and six servants. Instruction is given in two classes. The boys are taught brush making and the girls manual work.

Krüppelheim zum Heiligen Geist, Beuthen O.-L., Silesia. Roman Catholic; founded 1908. It has accommodations for sixty male and forty female cripples under the age of fifteen, at a monthly cost of twelve marks, reduced in exceptional cases. The work is carried on by sisters from the home at Trebnitz. The boys are taught basket making and brush making, and the girls hand work.

Krüppelschule Ihrer Durchlaucht der Fürstin von Pless, Waldenburg, Silesia. Undenominational; founded in 1906. The children, about sixty altogether, ranging from six to sixteen years of age, receive instruction only. This is free. The boys are taught basket weaving and brush making, and the girls manual work.

Pfeiffersche Stiftungen, Cracau, near Magdeburg, Saxony. Protestant; founded in 1889. This institution accommodates 240 males and 260 females, without restrictions as to age, at a monthly charge of thirty-six marks. It also provides for five without charge. In addition to the director, the staff consists of forty-six nurses and forty-five servants. Instruction is given in three classes and one for abnormal pupils; provision is also made for Fröbel and advanced training. The teaching force numbers four. The boys are taught tailoring, shoemaking, cabinet work, glazier's work, painting, basket weaving, chair caning, mat weaving, bandage making, office work, and typewriting; the girls learn sewing, embroidery, knitting, and housework.

Krüppelheim des Krüppel-Heil und Bildungsvereins für den Regierungs-Bezirk Merseburg, Halle, Saxony. Undenominational; founded in 1910. Accommodations are provided for forty in all up to the age of fifteen, at an annual fee of 600 marks. The school and occupational training were inaugurated in 1911.

Krüppelpflegeanstalt Annastift, Hannover-Kirchrode. Protestant; founded 1892. This accommodates forty-six boys and sixty-four girls, under the age of seventeen, at an annual charge of 450 marks, which includes clothing, though an additional fee of seventy-five marks is charged in some cases for the latter purpose. Beside the director, the staff consists of six deaconesses, seven assistants, and nine servants. Instruction is given in three classes by the resident clergyman and six female teachers, among whom are a kindergarten teacher, drawing teacher, and teacher of manual training. Fröbel and advanced education are also given. The boys are taught wood working, pasteboard work, knitting, carpentry, and chip carving; the girls embroidery, knitting, plain sewing, dressmaking, and domestic work.

Connected with the Annastift is the Krüppellehrlingsheim, Wilhelm - Auguste - Victoria - Stift; founded in 1908. This accommodates between fifty and sixty male cripples up to seventeen years of age. Beside the director, who is also the director of the Annastift, the staff consists of the housefather, three male nurses, and five servants. Training is given in cabinet making, the making of orthopedic appliances and bandages, basket weaving, chair caning, brush making, shoemaking, bookbinding, and carving.

Krüppelheim Alton-Eichen, Stellingen, near Altona, Schleswig-Holstein. Lutheran; founded in 1898. It has accommodations for one hundred patients, boys being admitted between the ages of three and fourteen, and girls between the ages of three and eighteen. The annual charge is 500 marks and an additional twenty-five marks yearly for clothing. Beside the director, the staff consists of six deaconesses, two assistants, the teaching force, and eight servants. The school has three classes and an auxiliary class, and provision is made for advanced training. The teaching force is composed of one clergyman, three female teachers, and one male teacher. The boys are taught cabinet making, tailoring, shoemaking, bookbinding, brush making, basket weaving, chair caning, making wooden shoes, and like occupations. The girls are instructed in dressmaking, embroidery, plain sewing, mending, and housework.

Johanna-Helenen-Heim, Volmarstein, Westphalia. Undenominational; founded in 1904. This institution accommodates 140 males and sixty females, without limitations as to age, at a daily charge of three and one half marks in the first class, one mark, thirty pfennigs in the second class below fourteen, and one and one half marks to one mark, eighty pfennigs above fourteen years. The staff consists of the director, ten deaconesses, and thirty servants. The school, to which a gymnasium is attached, has four classes, a class for abnormal cripples, advanced training in four divisions, and Fröbel work. The boys are instructed in gardening, agriculture, brush making, basket weaving, mat weaving, chair caning, tailoring, shoemaking, cabinet making, bandage making, office work, and house painting, and the girls in embroidery, sewing, cooking, and housework.

Orthopädische Heilanstalt, Hüfferstiftung, Münster, Westphalia. Undenominational; founded in 1869. The institution accommodates seventy-six males and twenty-four females, without limitations as to age, at a weekly fee of seven and one half marks for the first class, five for the second, and three for children under the age of ten. There is provision for five patients without charge. The staff, in addition to the director, consists of twenty-five nurses and ten servants.

Josefs-Krüppelheim. Bigge-am-Ruhr, Westphalia. Roman Catholic; founded in 1904. It has accommodations for 170 males and thirty females, without restrictions as to age, at an annual fee of 365 marks. In addition to the director, the staff consists of ten nurses and six servants. Advanced training is provided in two divisions. Instruction is given to the boys in printing, bookbinding, lithography, photography, bookkeeping, tailoring, shoemaking, cabinet work, turning, sculpture, basket weaving, key making, and gardening, and to the girls in housework, cooking, embroidery, and sewing.

Vincenz-Krüppelheim, Aachen-Siegel, Rhine District. Roman Catholic; founded in 1905. It accommodates eighty boys and forty-five girls between the ages of two and fourteen, at an annual fee of 450 marks. In addition to the director, the staff consists of eight nurses and eight servants. Instruction is given in two classes and in one class for the abnormal. Fröbel work is provided.

Westdeutsche Heil-Bildungs und Werkstätte für

Verkrüppelte Bethesda, Bad Kreutznach, Rhine District. Protestant; founded in 1893. It has accommodations for eighty boys and forty girls up to the age of twenty, the daily charge being one and one quarter mark for children up to fourteen years, one and one half mark up to eighteen years, and one mark, eighty pfennigs above that age; there is one free pupil. Beside the two directors, the staff consists of eight deaconesses, two deacons, and the servants. There are three classes and Fröbel work is provided. The boys are taught shoemaking, cabinet work, house painting, key making, brush making, mat weaving, basket weaving, chair caning, agriculture, gardening, architectural drawing, and writing; and the girls plain sewing, embroidery, stenography, and typewriting.

Kinderheim des Vereins für Krüppelfürsorge, Wiesbaden, Hesse-Nassau. Undenominational; founded in 1910. This has accommodations for ten of each sex below the age of seventeen, at a daily charge of two and one half marks. Provision is made for one free patient. An institution for between eighty and one hundred cripples is in course of erection. The staff consists of a directress, two sisters, and four servants. Instruction is given in two classes.

Krüppelheim der barmherzigen Brüder, Fulda, Hesse-Nassau. Roman Catholic; founded in 1910. The building is in course of erection.

Hessiches Krüppelheim, Nieder-Ramstadt, near Darmstadt, Hesse-Nassau. Protestant; founded in 1910. This has accommodations for five of each sex, all of whom are of the school age. The annual fee is 420 marks. Beside the directors, the staff consists of one female nurse and one servant, the former instructing the children. In view of the age of the children, no occupational training is given.

Hephata, near Treysa, district of Kassel, Hesse-Nassau. Protestant; founded in 1902. This institution has accommodations for sixty in all, between the ages of five and seventeen, at a charge of 450 marks, which is often decreased. The staff consists of the director, deacons, deaconesses, and servants. Five classes are conducted by eight female teachers and one deaconess. The boys are taught brush making, basketry, sail making, tailoring, and office work.

Stiftung Dr. Dormagen, Cologne, Rhine District. Undenominational; founded in 1909. Provision will here be made for about fifty inmates of each sex, at a fee to be determined later. There are to be no restrictions as to age, and a special division is to be made for the older patients.

Königliche bayerische Zentralanstalt für Erziehung und Bildung krüppelhafter Kinder, Munich, Bavaria. Undenominational; founded in 1832. There are accommodations for forty-seven boys and forty-one girls between the ages of eleven and fourteen. Provision is made for nine patients without charge. In addition to the director, there are two male overseers and one female overseer, and eight servants. Instruction is given in three classes, and advanced training is provided. The boys are taught writing, stenography, bookbinding, tailoring, and shoemaking; the girls are instructed in sewing, knitting, and dressmaking.

Bayerische Genossenschaft des Johanniter-Ordens München, Munich, Bavaria. Protestant; founded in 1903. This institution offers twenty beds for cripples in the Krankenhaus vom Roten Kreuz. Patients must have completed their fourteenth year, and treatment is almost always free.

Krüppelheim von Prof. J. Riedinger, Würzburg, Bavaria. Undenominational; founded in 1910. Provision is made in this institution, which is at present private, although enjoying a government grant, for twenty inmates of each sex (who must be from lower Franconia) below the age of twenty at a daily fee of two and one half marks. There is as yet no school, but the boys are taught orthopedic mechanics, key making, saddlery, tailoring, and shoemaking.

Samariter-Verein für chirurgisch-orthopädische Hilfe, Munich, Bavaria. Founded in 1885. This institution seeks to provide bandages and artificial limbs to sufferers without regard to age, sex, or creed; those entirely destitute are treated free.

Beratungsstelle des Vereins für Krüppelfürsorge, Nürnberg, Bavaria. Undenominational; founded in 1909. Only transient patients are treated, no fees being charged.

Gustav Werner-Stiftung zum Bruderhaus, Reutlingen, Württemberg, Protestant; founded in 1840. This has accommodations for twenty-five in all above the age of fourteen, and has a special department for cripples, which was opened in 1880. There is a fixed charge of one and one quarter mark daily, with allowance for work done. Because of the age of the inmates there is no elementary instruction, although provision is made for advanced training, and the making of cardboard boxes and of paper bags.

Orthopädische Armenheilanstalt Paulinenhilfe, Stuttgart, Württemberg. Undenominational; founded in 1845. This accommodates about one hundred altogether without discrimination as to age, at a daily charge of from eighty pfennigs to one and one half mark, these charges being frequently decreased. In addition to the director, the staff numbers four deaconesses and fourteen servants. The classes, which are conducted by one teacher, are divided as occasion requires, and a gymnasium is attached. No trades are taught.

A. H. Wernersche Kinderheilanstalten, Ludwigsburg, Württemberg. This provides accomodations for one hundred of each sex between the ages of one and sixteen, at a daily cost of between fifty and eighty pfennigs. Twelve are provided for without charge. In addition to the directress, the staff consists of three superior sisters, seven nurses, and thirteen servants. Instruction is provided in an elementary school of one class, and Fröbel work and advanced training are also given. The teachers number three, and the boys are taught tailoring and basket weaving; the girls all branches of women's work. Besides a salt water bath at Jagstfeld and a hot bath at Herrnhilfe (in Wildbad), the foundation has three branches: The Maria-Martha-Stift, the Wilhelm-Stift, and the Charlotten-Stift.

Verein für kunstliche Glieder, Stuttgart, Württemberg. Undenominational; founded in 1868. Only temporary patients are admitted.

Samariterstiftung, Reichenberg, Backnang, Württemberg. Protestant; founded in 1889. This institution accommodates sixty males between the ages of fourteen and thirty-six, at an annual charge of 250 marks and an entrance fee of forty marks; the majority of the inmates are incurable. The staff consists of the directress, three sisters, and five servants. On account of the age of the inmates there is no school, but they are taught basket weaving, brush making, and agricultural pursuits. These data are for 1908, no more recent figures being available.

Samariterhaus, Obersontheim, Gaildorf, Württemberg. Protestant; founded in 1886. This accommodates one hundred and twenty women between the ages of fourteen and thirty-six, at an annual charge of 250 marks and an entrance fee of forty marks; most patients are incurable. The staff consists of the directress, and four sisters. Because of the age of the inmates, there are no school classes, but they are taught knitting, sewing, and housework. These data are for 1908, no more recent figures being available.

Sachsisches Krüppelheim, Königin-Carola-Stiftung, Dresden-Trachtenberge, Saxony. Lutheran; founded in 1896. There are accommodations for twenty-four boys and twenty girls between the ages of five and sixteen, at an annual fee of 400 marks. It also provides for ten without charge. Beside the directress, there are one sister and three servants. The single class is conducted by three teachers and a teacher of manual training. The boys are taught bookbinding, pasteboard work, chair caning, wood working, fret sawing, and tailor's mending; and the girls are instructed in sewing, machine embroidery, mending, and the making of artificial flowers.

Krüppelheim, Zwickau-Marienthal, Saxony. Undenominational; founded in 1904. This institution accommodates one hundred and twenty-five under the age of eighteen, at an annual fee of 500 marks, which is often lessened considerably. The staff includes eight deaconesses, six nurses, and eleven servants. Instruction is given in three classes, advanced education is given so far as may be necessary, and courses are available in manual training. The boys are taught shoemaking, tailoring, basketry, brush making, chair caning, and the making of bandages; and the girls all branches of women's work.

Leipziger Heim für gebrechliche Kinder. Leipzig-Eutritsch, Saxony. Undenominational; founded in 1909. This accommodates thirty-five in all up to the age of sixteen, at a daily fee of two marks. There is also provision for one without fee. The staff consists of the director, four nurses, and four servants. Instruction is given in two classes of two divisions each, and there is a class for abnormal patients. Fröbel work is taught as well as manual training. It is proposed to teach shoemaking, tailoring, bookbinding, and cabinet work.

Verein Krüppelhilfe, Saxony. Undenominational; founded in 1909. This institution accommodates three of each sex, without restrictions as to age, at a daily fee of one and one half marks. Those who are destitute are admitted free. Beside the director, there are two nurses and one servant. It is intended to give instruction in pasteboard work and the making of paper boxes.

Kinderheim des Siechenhauses Bethesda, Niederlössnitz, Saxony. Protestant; founded in 1882. This accommodates thirty of each sex between the ages of one and fourteen, the monthly fees being twenty-four marks up to ten years of age, and thirty marks up to fourteen. The staff consists of the director, seven nurses, and six servants. Instruction is given in two classes and an auxiliary class. Fröbel work is taught while provision is also made for advanced training. The boys are taught painting, basketry, chair caning, shoemaking, chip carving, and fret sewing; and the girls are instructed in plain sewing, machine sewing, machine knitting, basket weaving, and hand knitting.

Badener Krüppel-Heil und Erziehungsanstalt, Heidelberg, Baden. Undenominational; founded in 1909. This institution accommodates twenty boys and thirty girls below the age of seventeen, at an annual fee of 430 marks. In addition to the director and the inspectress, the staff consists of two sisters and two servants. Instruction is given in three classes, and there is a class for abnormal patients. Advanced training is received in the municipal schools. The boys are taught brush making (for which the institution possesses its own shop), tailoring, shoemaking, commercial training, basket weaving, and mechanical trades; and the girls are instructed in dressmaking.

Krüppelheim Luisenhof, Gresgau, Zell im Wiesenthale, Baden. Protestant; founded in 1902. This institution, which admits both crippled and convalescent children, has accommodations for about twenty boys and eighteen girls up to the age of sixteen, at an annual fee of 360 marks. The staff consists of the director, housefather, and housemother, one nurse, and two servants. Instruction is given by one deacon as circumstances require, some of the children attending the local school. The boys are taught sail making, basket weaving, sewing, and penmanship, while the girls are instructed in sewing, knitting, embroidery, and housework.

Landeskrüppelanstalt Elisabethheim, Rostock, Mecklenburg-Schwerin. Protestant; founded in 1899. It has accommodations for twenty-five of each sex between the ages of five and fourteen, at an annual charge of 300 marks, with a fee of forty marks for clothing. Beside the director, the staff consists of four nurses and three servants. Instruction is given in several divisions. The boys are taught brush making, and the girls dressmaking.

Herzogin-Elizabeth-Heim, Landeskrüppel-Heil- und Pflegeanstalt. Undenominational; founded in 1908. It has accommodations for five of each sex between the ages of one and fourteen, at a minimum fee of one and three quarters marks daily. Beside the director, the staff consists of two nurses and a housekeeper. In addition to the school instruction by one female teacher, a Fröbel teacher is also employed.

Marienstift, Arnstadt, Schwarzburg-Sonderhausen. Protestant, founded in 1905. This institution, which is designed for treating, nursing, and educat-

ing cripples who are capable of making progress, accommodates thirty-three of each sex up to the age of twenty, at an annual fee of 460 marks; there is one free place for the child of a miner. Beside the director, the staff consists of two sisters, two deacons, three female assistants, and one servant. The inmates, except those of only slight capacities, attend the public school. Within the institution there is one class with several divisions, and Fröbel work and advanced training are provided. The boys are taught shoemaking, tailoring, brush making, chair caning, and machine knitting; and the girls are instructed in machine knitting and housework.

Anna-Luisen-Stift, Blankenburg, Schwarzburg-Rudolstadt. Protestant, founded in 1901. Accommodation is provided for fourteen boys and eighteen girls below the age of sixteen (older women patients often being received), at an annual fee of 300 marks. There is provision for one free patient. Besides the director, the staff consists of one deaconess, three assistants, and one servant. Instruction is given three times a week by one of the teachers in the public school, and for an hour daily by the deaconess. Because of the physical condition of the inmates no trades can be taught.

Verein Waldeck'sche Krüppelhilfe, Waldeck, Schwarzburg-Rudolstaft. This newly founded institution was building a home for thirty cripples and thirty idiot children, to be opened October 1, 1911.

298 Metropolitan Tower.

THE EYES OF THE NEUROTIC.*

By C. W. Le Fever,
Philadelphia.

Perhaps no woman enters the physician's office who proves more unsatisfactory, both to doctor and herself, than the neurotic. After a more or less prolonged effort to relieve the varied symptoms of which she complains she is in turn conscientiously passed along from one specialist to another, and sooner or later is sure to pass before the oculist.

It is my purpose to show in a nontechnical way the manner in which abnormal eyes may affect the nervous system. Before attempting to state what the oculist finds and what relief he may hope to offer, let us consider briefly to what class of patients the term neurotic may be justly applied. I refer to that class of nervous patients in whom there is no discoverable pathological lesion or condition and no recognizable form of insanity, and who are neither neurasthenic nor hysterical.

The chief characteristic is the great variety and frequent change of unrelated symptoms of which the patients complain. They seldom look sick. They are usually well nourished and solid in appearance. In fact, I believe the neurotic state is more often seen in persons above the average weight than in those below it. It is not within my province, however, to enter into further detail of symptoms.

The factors which may enter into the production of a neurotic are almost as varied as the symptoms of which they complain. I use the word "production" advisedly, because I do not believe a neurotic is ever born so. The condition is purely functional and consists of abnormal manifestations of sensations either felt or imagined. The patient may inherit a hypersensitive sensorium, and this is probably true in the majority of cases. It may also be seen in patients whose sensory nervous systems are by nature perfectly stable. In any case there are one or more agencies which have acted as exciting causes, and it is the business of the physician to leave nothing undone to discover and, if possible, to remove or alleviate such causes.

There are few persons endowed by Nature with such stolid nervous systems that they might not be developed into neurotics if an irritating factor was sufficiently severe and prolonged. On the other hand, there are those in whom so little is required that it is almost, if not entirely, impossible for them to pass through life without becoming neurotic. These constitute the great majority of cases and in such a permanent cure can scarcely be hoped for, because there are many sufficient causes lying in wait for them, and as fast as they are relieved of one, another presents itself. Once a patient has become neurotic, even though there seem to be a complete cure—a complete restoration of normal sensations and responses—aftercauses, of much less significance to a normal person, may prove sufficient to reestablish the chaotic state.

As to primary causes, it may be that the child is overtaxed in school; or it may be that there is some faulty physiological process which is taxing the patient's nervous energy yet escapes discovery. It is a generally recognized fact that abnormal sexual conditions and functions contribute largely to all forms of functional nervous disease. In these modern days, we are ready to believe that the disordered function or its absence in some of the internal secretory glands may be a factor in producing the neurotic, as they are thought to be in so many other morbid processes. I might go on if it were proper for me to do so, and enumerate at great length the many factors which may help to produce the neurotic, but my subject is the eyes of the neurotic.

THE EYE MUSCLES.

The movements of the eyes through the field of fixation are controlled by twelve ribbonlike muscles —six in either orbit. To say these movements and adjustments are complex, is only to hint at the facts. So marvelously intricate and complicated they are that after three quarters of a century's progress in the most advanced of all specialties, they still remain but feebly understood. The impulses which control them come down over the third, fourth, and sixth nerves and their relative action is presided over by the *fusion sense*, the *coordination centre* and the *accommodation-convergence centre*.

The fusion sense is that instinct by which we recognize diplopia, and is peculiar to man alone. None of the lower animals have simultaneous impulses sent from both eyes to the same centre as they are in man. This makes it necessary that the images

*Read before the Mount Sinai Hospital Clinical Association.

overlie exactly corresponding points on the two retinas in order that the subject may not see double. These are called *identical points.* The identical points on one upper retina correspond to those on the other upper retina and the two lower retinas have corresponding points; but the right temporal retina has its corresponding points on the left nasal retina and the *right nasal* and *left temporal* retinas have corresponding points. This makes the upper inner retina have identical points on the upper outer retina of the fellow eye and the lower outer retina of one eye have corresponding points on the lower inner retina of its fellow.

The size of the retinal image is so small that for small objects it would be scarcely visible to the naked eye if exposed. Ordinary newspaper print is about one mm. or one twenty-fifth of an inch in size, but the image of the retina is only 0.04 mm. or 1/625 of an inch. Now, we must not only see the print, but we must differentiate one letter from another and if the images on the two retinas did not occupy exactly identical points, a displacement of a small fraction of their diameter would render the print unreadable. Not only is this exactness necessary, but it must be done so quickly that from fifty to 100 images a second may follow each other in the macula and be recognized, to permit ordinary newspaper reading.

The placing of the two retinas to receive the images with this exactness and at this rapid rate is accomplished by six muscles of each eye. It must be obvious to all that imperfections sufficient to render the process difficult may be of frequent occurrence, and their existence of great significance to the patient's nervous system. My answer is that they are of frequent occurrence and their presence, nature, and management require the most skillful study and treatment. Following are some of the causes of imperfect muscle action:

1. During fetal life these muscles are inserted into the sclera not far from the cornea and no two of them the same distance back when normal. These insertions are exactly such as will give perfect balance and control. A malinsertion of one mm. is sufficient to disturb the balance, and such false insertions are of frequent occurrence. A muscle falsely inserted must be constantly overstimulated or understimulated and the patient has a constant tax on the nervous centres to keep the images properly placed on the two retinas.

2. If the orbits are too shallow or their axes are too far apart or unsymmetrical, the muscles do not develop properly or receive a greater burden to form the convergence angle when fixing at near points, as in reading, sewing, or other near work.

3. From some intrauterine cause, one or more of the muscles may be imperfectly developed and may be abnormally weak. This, however, I believe to be a very rare condition.

4. Injury to one or more of the muscles may handicap it for the remainder of the patient's life. A very common cause of such injury is the traumatism of birth. The infant's eyes have no fixed movements or balance, and such injuries are apt to escape discovery until later in life, when it is supposed to be of intrauterine origin. Injuries in later life to the ocular muscles are well known to be of common occurrence. In such cases the patient passes through a period of double vision, after which he may, with great difficulty, recover binocular single vision, or he may suppress the image from one eye and remain strabismic.

5. Inflammations about the orbit, especially of rheumatic and syphilitic origin, are not infrequent and are apt to leave one or more muscle tendons bound down by adhesions or the muscles themselves weakened.

6. Faulty innervation to the muscles is one of the most common causes of imperfect motility. It may be at the coordination centre and affect all the ocular muscles. This form of disturbance is frequently caused by toxicity, as is well illustrated by the drunken man who thinks the pavements and walls are slipping and tilting because his eye muscles allow the images to slide on the retinas. The nitrites, uric acid and putrefactive products from the gastrointestinal tract and various brain lesions are other sources of this form of muscle imbalance—commonly called ocular vertigo.

Faulty innervation may also be caused by lesions along the course of the third, fourth, or sixth nerves or at their nuclei, and it must not be assumed that because a patient does not see double there is no trouble with the muscles, for actual loss of control by the fusion sense is resisted to the limit of the patient's ability, and it is in this stage that symptoms are most marked. Actual loss of control causes little annoyance beyond the presence of double vision, and this is apt to be controlled by suppressing one of the images of the brain, especially if it occurs in young patients, as in the cross eyed child who doubtless sees double at the onset of his squint.

So much for the eye muscles directly, as a cause of the neurotic state. Is it not too much to expect that any of us should be entirely comfortable? Is it surprising that a nervous system thus kept on the *qui vive* during waking hours should become unstable?

ERRORS OF REFRACTION

Errors of refraction constitute the most common cause of muscle imbalance, and in addition to this source of general nervous irritation they disturb the accommodation and cause overwork of the ciliary muscle, or, as in the case of astigmatism, a constant uneasiness of this muscle and its stimulus because no satisfactory focus can be secured.

The disturbance caused by refractive errors is due to the fact that the muscles of accommodation and convergence are supplied by the same nerve, and the stimulus sent down for one is carried to the other, incidentally whether it is needed there or not. This arrangement is an economical one in eyes free from refracting errors, because when a person with normal vision fixes in the distance, all muscles are in natural tonus with the optic axes parallel, and when fixing at any near point exactly the same number of units of accommodation and convergence are required. But if there is an error of refraction, this relation is broken up, and if the patient does not squint he must exert a constant effort to prevent it, and since we have an inborn resentment to diplopia we prevent it if it is possible to do so. Those who

do squint are comfortable so far as the muscles are concerned, but where one squints and is comfortable and unsightly, there are hundreds keeping up the struggle to avoid squinting and are in this way taxing their nervous energy. Let us consider the three major forms of refractive errors singly.

First, *hyperopia*, or farsightedness, is a condition of the eye in which the total refraction is deficient. The rays of light are not sufficiently bent to focus on the retina, but would focus behind it if not arrested. Now, only perfectly focused rays give perfect vision, and since it is the function of the eye to see perfectly, it does so, if possible, regardless of the cost in nervous energy. Nature, in recognition of the exact requirements for perfect vision and the probability of defects, has provided a scheme whereby most persons can secure good vision in the presence of imperfections. This scheme consists in having most persons born farsighted and providing a means by which the farsightedness can be overcome. If this were not so, very few persons would see well because of the exactness of structure necessary to give even good vision. A variation of one mm. (one twenty-fifth of an inch) in the length of the eyeball, without a corresponding adjustment of the dioptric media, would cause sufficient defect in the refraction to reduce the visual acuity to one tenth of normal.

Hyperopia of one diopter causes one unit of stimulus over the third nerve when fixing in the distance, where the eyes must be parallel and the extraocular muscles in a state of natural tonus without convergence stimulus. Now, this unit of stimulus goes to the convergence as well as the accommodation, because both are supplied by the same nerve and would cause the optic axes to converge to a point one metre distant. But since this would produce diplopia, it must in some way be prevented. It is like being told by one master that you must do a certain thing, and by another that you must not do it, with a penalty for disobedience of either. The hyperopia says "stimulate the third nerve or you cannot see well," while the fusion sense says "if you do stimulate the third nerve you will see double." The central nervous system must take care of this dilemma through the coordination centre, and it is kept constantly on guard while the ciliary muscle is allowed during waking hours constantly to overwork. When the situation becomes unmanageable, the child becomes crosseyed and is comfortable but unsightly, though, as already stated, most of us are unwilling to squint, and the struggle is kept up until the patient is relieved by the use of glasses.

Second, *myopia*, or nearsightedness, is a condition of the eyeball in which the refraction is in excess. It is much less troublesome than hyperopia, because there is no means by which it can be overcome, consequently no effort is made. It is of much less frequent occurrence and always causes poor vision for distance. When the myope fixes for reading or other near work, he must avoid accommodation, because his eyes already possess the extra units of refraction required for near work, and the rays will be overfocused if he accommodates. Now, since accommodation and convergence go unit for unit in stimulus, he cannot bring the two optic axes together unless he does stimulate, so that he also is called upon to obey two opposing masters and the central nervous system must come to his relief or one eye will turn away from the median line, a condition which the fusion sense prevents to the last of its ability as long as the myopia remains uncorrected.

Third, *astigmatism* is a condition of the eye in which the refraction is unequal in the two principal meridians of the cornea; if one is in focus the other is always out of focus or neither may be properly focused. As a producer of functional nervous disturbances astigmatism has no peer. It is usually of the hyperopic type, and by accommodating the patient can improve his vision, not by overcoming hyperopia, but by bringing different lines of the object into focus successively. But, by no means at his command, can he make both meridians focus at the same time. Every time he fixes a new object, as a letter when reading, he must play from one extreme of the focus to the other in order to see it distinctly, and the stimulus is constantly changing without ever being satisfactory.

As to treatment, most of the ocular sources of nervous irritation can be corrected, but it is not within the scope of this paper to detail the methods. Suffice it to say that every neurotic should have the eyes studied, and fortunate are those who receive such treatment before the neurotic habit has become established, for once established a cure is obtained, as you know, only by the most skillful care, while recurrences are precipitated with ease.

From the unstable and unrelated nature of the symptoms presented by the neurotic, and from the usually healthy appearance of the patient, an observer is apt to feel that the illness is assumed and the symptoms are faked. Let us not, as physicians, make this mistake. The illness is as *bona fide* and deserving of our best skill as an attack of enteric fever, and the patient must command our patience as well as whatever ability we possess.

1708 Pine Street

THE MORALITY OF VENEREAL PROPHYLAXIS.

By Surgeon Robert V. Bachmann,
United States Navy.

This is a delicate subject. There is much to be said on both sides and this article at best can present only one point of view. The position of a military surgeon is quite different from that of his professional brothers ashore. It is to add one more angle to the various points of vision that this article is written.

It was in his report for the year 1910, I think, that the present surgeon general of the navy expressed an opinion that a prophylactic was needed that the individual could apply immediately after contact and thus do away with the danger that attends delay. The dispensary system of prophylaxis used in the navy, then and to a less extent now, is applicable only after the man's return to the ship from eight to twenty-four hours later.

Shortly after this, a perfectly reliable, convenient prophylactic was devised and amply demonstrated, and the question of whether venereal diseases are preventable or not has at present been decided beyond doubt. But can this knowledge be applied and will it or any other prophylactic measures ever be rewarded by a real achievement of results? At present there are many great obstacles in the way, which may conveniently be classified as sincere opposition and a more sinister kind which is not.

Insincere opposition comes from wholesale drug houses, retail pharmacies, and a large percentage of the medical profession.

Sincere opposition is met with from societies for the betterment of social conditions, retail druggists, medical journals, the medical profession in part, and the major part of public opinion.

Those whose efforts are to see venereal prophylaxis generally adopted or even made legal are the better of the State medical societies, many physicians including the best of the specialists, military organizations, and a few medical journals.

Insincere antagonism is due entirely to financial considerations. Many physicians and surgeons derive a large percentage of their income from venereal diseases and their consequences, and this fact makes them unwilling that any steps should be taken to reduce this fat supply. So many doctors and druggists themselves have expressed this opinion that there can be no doubt about the appalling state of affairs. Druggists in retail trade fear to antagonize the doctors; they also suffer by losing prescriptions and the sale of such chemicals as carbolic acid, peroxide of hydrogen, bichloride tablets, etc. This is the most pernicious phase of the subject. These druggists do worse than sell no protection at all—they sell false protection. Since July 1st of this year we have had over twenty-five venereally infected men all of whom had tried to get a reliable prophylactic at pharmacies and were given peroxide, bichloride tablets, carbolic acid solution, etc. Bichloride tablets seem to be the favorite article and have not the least value in preventing even those diseases which begin extra-urethrally.

As for the large wholesale houses, the president of one of them himself told me that the medical profession would not stand it that a supply house should handle a product which would cut into their business to an extent that venereal prophylaxis threatened to do. Another said he feared the attacks of women societies, and a third averred it was inconsistent to put antigonococcus vaccine and other remedies on the market simultaneously with prophylactics.

Sincere objections can be said to be due almost entirely to the fear that making illicit intercourse safe would result in its increase, therefore prostitution and other ills following in the wake of the social evil would receive an impetus. This objection is common to all sincere opponents of practical prophylactics, whether doctor, editor, pharmacist, or social worker. Those interested in suppressing vice also contend that venereal diseases are the most valuable weapon in their armament; that without this they could never hope to succeed in the fight. Therefore they aim to use venereal diseases to destroy prostitution, which deed accomplished, the abolition of venereal diseases must necessarily follow.

It should appear to every one concerned that the insincere objections are a negligible factor and must sooner or later cease from sheer lack of support. I still have faith enough in the good sense and integrity of the profession to be at ease about the ultimate, honest stand that will be taken on all questions like this, which vitally affect the public health. So let us deal only with the sincere objections. Assuming then that fear of increasing the social evil is the one great argument, let us go into this and see if there is reason behind it. What is there about the social evil itself that makes it such a menace to our civilized social state? The following are the three most frequently urged consequences:

1. Marriage is discouraged.
2. Other vices—half sisters of prostitution—flourish.
3. Venereal diseases occur.

The first is partly counteracted by the fact that without a means of providing for the unmarried male's sexual desires, illegitimacy, abortion, and sexual perversions increase. This is a common observation in military life. Many sexual aberrations are seen also as a result of the fear of infection. Chief among these is buccal coitus. A sailor told me recently that in a house of prostitution in Baltimore one inmate had taken on 185 men this way. His statements were verified by his companions, who described a line of men waiting for their turn to come.

That prostitution bears a certain relation to other vices is probably true; but it can hardly be classed as a causative factor. Both alcoholism and crime can easily be separated from prostitution, as shown by the strictly regulated condition of affairs in Paris.

Marriage is the natural, instinctive relation between man and woman and with the economical environments favorable it is very doubtful if illicit intercourse made safe would affect it unfavorably. Unfortunately the increasing complexity of our modern life, the higher cost of living and the greater demands made on the man supporting a family have a deleterious influence far greater than prostitution on this phase of life, and reforms should begin there.

Remaining then, we have venereal diseases as the third result of the social evil. Whatever opinion one may hold about the other two, as to the exact relation which the social evil bears to them, their enormity, and importance, there is no room for difference of opinion when it comes to venereal diseases. They are the one positive, undeniable, material effect. They are the visible, actual source of suffering and misery trailing in the wake. Their existence is proclaimed from the pages of every medical journal, every newspaper, every insane asylum, every hospital, every charitable institution, also in fact every walk of life. They head all vital statistics, they lead as a cause for more secondary diseases than any other cause or condition. Their cost in money is too stupendous for calculation. Their cost to the State in retardation of our society

is beyond determination. Their cost to the individual in suffering is pitiful to contemplate. They react alike on guilty or innocent, old or young, male or female. They recognize no class, no geography—they are worldwide. I think we may safely say that the worst of the ills resulting from the social evil is venereal diseases.

Now let us examine the method of combating the social evil with the fear of venereal diseases. In the first place can the moralists (and I use this term with no intention of disrespect) consistently do so? Is it not a serious offense against all of our moral code to have venereal diseases continue in order to use them as a club to combat other forms of vice? Would it be considered right to oppose antityphoid vaccination so that the incidence of typhoid fever could be used as an argument to awaken the municipal conscience in the matter of pure water supply? If vivisection arouses such serious antagonism, what can be said in defense of this form of human sacrifice to accomplish an ultimate improvement in the general community? I cannot see that any one has the moral right to oppose steps toward protecting the health of any individual, even should this result in a diminution of marriages and an increase in prostitution. For prostitution without venereal diseases is truly a snake without its fangs. What would be the result if, for the sake of argument, prostitution existed without venereal diseases? We would have an influence inhibiting marriage, but marriages that did occur would not be followed by luetic miscarriages, sterility, gonorrheal ophthalmia, endometritis, salpingitis, and all the rest of the miserable list. Few women care anything about a man's youthful errors and marry knowing that in all probability the man of their choice has had antemarital sexual experience. But what woman would contract a marriage with a man, did she know that at some time he had suffered from venereal infection?

When I see a fine specimen of our American youth enter the navy, make a splendid record for several years, and then some time after a long cruise at sea, fall a victim to one of the numerous forms of temptation that beset our sailors at every turn, I can readily see where this lapse of morality has left no permanent damage to his character. But the chancre that follows a few weeks later, that is going to ruin his body for several years and perhaps for life, and sometimes his soul too, and we, who are responsible, send him back to his home with our own souls quite at ease. Is there a moral right that prevents that man from getting a preventive which would have retained him as sound as he was on his enlistment day?

So far we have assumed that the fear of venereal diseases will eventually do away with the social evil. Is this a likely assumption? Before the fifteenth century prostitution had progressed at a pace with civilization in Europe. Presently syphilis appeared as a terrible scourge, introduced from America or spread by French soldiers returning from campaigns in Italy. Did prostitution suffer a diminution? Quite the contrary. Yet it is recorded that the form of syphilis was of a particularly virulent type, characterized by early pustules, bone lesions, and other precocious manifestations. So prostitution without the most dreadful of the venereal trio did not increase any faster, if as fast. Many decades have rolled by since the introduction of syphilis into Europe. It would appear that sufficient time had elapsed for the moralists to prove their contention. The weapon has been theirs for many years and has proved to be ineffectual. How much more time will be required to produce results? Prostitution seems to be more flourishing than ever, and its results are more evident.

We in the navy can hardly be blamed for becoming a little impatient. Every year we see one out of seven men become infected. That means annually nine thousand new cases. In four years—the term of enlistment—we accumulate 36,000 infections. It is a little discouraging to see year after year, this "deadline of the damned" go by our dispensary doors.

In the army the same conditions prevail. They have averaged about 40,000 cases for the last four years. Together the two arms of our military have been the occasion for, say, 75,000 venereal diseases for four years! At the end of this time the great majority of them reenter civil life. Thus do our military services become the breeding places of these diseases. Incidentally this eclipses any European figures.

In civil life the conditions are just as bad. The army and navy, being well scattered over the United States, furnish an excellent barometer of venereal conditions. The yearly venereal rate of New York city has been estimated at 250,000. The exact rate is difficult to estimate. Peterkin found that out of 262 nonvenereal patients to whom the blood test was applied, sixteen per cent. were syphilitic. Of this number nine per cent. were ignorant of their condition. These cases were taken irrespective of their disease from the King County Hospital, Seattle, Wash.

I do not wish to be understood in this article as decrying all attempts at moral improvement. On the contrary, I think the moral side of the venereal peril should have the closest attention. Efforts toward bettering the morals of the enlisted force of the navy have shown the most positive results, and are the best argument possible that practical prophylactics are quite compatible with them. Legal, moral, educational, and practical prophylactic measures should go hand in hand.

An appeal should be made to every physician, society, and druggist to assist at least passively in the eradication of the "hidden plague." It is an almost overwhelming fact—that dazzles the mind to behold—that if every illicit or dangerous intercourse were followed by a reliable prophylactic, in a few years we should witness the passing of the scourge as complete as the eradication of yellow fever, bubonic plague, and malaria.

I made this prognostication in the *Medical Record* for August 3, 1912: "Metchnikoff's experiments proving that syphilis can be prevented by the application of calomel ointment created quite a stir of attention, but nothing like the veritable storm of interest which followed the announcement of Ehrlich's curative agent. Yet of the two, eventually in the course of time, the former will be adjudged the more valuable contribution to med-

icine and mankind." One year has already made this statement truer today than it was at the time of writing. Reason is conquering prejudice and sex morality is being viewed with less biased glances. Some epoch making steps have already been taken. In Providence, R. I., the Committee on Venereal Prophylaxis of the State Medical Society has recommended that prophylactic tubes be prescribed by the members as deemed necessary. The chairman of a similar committee of the Washington State Medical Society recommended that all houses of prostitution be compelled to provide prophylactics to their patrons. This has actually been accomplished at Newport, R. I., where the city health officer, Doctor Keenan, has introduced the use of prophylactic tubes in the regulated houses of that place.

These are signs which point the trend of thought. The present conditions are intolerable. When we can get unity of action and agreement of opinion, they will cease to exist.

U. S. S. Delaware.

NATURAL DEFENSES OF THE BODY AGAINST DISEASE.

By Charles Clyde Sutter, M. D.,
Rochester, N. Y.

We are continually in the presence of disease germs; the food we eat or the water we drink may contain pathological disease germs; almost daily we are exposed to contagious or infectious diseases, yet only a small percentage of the persons exposed contract disease. Physicians are continually giving warning against the dangers of exposure to the transmissible diseases and are waging great campaigns in the prevention of disease. At this time it may be of interest to study why we do not all contract diseases with which we come in contact.

For a clear understanding of how the body in health is able to protect itself and ward off the causal agents of disease, we must first understand what we mean by disease and then consider what methods of natural defense the body possesses.

Life is an expression of function. When there is perfect correlation of the functions of the body and when there is perfect equilibrium of the organism with its environment, the body may be said to be in a state of health. Any disturbance of such equilibrium, hence any departure from the normal in structure or function, is a state of disease. There are many causes which disturb the equilibrium of the organism, but the effects or reactions of the organism to the cause are few in number. To combat the disturbances of equilibrium, the body is protected by natural defenses. The severity of the disease is determined, not only by the intensity of the cause, but by the state of the organism and its power of defense. So, to restore an organism to a state of perfect equilibrium, we must determine, not only the cause of the ailment, but the degree of health of the organism and the degree of reaction or the defenses it has with which to combat the causal agents. Certain of these defenses are used by every organism to maintain normal life; the others are called forth, or the normal defenses are exaggerated to defend the body against the causes which upset the equilibrium and produce diseased states.

The first general biological law or general attribute of living matter is that of *selfpreservation*. The first biological acts of living protoplasm are, therefore, *nutritional*. In order to obtain food and to remove itself from dangerous environmental conditions, *motion* becomes necessary, and is the next quality that obtains in matter. These, we are taught, are the primary attributes of life. For perfect health there must be complete appropriation, assimilation, and elimination. The life of an organism must not be disturbed by unusual internal or external agencies. It must proceed from birth to its highest development of structure and function by a process of evolution and, thence, in accordance with the universal law applying to all life, decline by a physiological process of involution to senility. Ordinarily, an organism does not have such fortunate existence. Agencies from within and without disturb the equilibrium. In consequence, on the one hand, there may be immediate death or, on the other hand, disease, resulting in death or in continuous disturbances of the processes of life, as in chronic disease.

The environmental agencies which tend to cut life short, or to excite disease and thus cause suffering, are met by reactions in the organism which bring about an adjustment of the disturbed equilibrium. Such reaction is physiological and is not a departure from that normal reaction which occurs between the organism and its environment save in the intensity of the process. By this reaction the organism protects itself—it expels, destroys, neutralizes or antagonizes the agent.

Biology teaches the various modes of defense that living protoplasm, throughout all its variations, possesses. In lower animals such mode of defense is a part of instinct. The lower animals are wise in order to survive and perpetuate species. The high specialization of those senses by which the enemy can be deceived—the color, the form, the habitat, special secretions, the mode of storing food—are all biological modes of defense. Throughout the entire biological world these factors are operative. Thus, preservation of life is the inevitable result of natural law. In man, to the stimulus of instinct is added that of reason. As the organism becomes more highly specialized the modes of defense are more highly specialized. The various agents which aim to destroy human life or bring about the state known as disease, are met by an augmentation of those modes of defense which are present in health. They become, when there is loss of equilibrium, as in disease, the strongest means the organism can possess for selfpreservation.

An increase of cellular activity, in metabolism, brings about *fever*—one of the most important means of defense. This same nutritional and assimilative act causes an increase of the white cells of the blood—*leucocytosis*—another mode of defense of the organism. The increased nutritional

Public Health Education of the Medical Society of the County of Monroe.

processes stimulate *secretory activity* and thereby multiply the abundant resources of the organism. In consequence there arise to an increased degree the chemical processes which are essential to the defense of the organism. Insult of the nervous system causes *pain*—another mode of defense. Motor insults seen in spasm, whether of voluntary or involuntary muscles, resulting in vomiting, diarrhea, cough, spasm of the muscles of the eye, spasm and resistance of the muscles of the body, are modes of defense—an exaggeration of the normal physiological acts. Fatigue is a very common and pronounced expression of disease.

The agencies which have disturbed the equilibrium and produced a departure from the normal in structure may have been met by well organized defense. The result may be recovery, destruction of the part, or death of the individual. The result of defense, when local, as in inflammation, may be not resolution, but a continuation of the process, terminating in deformity, causing, in the case of tubes or channels, an obstruction, or in the internal organs, degenerations or an overgrowth of fibrous tissue. Under such circumstances we find evidence of secondary defense, that is, attempts to approximate the normal equilibrium by the adaptation of the organism to morphological changes. This is seen in the establishment of collateral circulation after vascular obstruction, in the occurrence of enlargement of the heart as the result of valvular lesion, or in overgrowth of kidney tissue (hyperplasia) when the opposite kidney has been destroyed. The effect of adaptation brings about what is known as compensation or adjustment. One of the most effective agencies for adaptation, as well as defense, is the overwhelming provision against loss that is furnished by paired organs and by the multiplicity, far beyond the normal needs of the organism, of the cells furnishing the products of gland secretion.

Nature defends herself against the various morphological disorders by expelling a new growth or a foreign body; by surrounding the latter with inflammatory products which render its presence innocuous; by overcoming obstruction through enlargement of the part or organ (hypertrophy); and by the formation of collateral circulation. The effort to remove calculi (gallstones, kidney stones, etc.), the vomiting of undigested food, the discharge of foreign bodies from the intestinal canal by diarrhea, from the eye by a flood of tears, from the nose by sneezing, and from the throat and limiting lungs by coughing, are defensive acts. In functional disorders and in *fatigue,* the methods unconsciously resorted to by the organism to bring about repair are rest or exercise, sunlight, fresh air, tonic environmental conditions, and the adaptation of duties to the actual powers of the organism, such as limiting a physiological act, like digestion, to its capacity. Thus far we are unfamiliar with specific defensive agencies against alcohol, tobacco, tea, and allied materials. The only suggestion of defense, according to Musser, in these instances, is that of toleration for a time against their action, but sooner or later toleration ceases.

The creation of immunity is the greatest defense of the organism against infection. In immunity there are formed substances which are retained in the blood and tissues and have the power of destroying or rendering innocuous the poisons from the germs of infectious diseases. This immunity may be natural or acquired and may be either active or passive, depending upon whether it is produced by the organism or introduced artificially. Enjoying "good health" does not mean that the person is immune to contagious or infectious diseases nor is inability to withstand them evidence that he is below a proper health standard. Such a requirement would place practically every human being below a normal health standard, because none of us are in a position to withstand all the various infecting organisms known to cause disease in man. Withstanding infections depends upon the defenses which are possessed by the individual against each causal agent. The most robust child of a family may have a severe attack of scarlet fever and die, while the less healthy member of the family escapes it entirely or has a very mild form. Typhoid fever or pneumonia does not always occur in the weakest members of the family. In fact they may be acquired by those in apparently perfect health. Measles and mumps are known to run a more severe course in the adults than in children, not because they are less healthy, but because they have less resistance against the germs causing these diseases.

It is impossible to prevent the entrance of bacteria into the digestive tract with our food. Against this invasion the normal human individual is protected by the acidity of the secretions of the stomach. The body is protected against the poisonous substances formed in the intestinal tract by the secretions, the influence of the lining membrane of the intestine, the liver, which alone destroys two thirds of the poisons, and by the various glands throughout the body which have the power of destroying toxic substances and also by the organs which aid in their elimination.

In the respiratory tract we have a series of defenses against the invasion of foreign bodies or of disease germs. The vibrissæ or large hairs at the entrance, the cilia or hairlike processes of the lining cells of the respiratory tract, whose wavelike motion is always toward the exterior, constitute a mechanical line of defense. The excretion of mucus and the act of coughing caused by the irritation of the invading agents constitute another line of defense. Tissue resistance is a strong method of defense. The foreign particles which were able to pass this line of defense are deposited at the base of the lungs in lymph nodes and a smaller amount in the tissues themselves. By their mechanical presence they irritate and lower the resistance and make the soil more favorable for the development of tuberculous and other lesions. The most probable reason why acute colds are so prevalent during the late fall or early spring, is because the atmospheric conditions are then most favorable for a reduction of the line of defenses, and because the greater number of people are unprepared, or neglect the necessary hygienic rules as to clothing, diet, and the heating of their homes, thus rendering themselves susceptible to the action of these altered atmospheric conditions. Contagious diseases

are more prevalent at this time because they find easy footing when the soil is prepared by inflammatory or catarrhal disturbances of the lining membranes of the respiratory tract. In bronchitis the reactions are seen by the fever, leucocytosis, inflammation, increased secretion of the lining membrane, and cough. Here the cough is a defensive act which should not be suppressed. The fact that pneumonia and many other diseases are self limiting is sufficient evidence of the presence of a natural defense of the body against disease. In fact, the whole process of pneumonia and pleurisy must be regarded as a manifestation of the natural defenses possessed by the organism.

Under ordinary circumstances and with moderate care in our manner of living the natural defenses of the body are sufficient to combat and ward off all offending causes of disease, yet one seventh of the human race die of tuberculosis. A large proportion of the individuals, however, become infected before reaching adult life and never have the disease. Almost every body which comes to autopsy shows healed tuberculous lesions. The tuberculin tests show that over ninety per cent. of children are infected before reaching the twelfth year of life. This means that only in a very small proportion of those upon whom the seed falls is the soil suitable for active growth—only a natural immunity keeps the race alive (Osler).

The adult human individual in normal health seems to be practically immune to natural infections, but where the cause is overwhelming or where we, by abuse, reduce our power of defense, infective agencies are able to enter the system and devastate our tissues. We cannot withstand disease unless our defenses are kept sufficient. Defenses will not be sufficient unless we secure the proper kind, quality, and quantity of food, the proper amount of fresh air, rest, sleep, and exercise. If the defenses are still insufficient they must be augmented by the physician.

It will thus be seen, in accordance with natural law, that the organism is supplied with powers of nutrition which induce resistance, which enable it to protect itself by the destruction, by the counteraction, and by the elimination of deleterious agents, and thus by adaptation provide for the reestablishment of the disturbed equilibrium. Unfortunately, nutritional, resistant, defensive, and adaptive powers may, for various reasons, not accomplish their purpose. The physician must then determine the deficiencies and aberrations and supply means to aid the organism. Failure of the defenses of the organism against disease takes place because of the overwhelming action, quantitative or qualitative, of the causal agency. It may also be due to decreased resistance of the organism. Usually the defensive properties are sufficient, provided the organism is in perfect health. In such state, in response to the irritant, the normal forces of the organism are increased; they are distributed rapidly, where needed; the reserve force is sufficient to meet the emergency, or an abundance of new forces is created. On the other hand, the organism may be handicapped by weakness, congenital or acquired, morphological or functional, by previous disease, by the period of life, or by the environmental conditions. We aid Nature in her defense against the anatomical expression of disease by regulating the entire life of the organism so as to bring about an adjustment of function or complete adaptation. The daily life must be made to conform with the anatomical departure.

275 Alexander Street.

Abstracts and Reviews.

RECENT WORK ON THE PHYSIOLOGICAL PATHOLOGY OF GLYCOSURIA.*

By Professor J. J. R. Macleod,
Western Reserve University.

Some of the greatest investigators of disease and of physiology have directed their efforts toward the discovery of the pathology and pathogenesis of diabetes, and it is worthy of mention that, although such studies have been undertaken from almost every point of view and have been pursued for many years, we are yet relatively ignorant of the fundamental cause, or causes, of even the main symptom of the disease—glycosuria. The matter is one on which the clinical observer quite as much as the laboratory investigator should be able to throw considerable light, and the most notable contributions to our knowledge have been made by those who have been fortunate enough to combine both lines of investigation. Certainly we must turn to the collective results of painstaking clinical investigation for much of our information, for we cannot perfectly reproduce the disease in animals in precisely the form in which it is seen in man. We are capable, however, of reproducing the chief symptom of the disorder—glycosuria—in experimental animals, and by many different means.

The fact that it is possible to cause the excretion of sugar in the urine of such animals by so many means greatly complicates our problem, and suggests that the causes may be equally diverse in man. Inasmuch as certain derangements of renal function lead to the escape of sugar into the urine without causing any other disturbance, the symptom of glycosuria loses some of its specific value and we must seek some more characteristic phenomenon. This is found in the presence in diabetes of an excess of sugar in the blood—hyperglycemia.

Even in normal individuals the ingestion of an excessive amount of sugar at one time will lead to a temporary excess of blood sugar, but this excess is very rapidly cared for. Such an excess is not likely to follow the administration of starch, probably on account of the slower conversion of the starch into sugar and the delayed absorption of an excess through this fact. In other and susceptible persons there occurs a constant postprandial hyperglycemia, when moderate amounts of sugar are eaten. This is an abnormal condition, and such persons may be considered as being in the earliest stage of diabetes, and it is at this point that treatment should begin when such is possible. A con-

*Summary of a lecture delivered before the Harvey Society, Academy of Medicine, New York, February 14, 1914.

tinuation of such postprandial hyperglycemia ultimately leads to further disturbance of metabolism and of organs with the development of an ever increasing amount of blood sugar until it is found to be in excess constantly and until sugar begins to appear in the urine. From what has been said of the lesser tendency of the starches to be followed by a postprandial hyperglycemia, it is obvious that the sugar of the dietary should be replaced by these, but even these should be greatly reduced in amount.

In the delayed absorption of sugar into the blood after the ingestion of starches, due to the slow conversion of these into absorbable sugars, we have a possible explanation of the beneficial effects of the oatmeal diet in the treatment of diabetes. It is further known that, not only is oatmeal converted into sugar with relative slowness, but it calls forth comparatively little pancreatic secretion and thus may be of further value in diabetes, at least where the pancreas is partly at fault. To the question, What becomes of the excess of sugar in the blood after a meal? there are two possible answers: First, that it is built up into some compound in which it loses its chemical identity; and, second, that it is broken down or oxidized. The glycogen is stored mainly in the liver and muscles, and it has been thought that the excess of blood sugar in diabetes might be due to an inability of the muscles to burn the sugar. Careful perfusion experiments, and experiments on animals with all of the abdominal viscera removed, or with the abdominal aorta ligated, show that there is no material inability on the part of the tissues to burn sugar. Contrary results have been obtained, but these are explained by the fact that in diabetic animals there is an excess of sugar already present in the muscles, hence a smaller proportion of the perfused sugar is consumed. Those who obtained these contradictory results have fully accepted this explanation, so that it may now be stated that the muscles of a diabetic animal show no reduction in their ability to burn sugar.

Another moot point is that of how the sugar exists in the blood—whether free or combined. Chemical evidence seems to point to the existence of the sugar in a free state. On the other hand, the biological phenomena point in an opposite direction and favor the view that it is present in some loose combination. If it were free why should it not be filtered by the kidneys? It is suggested that in the process of absorption the sugar may become colloidal, possibly through its loose attachment to some colloidal body, and hence become nondialyzable. Much more might be said on these points, but it may be stated at least that in all probability, the essential cause of diabetes is the failure of the sugar to enter into some form of loose combination in the blood. This not only permits of its being filtered by the kidneys, but probably explains the fact that the sugar is neither fixed and stored in the tissues nor burned by them. It is probably true that such loose combination is necessary to prepare the sugar for entrance into the tissues and for its consumption.

It is well known that diabetes is on the increase and that its prevalence is greatest among those who are of a nervous habitus, who are brain workers, and those who are placed under great nervous stress and strain. An explanation for this is found in the fact that there is a very definite nervous control over the function of hepatic glycogenolysis. The precise nature of this control, like most other factors in diabetes, is not fully understood. The splanchnic nerves contain fibres, stimulation of which leads directly to hepatic glycogenolysis. There is evidence, however, that this glycogenolysis is not solely the direct result of the stimulation of the liver through nerve influences, but that it may be associated with, and in some way dependent upon the secretion of a hormone by the adrenal glands. This hormone may be affected by the nervous stimulation mentioned. A third factor in the production of hepatic glycogenolysis in persons under nervous strain, is possibly referable to an alteration in the hepatic circulation with a resulting relative anemia, which, in turn, gives rise to deficient oxidation with the accumulation of acid bodies in the liver. Just how these several factors associated with nervous influences may be balanced in the human organism is not yet known, but that they are of fundamental importance in the initiation of diabetes cannot be denied.

Studies of animals in which there has been a partial pancreatectomy, so performed as to leave only about one eighth of the gland intact, and with the preservation of the duct in a patent condition, show that there is an increased amount of blood sugar at first; that this soon leads to an increased hepatic glycogenolysis and an increasing glycosuria; and that soon the animals manifest a true diabetes with an exhaustion of the stored sugar and the conversion of the body tissues into sugar—a process quite analogous to diabetes in man. All of this progressive development of a true diabetes in these animals may be delayed, or even prevented by a proper regulation of the diet in such a way as to obviate the primary postprandial hyperglycemia. It seems justifiable, therefore, to state that a persistence of the abnormal postprandial hyperglycemia leads to organic and functional changes of a progressive nature which result finally in true diabetes.

The third phenomenon of major importance in diabetes is a late one, and one which is not encountered before the greater portion of the stored glycogen has been exhausted. This is the beginning of the end, for it is the conversion of all available tissues into sugar—glyconeogenesis. This leads to wasting of all the body proteins, and cannot be completely checked by alterations in the diet of the sufferer.

The essential features of glycosuria or diabetes may be summarized briefly. There is first an alteration which leads to the presence of an excess of glycogen in the blood after the ingestion of an ordinary amount of sugar. This is followed by an increase in this tendency so that there is a constant hyperglycemia, which, in turn, leads to functional and organic changes by which sugar is passed out in the urine. The next step is the beginning utilization of the stored glycogen of the body tissues; and this is followed by the final condition of glyconeogenesis, in which all the available material in the body is ultimately converted into sugar.

The chief mechanism in the initiation of diabetes seems to be a nervous derangement. Certain hor-

mones may play a part in glycogenolysis in the liver. There is no increased burning of sugar by the tissues in the diabetic. Though the pancreas is intimately and casually associated with the mechanism of glycosuria, there is no evidence that its action is through the presence or absence of hormones, for the administration of pancreatic extracts to partially depancreatized dogs or the perfusion of such animals with the blood from normal animals does not increase the ability of the depancreatized animals to prepare sugar for burning.

While we have learned much from studies such as have just been outlined, we yet have a vast amount to learn and we must look, not only to the clinician, but to the physiologist, and more particularly to the biochemist for our further advance.

Therapeutic Notes.

Treatment of Psoriasis.—W. S. Devausney, in the *Journal of the Medical Society of New Jersey* for December, 1913, outlines a plan of treatment for psoriasis which has proved highly successful in his hands. The first measure in the external treatment is to have the patient soak for twenty minutes in a bathtubful of hot water in which the following has been dissolved:

℞ Potassii carbonatis, ... ʒiv (120 grams);
Sodii boratis, ...) ..... āā ʒiii (90 grams);
Sodii carbonatis, ...)
Amyli pulveris, ... lb. i (480 grams).
Misce.

This combination has a cooling, antipruritic, and softening effect on the skin, and facilitates removal of the scales.

After the skin is thoroughly dry, the preparation should be applied on the affected areas with a brush:

℞ Olei rusci, ... ʒiiss (10 grams);
Acidi salicylici,) ..... āā ʒv (20 grams);
Chrysarobini,)
Adipis lanæ (anhydrosi), .ʒvi, grs. xv (25 grams);
Misce et adde:
Saponis viridis, ...ʒv, grs. xv (21 grams).
Tere ut fiat pasta.

After this has been applied the parts should be covered with gauze and bandages. As an extra precaution to the eyes, the patient may be required to wear cotton gloves. If an excessive degree of dermatitis results from the ointment, the latter should be discontinued for a few days and a soothing preparation applied:

℞ Glyceriti boroglycerini, ...ʒss (2 grams);
Adipis lanæ, ...ʒii (8 grams);
Unguenti aquæ rosæ, ...ʒvi (24 grams).
Fiat unguentum.

Where the attack of psoriasis is not very extensive, and the lesions are more or less distinctly isolated, the following preparation should be painted on after the preliminary medicated bath, instead of that already referred to:

℞ Acidi salicylici, ... ʒi (4 grams);
Chrysarobini, ...ʒiss (6 grams);
Collodii, ... ʒi (30 grams).
M. et ft. collodium...
Sig.: Keep well corked, and never apply near a flame.

This should be used night and morning. Every third or fourth day the patient should thoroughly soak in the medicated bath and then reapply the collodion. For psoriasis of the face, neck, and scalp the author applies night and morning the official unguentum hydrargyriammoniati.

The internal treatment of psoriasis should begin with ten grain (0.6 gram) tablet of calomel and soda at bedtime, following in the morning by a saline. As for the diet, the author thinks well of placing the patients for the first week or ten days on rice, bread, butter, and water (the rice to be well masticated). Subsequently a strictly vegetable diet should still be continued. Abstention from meats, eggs, cheese, milk, and alcohol is to be advised. The following mixture for internal use is beneficial:

℞ Potassii acetatis, ... ʒvi (24 grams);
Sodii salicylatis, ...ʒiii (12 grams);
Fluidextracti rhamni purshianæ, ...ʒss (2 grams);
Misturæ rhei et sodæ, q. s. ad.....ʒiii (100 grams).
M. Sig.: One dram three times a day in a half glassful of water after meals.

In addition, there should be administered hypodermically two or three times weekly four drops of the liquor sodii arsenatis, the dose being gradually increased to the tolerance limit. Pills containing arsenic may be used instead, if desired. The internal medication should be continued several weeks after entire disappearance of the lesions.

Treatment of Metrorrhagia.—P. Dalché, in *Gazette de gynécologie* for November 1, 1913, is credited with the statement that in the metrorrhagia of virgins repeated dippings of the hands in very hot, almost boiling, water generally proves effective as a remedial measure. Rest in bed, with or without heliotherapy or exposure to sunlight, is indispensable. An icebag should be kept on the lower abdomen. Calcium chloride and opium may with advantage be used internally. Vaginal injections should be given first at room temperature, then cold; they are not indispensable, except to wash out clots that are beginning to undergo putrefactive changes. Thyroid preparations in moderate doses give good results; mammary or adrenal organotherapy also sometimes proves serviceable. Blistering over the liver brings about arrest of some refractory menorrhagias. Fresh animal serum or antidiphtheritic serum may be applied on tampons, injected subcutaneously, given by the rectum, or administered internally, in a little sweetened water, before the menstrual periods. Radium and the x rays control ovarian activity, but there is danger of overstepping the limits of safe dosing and causing permanent sterility.

Hot Air Applications in the Treatment of Carbuncle.—Raymond Grégoire, in *Paris médical* for November 22, 1913, asserts that the bringing of a jet of heated air in contact with an incised carbuncle will act powerfully in relieving pain, gradually control suppuration, and greatly hasten healing. Deep and broad crucial incisions, down to the underlying healthy tissues, should first be made, the resulting four flaps elevated by dissection, gauze passed under them, and a dry protective dressing applied. Next day the hot air treatment may be begun, the carbuncle being exposed and the stream

of air directed successively over its various parts for a period of ten minutes. Repeated twice daily, this procedure causes the discharge rapidly to dry up. The margins present a dark, calcined appearance; the base becomes dry, and the four angular flaps shrivel. The cavity is firmly packed with gauze each time. Repair goes on quickly beneath the dry surface, the pain lessens from the beginning of the treatment, and in three weeks complete recovery from a carbuncle, which would otherwise have taken two months to heal, will result.

Local Treatment of Acne.—Gaucher, in *Monde médical* for November 25, 1913, is credited with the following formula:

℞ Sulphuris præcipitati, ...3iss (6 grams);
Talci pulveris, ...3ss (2 grams);
Glycerini, ...℥ii (60 grams);
Aquæ rosæ, ...℥iv (120 grams);
Tincturæ guillajæ, ...3iii (10 grams).
Misce secundum artem.

This preparation should be applied every evening over the affected area and allowed to remain overnight. Each morning the skin should be cleansed with hot water and a mixture of sulphur and talcum dusted over it:

℞ Sulphuris præcipitati, ...gr. xx (1.25 gram);
Talci pulveris, ...3ii (60 grams).
M. et ft. pulvis.

If necessary, pustules may be opened, evacuated, and washed with a one per cent. solution of resorcinol.

Treatment of Diabetes mellitus.—W. Langdon Brown, in the *Clinical Journal* for October 1, 1913, points out that under the now prevailing system of only partial restriction of the carbohydrates in cases of glycosuria, one need not insist as a routine on pure gluten bread. Rolls consisting of mixture of gluten with some starch are convenient and palatable, though the author finds it still advisable to intercalate some days on which a gluten or protein bread is given. Potato cakes may replace bread to a certain extent, and levulose can sometimes be assimilated to the extent of about 15 drams (60 grams), if cautiously given in divided doses each not exceeding 5 drams (20 grams). The author has seen striking benefit from the use of this form of sugar.

An important fact to be borne in mind in regard to the diabetic diet is that a patient can often take a vegetable diet, naturally containing a good deal of carbohydrate material, better than he can manage a carbohydrate free diet with abundant meat. Thus, in the course of an ordinarily restricted diet a week of the following diets may be advantageously introduced:

(a) For two days: Lettuce, cabbage, spinach, veal broth, three eggs, butter, two lemons for lemonade, coffee.

(b) For three days: Eight ounces of oatmeal as porridge or oatcake, four ounces of butter, five eggs, two lemons, coffee.

(c) Two days of (a) again.

In the presence of acidosis, citric and glutaric acids and alcohol may, to a limited extent, replace the carbohydrates in metabolism. Citrates may be added to the alkaline mixture that should always be given when the diet is being restricted or when acidosis is marked. In spite of the dangers of the alcohol habit, it is often advisable to give alcohol to the extent of about an ounce of the pure spirit in the day. Malt liquors, sweet wines, champagne and liquors are naturally to be avoided. In the alkaline treatment it is not sufficient to give sodium salts alone, as is often done, for this results in draining salts of other metals from the tissues. The author employs the following mixture, based upon the relative amounts of the metals normally present in the urine:

℞ Sodii bicarbonatis, ...
Potassii citratis, ...
Calcii lactatis, ...
Magnesii carbonatis, ...
Aquæ, q. s. ad.....

M. Sig.: To be taken three times a day or at shorter—up to three hourly—intervals, according to the severity of the case.

Such treatment augments the diacetic reaction in the urine for a time, but this is merely because the excretion of the acetone bodies is being facilitated, and not because of increased production.

Improved Method of Operation in Dupuytren's Contraction of the Fingers.—J. Hutchinson, in the *Proceedings of the Royal Society of Medicine* for July, 1913, mentions the fact that even where the surgeon carefully removes every portion of the palmar fascia he may find, that the rigidly contracted finger or fingers in Dupuytren's contraction often cannot be straightened completely. The time required for healing of the wound hinders further measures for rectification, and whatever form of splint is employed; there is risk of permanent stiffening of the finger. It is in the first interphalangeal joint, the author finds, that the main obstacle to reduction exists after complete excision of the palmar band. Röntgen ray examination shows that the head of the first phalanx actually becomes altered in shape in some cases. The modification in operative treatment proposed by Hutchinson when palmar excision is found insufficient, as it always is in long standing cases, is to turn over the hand, expose the extensor tendon over the first interphalangeal joint, hold it aside or, if necessary, divide it temporarily, clear the head of the phalanx, and completely resect it at the neck. This will usually be found to allow the finger to come straight without tension. It might be objected that the division of the anterior joint ligament entailed would be apt to leave a flaillike finger, but the author's experience has been that the difficulty lies rather in preventing ankylosis. The method resembles that often employed with success in hammer toe, and the author has found it to give encouraging results.

Treatment of Anemia.—Jeannel, in *Paris médical* for June 14, 1913, is credited with the following formula for administering iron in solution:

℞ Ferri et potassii tartratis, ...gr. xv (1 gram);
Saccharı, ...
Acidi tartarici, ...gr. xlv (3 grams);
Sodii bicarbonatis, ...gr. xxx (2 grams).
M. et ft. in chartam No. i.

Sig.: Dissolve in a quart (litre) or water. The resulting solution is to be taken, in suitable amounts, during meals with wine, milk or other beverage.

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EDITORS

CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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ERRORS IN THE CLINICAL TEACHING OF MEDICINE.

There is probably no phase of the entire educational problem, from the primary school to the higher education in the sciences, that has not in recent years been the subject of heated discussion, and medicine, as one of the higher branches, has attracted much attention. The reformation in teaching that followed the reports of Abraham Flexner has been great and of inestimable value to the profession and the laity. The changes that have taken place have been so sweeping, so revolutionary in most cases, and so successful that we are prone to think that all is now well with our present methods. Though it is disconcerting to have gross defects pointed out after we have come to think that we have approached very near to the best within our power, it is yet a revelation which must be welcomed if we are to continue our advance.

We have been disturbed from time to time by certain misgivings with regard to the training of the young physician in some of the clinical aspects of medicine, and only a few days since we were rudely awakened by a conversation with an alert and progressive teacher of physical diagnosis, who follows to the post mortem room those of his patients who succumb, and who there compares his ante mortem diagnoses with the conditions actually found. His experience led him to express the opinion that contemporary instruction in physical diagnosis is mainly a continuous repetition of statements handed down from the earlier days of the art. He contends that there is little real observation of an original and independent nature, and that many of the supposed phenomena are mainly or wholly errors which arose in careless observation, made before pathology had reached its present scope and accuracy. These were incorporated in the textbooks of that time and have been handed down without question to the present day. Not only is this perpetuation of error misleading in the development of an accurate diagnosis, but it is an obvious source of inconvenience when the keen student, fresh from his work in anatomy, physiology, pathology, and the more exact fields of medicine presses one for an acceptable explanation of the production of these signs, incorrectly observed or interpreted. This slavish following of accepted statements works harm in another way; it stifles original observation, for the student is taught that such-and-such a sign is present and is led to believe that his inability to discover it is a fault of his, rather than to realize that it may actually not be present. A final result of these methods is seen in the fact that autopsy findings frequently reveal conditions which should have been discovered easily during life, but which have been completely overlooked because one has been unable to fit findings to previous teachings. Thus, we learn that tricuspid stenosis is often found in the post mortem room, but that it is seldom diagnosed, although its physical signs are readily recognizable and not hard to interpret.

We were more than willing to believe that physical diagnosis was the only field of clinical medicine in which there remained such signs of lack of progress, when we came upon an able paper on the teaching of clinical medicine, written by James Mackenzie in the *British Medical Journal* for January 3, 1914. Mackenzie takes the stand that our present methods of instruction teach physical signs only, or at least chiefly, and that herein they are defective from the viewpoint of the practitioner. His teaching is that disease is usually well advanced when it is productive of physical signs, and that it should be our endeavor to learn how to make a diagnosis of a disease when it is in its incipiency—that is, before organic changes have taken place, with the consequent appearance of physical signs. His contention is that the general practitioner is constantly encountering disease in this early and perhaps curable stage, but that all of his training has taught him to seek for certain physical signs, in the absence of

which he is at a loss to know how to treat the patient or to make a diagnosis.

There is no doubt in our minds that both of these aspects of the teaching of clinical medicine deserve serious consideration. Many of us are often personally aware of defects in our methods and teachings, but shrink from taking the initiative for their correction and rather await some external stimulus. It is to be hoped that the facts just related may serve as the needed stimulus to some who are now waiting.

LESIONS OF THE DUCTLESS GLANDS AND DISEASE.

In the course of a consultation we recently had occasion to explain to the patient that her disorder, adipositas generalis, was the result of lesions of certain ductless glands, due in turn to an acute infection from which she had suffered some time before the development of her ailment. A young practitioner, recently graduated from a Class A plus medical school and who had started practice in the small town in which this lady resided, on being called in casually, belittled the opinion vouchsafed by his senior. Now it happened that the patient knew more than the young practitioner on the subject; he incurred her displeasure, and nothing that we could say in favor of our young colleague—whom we wished to associate with us in the treatment of the case—could appease her. Beside the lesson that any young practitioner who may have a tendency to urge upon his lay hearers what superior knowledge he may think he possesses, should derive from this incident, a fact is emphasized by it, viz., that even our best colleges do not sufficiently familiarize students with the vital questions of the day.

Timely in connection with this subject is a recent study of the influence of diphtheria toxins upon the pituitary body, by Creutzfeldt and Von Koch (*Virchow's Archiv*, CCXIII, 1, 1913). Vascular disorders leading ultimately to cardiac lesions have long been attributed to the paralyzing action of diphtheria toxin upon the vasomotor centre, but the familiar influence of epinephrine upon the cardiovascular system, the lesions caused in the adrenals by diphtheria, and the marked beneficial action of pituitrin in diphtheritic hypotension led these authors to believe that the pituitary might also be morbidly influenced by the same toxin. Examination of the organ confirmed their suspicions. They found advanced degeneration of the epithelial cells of the pars intermedia, the active portion of the gland, so marked in some areas as to entail their complete destruction—lesions which destroyed more or less their functional activity. Could this be demonstrated experimentally? Twelve guinea-pigs were injected with a pure culture of Klebs-Loeffler bacillus. In every instance marked lesions were found in the pars intermedia. The authors then concluded that the paralytic phenomena of which the cardiovascular system was the seat, were due, not only at least to a direct action on this system, but also to the lesions they cause in the pituitary body.

This is not new to American readers who have kept in touch with the pathological and clinical phenomena awakened in the various ductless glands. Photomicrographs, prima facie evidence of such lesions produced in the pituitary body by various poisons, have been before them over a decade. But what shall we say of obesity in its relations to the pituitary, the thyroid, and the adrenals? Is there longer any doubt of such relations? It is time that the products of our modernized schools should ask themselves that question—as well as many others pertaining to the ductless glands, if they would do justice to their patients, to themselves, and to their alma mater.

RHUS TOXICONDENDRON POISONING AND ITS TREATMENT.

Professor E. Rost is so accomplished a man of science, chemist, toxicologist, and botanist of no mean capacity, that everything he publishes deserves attention. His studies of Rhus toxicodendron, Primula obconica and various species of sumach, collected in *Medizinische Klinik* for January 18th and 25th, and February 1st, are a serious contribution to knowledge. There are a good many questions of practical interest discussed. Can the poison of rhus be carried by the air? Is it volatile, an emanation, as it were, from the plant? Is it pollen which insects carry? To all these questions Professor Rost answers with a thoroughgoing negative. Taking them in their order, we find that the poison is not volatile. His analysis of the special property of the poisonous resin, or oil as Schmiedeberg thought it, goes deeper than any we have seen. This resin exists in the root stem, branches, leaves, stamens and pistils, in fact in all parts of the plant except the pollen and flowers. Peculiar follicles in the leaves and hairy corymbs of the fruit secrete it, and touch is necessary to cause the dermatitis, resembling eczema, which is ocular evidence of poisoning. The resin, when dry, is poisonous, it is soluble in alcohol, and has a special affinity for the arteries of the skin. All these statements, we learn, are founded on observation and experiment. Treatment, which is simple, consists of washing with hot water and

soap, and the careful application of a saturated solution of lead acetate in dilute alcohol. This is effective, but it seems to us that alum might be added with advantage. Salves and ointments must be carefully avoided; the prohibition is all important. In the large bulk of the professor's work nothing is left out, and we see that our American writers, Syme, Yandell, Hudson, Morrow, and Stevens, are referred to.

RACIAL ABILITY.

Boaz and his followers hold that the inherent capacity for culture and education is practically the same among all races. Most men who have investigated the subject, however, believe that there is a vast difference in the intellectual potentialities as well as in the actual accomplishments of different peoples. Further to elucidate this point, Josiah Morse, Ph. D., of the University of South Carolina, conducted a research (*Popular Science Monthly*, January, 1914) into the comparative intelligence of the white and negro school children of the city of Columbia. He applied the Binet test, modified by Goddard, and found that the whites excelled throughout the whole of the school going age. In 29.4 per cent. of the colored children there was a mental retardation of more than one year, whereas only 10.2 per cent. of the white children were equally backward. Exceptional intellectual advancement was more than five times as common in the whites as in the colored. This was shown by the fact that 5.3 per cent. of the white children tested more than one year in advance of their chronological age, whereas the corresponding group among the colored children was only 0.8 per cent. of the total. Furthermore, the number of white children testing at age was decidedly larger than any other group among them, while the largest group for the colored children was that in which the test showed them to be one year under age.



DR. ROSWELL PARK.

Whether this difference in intellectual capacity measured by the Binet scale should be considered as final in judging the intellectual capacity of the negro, is an open question. There were differences in the abilities of the two races in solving certain of the test questions and problems that seem to indicate that the Binet system is not so well adapted to measure the negro intelligence as the white. Thus the negro children seemed to excel in rote memory, e. g., in counting, repeating digits, naming words, making rhymes, and in time orientation, but they made a worse showing in tests involving esthetic judgment, motor control, observation, and logical memory. As the tests were carried out on children having the same school training and similar home environment, it is evident that at least some of these differences must be due to inherent racial dissemblance. The author concludes that if "Binet and Simon had originally tested Southern negro children they would have worked out from the results a scale different from the present one in several respects, which, when applied to Southern white children, would be found to be for the most part a year or more too young, though possibly there would be some tests which would yield opposite results."

The conclusions of Morse working among the negroes are similar to those of the physicians who conduct the mental examination of immigrants. Thus, J. G. Wilson, in the *Boston Medical and Surgical Journal* for February 20, 1913, says that "even though the essential phenomena of feebleminedness be the same among all races, it does not necessarily follow that these can be best elicited in every case by identical methods." A growing realization of the practical difficulties in the way of determining accurately whether a given immigrant is simply stupid and ignorant, or actually mentally deficient, has led the Public Health Service to undertake an intensive study of the normal mental capacity of the different alien races. Pending the results of this

study no immigrant is certified as feebleminded simply because of his failure to respond to any arbitrary standard which has so far been devised.

It is apparent that not only is the whole subject of feeblemindedness in need of further investigation, but correlation is required of the results already obtained, before further drastic eugenic legislation is undertaken.

THE DOCTOR'S USUAL REWARD.

A communication of uncommon and exciting nature appears in the *Liverpool Medicochirurgical Journal* for January, 1914, from the pen of R. W. Murray, F. R. C. S., entitled A Deed That Saved the Empire. The deed in question was that of the British admiral Duncan, who beat the Dutch at Camperdown in 1797, and the able assistance on board the *Ardent*, of Robert Young, a forty year old surgeon. The surgeon worked steadily for fifteen hours, amputating limbs and tying bloodvessels in the cockpit, which was thirty feet long, five feet, one and a half inch in height, entirely below the water line, and lighted by candles in horn lanterns; he was without skilled assistance. He seems to have stopped only to reprimand the wounded for making so much noise as to distress the dying. The admiral was rewarded with the title of viscount and a pension of £2,000; the surgeon received the hearty cheers of the convalescents of his cockpit surgery.

Obituary.

ROSWELL PARK, M. D.,

of Buffalo.

Dr. Roswell Park died suddenly at his home in Buffalo, on Sunday, February 15th, in his sixty-second year. He was born in Pomfret, Conn., in 1852, and was educated at Racine College, Wisconsin, where he obtained the degree of A. B. in 1872, and of A. M. in 1875, and at Northwestern University, where he graduated as M. D. in 1876. His first appointment was at the Woman's Medical College, of Chicago, where he was demonstrator of anatomy. Subsequently he became, in turn, adjunct professor of anatomy at Northwestern University, professor of anatomy at the same institution, lecturer on surgery at Rush Medical College, Chicago, professor of surgery at the University of Buffalo, and surgeon to the Buffalo General Hospital, holding the two last positions from 1883 until his death. He attended President McKinley, fatally shot in 1901. Doctor Park received the honorary degrees of A. M. from Harvard in 1895 and LL. D. from Yale in 1902. He edited for a time the *Weekly Medical Review*. He was associate editor of the *Annals of Surgery*, the author of two standard works on modern surgery, of a history of medicine, and numerous smaller works, including a volume of essays showing deep thought and research and written in interesting and scholarly style. Doctor Park was a frequent and welcome contributor to the NEW YORK MEDICAL JOURNAL. He is survived by a sister and two sons.

News Items.

Harvey Society Lectures.—The next lecture in the course will be given on Saturday evening, February 28th, at 8.30 o'clock, at the New York Academy of Medicine, by Professor Richard P. Strong, of Harvard University, on the Etiology of Oroya Fever and Verruga Peruviana.

New York Society of Anesthetists.—A meeting of this society will be held at the New York Academy of Medicine on Friday evening, February 27th. The program will consist of the demonstration of several new instruments and papers by Dr. Charles Teter and Dr. William Kranower.

Doctor Cushing to Deliver the Weir Mitchell Lecture.—Under the auspices of the Rush Society, the College of Physicians of Philadelphia, the University of Pennsylvania, the Philadelphia Pathological Society, and the Mütter Museum, the Weir Mitchell lecture for 1914 will be given on Wednesday evening, February 25th, by Dr. Harvey Cushing, professor of surgery at the Harvard Medical School, on Clinical Types of Dyspituitarism.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, February 23d, North Branch of the Philadelphia County Medical Society; Tuesday, February 24th, Section in General Medicine of the College of Physicians, West Philadelphia Medical Association, St. Mary's Hospital Clinical Association, and the Jefferson Hospital Clinical Society; Wednesday, February 25th, Philadelphia County Medical Society; Thursday, February 26th, Pathological Society and the Germantown Branch of the Philadelphia County Medical Society; Friday, February 27th, Neurological Society, Northern Medical Association, South Branch of the Philadelphia County Medical Society, and the Medical Club, directors.

Tonsil Operation.—The following resolutions in reference to operations upon the tonsils have been voted by the Public Health, Hospital, and Budget Committee of the New York Academy of Medicine:

Resolved, That it is the sense of this committee that all operations on the tonsils should be performed in hospitals or in such dispensaries as are provided with operating rooms and with recovery ward facilities.

Resolved, That private hospitals of the city be requested to cooperate with the health department of the city in the operative care of children with enlarged tonsils and adenoids; that these hospitals provide proper and adequate facilities for such cases, and that the city compensate the hospitals for this special service; and, further, that the public hospitals be requested to provide similar facilities without special compensation.

Resolution on the Death of Doctor Van Santvoord.—At a regular meeting of the Harlem Medical Association, held on Wednesday evening, February 11th, the following resolution was adopted regarding Dr. Richard van Santvoord, late president of the association:

The members of the Harlem Medical Association view with profound regret the death of one of its members and ex-presidents, Dr. Richard van Santvoord. In his death we have lost an active and respected member, who was admired both as man and physician.

Resolved, That the association spread upon its minutes this record and that a copy of this resolution be forwarded to his bereaved family.

Signed, JOHN RIMER, M. D.
JOHN F. CONNORS, M. D.
WILLIAM H. LUCKETT, M. D.

Memorial to Doctor O'Loughlin at St. Vincent's Hospital.—A new emergency ward in St. Vincent's Hospital, equipped and furnished throughout as a memorial to Dr. Francis Norman O'Loughlin, the senior ship surgeon of the White Star Line, who perished in the disaster to the *Titanic*, was dedicated on Monday, February 16th, to the use of disabled seamen. The ward is on the ground floor, off the entrance on Eleventh Street, near Seventh Avenue. It consists of three separate rooms, one for general use containing nine beds, one with three beds for patients in delirium, and the third with five beds to provide for an overflow or for women patients when necessary.

New Haven, Conn., Medical Association.—The following officers were elected at the annual meeting of this society, held on the evening of January 21st: President, Dr. Willis H. Crowe; first vice-president, Dr. Alfred G. Nadler; second vice-president, Dr. F. B. Standish; secretary, Dr. T. H. Haynes; executive committee, Dr. William F. Verdin and Dr. Seymour Spier; literary committee, Dr. Joseph L. Linde; finance committee, Dr. Frank H. Wheeler and Dr. Joseph H. Townsend; library committee, Dr. Gustavus Eliot and Dr. Wilder Tileston.

A Radium Hospital to Be Established in Philadelphia.—The Radium Institute of Philadelphia was incorporated on Tuesday, February 10th, under the laws of the State of Delaware, to "build, maintain, and operate hospitals and institutions for the treatment of cancer and other diseases." The capital stock is $250,000. It is said that those who are interested have laid plans to procure all the radium that will be needed when the institute is opened. The site has been selected and work on the structure will be started in a few weeks.

Association of American Medical Colleges.—The twenty-fourth annual meeting of this association will be held at the Congress Hotel, Chicago, on Wednesday, February 25th, under the presidency of Dr. E. P. Lyon, of the University of Minnesota. An interesting feature of the program will be a symposium on clinical teaching, and among those who will contribute papers on this subject are Dr. Charles Hugh Neilson, of St. Louis University; Dr. Joseph B. de Lee, of the Northwestern University Medical School; Dr. Arthur Dean Bevan, of Rush Medical College, and Dr. H. U. Williams, of the University of Buffalo.

The Graduate Council of the Woman's Medical College.—Graduates of the Woman's Medical College, of Philadelphia, held a meeting in Philadelphia on Wednesday, February 11th, and organized the Graduate Council of the college, which consists of ten members at large, chosen by a committee of five appointed by the president of the alumnæ association, and of twenty-five representative members of the twenty-five classes between the years 1881 and 1909. The officers are: President, Dr. Lillian Welsh, of Baltimore; vice-president, Dr. Catherine Macfarland, of Philadelphia; secretary, Dr. Elizabeth Clark, of Philadelphia; treasurer, Dr. Johanna Leo, of New York. Plans for increasing the endowment of the Woman's Medical College, of Philadelphia, were discussed, and it is hoped that it will be possible to bring the endowment fund up to $500,000. The next meeting of the council will be held on June 3d.

Medical Society of the County of New York.—A stated meeting of this society will be held on Monday evening, February 23d, in Hosack Hall, New York Academy of Medicine. Dr. Albert Warren Ferris, medical expert of the State Reservation Committee, will read, by invitation, a paper entitled Saratoga Springs and Its Mineral Waters. Dr. Henry S. Stark will read a paper on the Phenomenon of Pathological Antagonism in Its Relation to Diabetes Mellitus, which will be discussed by Dr. William H. Park, Dr. Isaac Adler, and Dr. Harlow Brooks. Next month's meeting of the society will be held on March 23d, and the program will include the following papers: Typhoid Vaccines, illustrated by lantern slides, by Major Frederick F. Russell, Medical Corps of the United States Army; Vaccines and Serums, by Dr. Hans Zinsser; the Practical Application of Vaccines and Serums, by Dr. James G. Dwyer; Cancer, by Dr. Francis Carter Wood.

Wisconsin Surgical Association.—This association was organized on Friday, February 6th, at a meeting held in Milwaukee, and the following officers were elected to serve for the first year: President, Dr. A. H. Levings, of Milwaukee; first vice-president, Dr. C. H. Lemon, of Milwaukee; second vice-president, Dr. W. E. Fairfield, of Green Bay; third vice-president, Dr. J. M. Dodd, of Ashland; fourth vice-president, Dr. Wilson Cunningham, of Platteville; secretary and treasurer, Dr. Daniel Hopkinson, of Milwaukee. Members of the board of regents: For five years, Dr. Horace Manchester Brown, of Milwaukee; for four years, Dr. J. V. R. Lyman, of Eau Claire; for three years, Dr. F. Gregory Connell, of Oshkosh; for two years, Dr. J. F. Pember, of Janesville; for one year, Dr. W. C. F. Witte, of Milwaukee. The first clinic will be held in Milwaukee in April and clinics will be held every three months thereafter at different towns and cities throughout the State. About two hundred were present at the first meeting.

Doctor Lederle's Retirement.—After a service of almost twenty years in the Department of Health of the City of New York, and twice Commissioner of Health, Doctor Lederle resigned on February 1, 1914. In recognition of his service to the department and to the cause of public health generally, the board of health at its last meeting, adopted the following resolution:

Resolved, That the Board of Health of the City of New York at the close of the long career of high public service of Dr. Ernst J. Lederle, Commissioner of Health of the City of New York hereby spreads upon its minutes this mark of its appreciation of the splendid vigor, profound and enlightened intelligence, and lofty spirit of devotion which have characterized his fulfilment of his trust. During his administration of the department, the causes of preventable disease have been sought out, studied, and, as far as possible, eliminated with a gratifying resultant improvement of general health of our people and reduction in the death rate. The multifarious activities of the department have been systematized and brought to a high state of efficiency. For these things this board, of which he has been a member for so long, desires to express the esteem his character and service have called forth, and of them, to make public record of this official recognition.

Gifts and Bequests to Hospitals and Medical Colleges.—By the will of the late Morrill Wyman, Harvard University will receive $50,000 to be used to promote good citizenship, and one half of the residue of the estate, which is said to be large, to establish a fund, to be known as the Morrill Wyman Medical Research Fund, to provide for the study of the origin, results, prevention, and treatment of disease. A further sum of $50,000 will ultimately go to this fund. A fourth of the residue of the estate is left to the Massachusetts Institute of Technology.

By the will of Emily Scheetz the West Philadelphia Hospital for Women will receive $5,000 for the establishment of a memorial free bed.

Mortality Statistics of New York.—During the week ending February 14, 1914, there were 1,553 deaths and a death rate of 13.88 in 1,000 of the population reported, against 1,732 deaths and a rate of 16.82 for the corresponding week of 1913, a decrease in the absolute number of deaths of 179. The following causes showed an increased mortality: Measles, scarlet fever, diphtheria and organic heart diseases; typhoid fever and cerebrospinal meningitis were accredited with the same number of deaths as in the corresponding week of 1913. The following causes showed a decreased mortality: Whooping cough, influenza, bronchitis, lobar pneumonia, bronchopneumonia, pulmonary tuberculosis, other forms of tuberculous diseases, Bright's disease and nephritis, diseases of the nervous system and violence.

The number of deaths reported during the week of infants under one year of age was 226, which was 72 less than in 1913; the number of deaths of children under five years of age was 348, a decrease of 110 deaths; from five to sixty-five years there was a decrease of 54 deaths, and at sixty-five years and over a decrease of 15 deaths. The death rate for the first seven weeks of 1914 was 14.61 in 1,000 of the population, against a rate of 14.98 for the corresponding period of last year.

Examinations for Assistant Surgeons in the United States Public Health Service.—A board of commissioned medical officers will be convened to meet at the Bureau of Public Health Service, Washington, D. C., on Monday, March 9th, for the purpose of examining candidates for admission to the grade of assistant surgeon in the United States Public Health Service. Examinations will be held at other stations of the Service at a later date. Candidates must be between twenty-three and thirty-two years of age, must have graduated from a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character, one preferably being from a doctor of medicine. Service in hospitals for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work.

Candidates must be not less than five feet, four inches, nor more than six feet, two inches in height, with corresponding weight from 128 to 183 pounds. In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate and that they will serve wherever assigned to duty.

For invitation to appear before the board of examiners, and for further information regarding the scope of the examination, address the Surgeon General of the United States Public Health Service, Washington, D. C.

Pith of Progressive Literature.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT

December 4, 1913.

Pneumococcus Influenza.—Walb says, since the influenza epidemics of 1889-1890 and 1892, real cases of influenza have been rarely noticed. What is now generally designated as influenza is in reality a pneumococcus infection, which is distinguished from infection by the influenza bacillus by longer periods of incubation. Further, the onset and the course of the diseases are radically different. Infection with pneumococci shows no tendency to implicate other organs, except the respiratory apparatus, the nose and its sinus accessories, and the middle ear.

Early Diagnosis of Tabes and Tabes oligosymptomatica.—A. Austregesilo asserts that tabes in Brazil in respect to its frequency and onset cannot be differentiated from the type found in thickly populated countries of central Europe. The author recommends when suspecting tabes, combined neosalvarsan-mercury, and detailed physical treatment, beside physical therapy.

Pituitrin in the post partum Stage.—E. Vogt recommends the use of one half to one c. c. intramuscularly, or injected very slowly and carefully intravenously, with control of the pulse after delivery of the placenta, as a prophylactic in the prevention of atony, which more correctly expresses hypotonic hemorrhages. This procedure makes it possible to dispense with Credé's expression of the placenta in many more cases than heretofore. In the third stage of abortions and miscarriages, the injections are given with advantage. Contraindications are nephritis, arteriosclerosis, with an increase of a blood pressure to 140 or more, suspicious cases of coronary sclerosis, decompensating hearts.

Skin Diseases Caused by Hair and Fur Dyes.—A Blascho was able to show paraphenylendiamin, the use of which is forbidden by law, in acute localized inflammatory dermatic conditions on the face and neck occurring after the use of hair dye and after wearing freshly dyed furs. Patients who cannot dispense with hair dye are urged to use carefully the relatively harmless primal, which instead of paraphenylendiamin contains toluylendiamin substituted by sodium sulphite. Freshly dyed furs should be tested by rubbing paper over them to see if they leave color, that is, to see if they have been sufficiently washed. Dermatitis from this cause is treated with zinc liniment, later with zinc and bismuth paste.

Treatment of Gastric and Intestinal Hemorrhages, Particularly Typhoid Hemorrhages, with Tincture of Iodine.—Nottebaum finds that for controlling persistent diarrheas and intestinal hemorrhages, tincture of iodine, first recommended by English physicians, gives gratifying results. For acute cases, tincturæ iodi. one c. c., sodii iodidi 0.1 aquæ menthæ piperitæ, syrupi simplicis, aa 20.0 aquam ad 200.0; teaspoonful every hour or two. For chronic cases, tincturæ iodi, 2.0, tincturæ amaræ, 13.0; ten to fifteen drops before meals.

Rapid Healing of Sore Nipples.—Neubauer found that of all means to cure this condition the most rapid was a ten per cent. euguform salve (condensation product of guaiacol and formaldehyde).)

Curtailing the Further Spread of Tuberculosis.—F. Loeffler recapitulates Koch's belief that tuberculosis is spread by bacilli from a diseased person to a healthy one. Early diagnosis plays an important role for the prevention, which is most reliably done by tuberculin. All patients cannot be placed in institutions, and the results of tuberculin are not incontestable. The most hopeful treatment is specific with Koch's tuberculin, which is to be applied before serious disturbances have taken place. The author recommends the administration of tuberculin after the Wilkinson, London, so called "tuberculin dispensaries." Wilkinson begins with small doses of bovine tuberculin, then increases the dose and concludes with one to two c. c. old tuberculin. Sufferers in the first stages showed 100 per cent. healing five years after the treatment, those in the second stage, sixty to seventy per cent.

Reminiscences of the Tuberculosis Investigations of Robert Koch.—P. Ehrlich recalls Koch's discovery of Bacillus tuberculosis, the work connected with it, particularly in the field of staining where the lipoid capsule of the bacilli conditions their peculiar behavior, the preparation of tuberculin, and its use for diagnostic and therapeutic purposes, finally differentiation of the human and the bovine type. The author emphasizes the unfavorable prognostic meaning which the appearance of the diazo reaction has for the tuberculosis.

Time and Place of Infectious Diseases in the Light of Experimental Investigations.—H. Kössel says that Koch's experiments have changed our whole conception of infectious diseases. We no longer attribute to physical and chemical factors the occurrence of epidemics as in the days of Pettenkofer, but look for their causation in biology. Biological factors have advanced to the foreground since the discovery that insects are the means of transmitting disease from sick to well in certain epidemics. These are the anopheles in malaria, the stegomyia in yellow fever, the glossa palpalis in sleeping sickness, and fleas in the plague. It is evident that development of these intermediate carriers of disease, which determine to a certain extent the spread of the epidemic, is dependent upon seasonal and local influences (meteorological, climatic, soil conditions). Proof of the correctness of these conclusions has been given by Koch's sanitary regulations of the infected territory, which are simply experiments on a large scale.

Spread of Typhoid by Milk and Its Prevention.—B. Fischer says that Koch realized the danger of typhoid bacilli carriers and permanent carriers as a source of infection, and insisted on their rapid recognition, conscientious segregation, and thorough disinfection of excretions in the fight against the typhoid epidemic. Experiences gained in a series of epidemics in Schleswig-Holstein during the past few years have certified to the necessity of these measures, since infected foods, particularly milk, play an important part in the dissemination of the disease.

Chemotherapeutic Action of New Antimony Preparations in Spirochæta and Trypanosome Disease.—P. Uhlenhuth and G. Hügel bring to our attention a series of individual observations on the positive (or negative) results obtained with new antimony preparations, more particularly colloidal antimony, in chicken spirillosis and also in experimental dourine of mice.

Pulmonary Tuberculosis and Hydrotherapy. L. Brieger asserts that an orderly and carefully directed hydrotherapy in pure infections of tuberculosis has given good results in the incipient stages, which are often accompanied by neurasthenic symptoms. In mixed infections great caution should be exercised with cold stimulation.

December 18, 1913

Fifth Report on Behring's Diphtheria Vaccine.—K. Kissling's immunization experiments with the new Behring preparation MMI which was used, diluted five times, upon 310 patients, mostly children, showed that out of 111 patients vaccinated twice, none contracted diphtheria, out of 199 patients vaccinated only once, eight became infected; five of these, convalescents of scarlet, showed a markedly mild course of the diphtheria. The intracutaneous injection in the interscapular region was the most efficacious.

Pneumococcus Meningitis Healed by Intralumbar and Intraventricular Injection of Ethylhydrocuprein.—Wolff and Lehmann report the case of an infant, eight months old, weighing six kilograms, who received up to the time of cure fourteen injections 1.25 g. ethylhydrocuprein, of which 0.07 g. was given intraventricularly, 0.06 g. intralumbarly, and 1.12 g. subcutaneously without producing any untoward results.

Treatment of Bronchial Asthma and Emphysema with Lipoidiodin.—Steiner says lipoidiodin is a lipotrop and neurotrop distributed equably throughout the whole organism and is more effectual, in smaller and less frequent doses, than any other iodine preparation.

A Hitherto Unknown Myeloblast, the Bone Marrow (the Myelogonie), and True Leucemia (Myelogonie Leucemia).—S. Klein finds that not only in leucemic myelosis but also in other pathological and at times normal conditions, there is present in the blood and blood forming organs a certain cell which seems to correspond to the myeloblasts of Maximow and Mollier. These cells, whose nucleus resembles most closely the nucleus of a megacaryocyte, were found in varying percentages; in an acute myeloblast leucemia, eighty-five per cent. of all leucocytes. The myelogonien are to be regarded as the mother cells of all bone marrow cells. It is questionable whether they are the mother cells of lymphocytes.

December 25, 1913

Substitution of Radioactive Substances by Röntgen Rays in Deep Therapy.—Salzmann asserts that to intensify the action of Röntgen rays certain elements are made use of which send into the interior of the body characteristic secondary rays. Penetration of the secondary rays increases with increase of atomic weight; elements with atomic weight of 108 and over send out a hard and a soft bundle of rays. As certain experiments have shown, tubes with the hardness of nine to ten Wehnelt, and elements with atomic weight of from 107 to 120, particularly cadmium, attain good results. Metals used for so called resonators have the best action in a thickness of three to five mm.

New Method of Examining Cerebrospinal Fluid.—St. Szécsi obtained the following results when testing spinal fluid according to the oxydase reaction of Röhmann, Spitzer, F. Winkler and Schultze: The so called lymphocytes of the fluid gave a positive reaction; are therefore not real lymphocytes, but precursors of myeloid cells; in general the oxydase reaction is positive in dementia paralytica and tabes dorsalis, negative in acute inflammatory meningitides, lues cerebri, lues latens. Details of the reaction are minutely described.

Serodiagnosis of Malignant Disease.—K. Hara observes that the complement binding reaction was positive in about eighty-four per cent. of definite cases of cancer and the miostagmin reaction in seventy-five per cent. In one case which was positively cancerous, the miostagmin reaction was positive, while the complement binding reaction was negative.

Treatment of Chronic Obstipation with Peristaltin.—F. Ehrlich says that peristaltin, the glucosid of cascara sagrada, has proved a good and exceptionally mild cathartic given by mouth or subcutaneously. It is also effectual in overcoming postoperative intestinal paresis.

Menstruation in Climacterium.—S. Levy reports the case of a woman, aged seventy-eight, who always enjoyed good health, who lost her menses in the fifty-seventh year and then menstruated again regularly every four weeks from the seventy-second to the seventy-fifth year.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT.

December 9, 1913

Experimental Transference of Tumors upon the Eye.—C. A. Hagner says the eye (lens) is eminently fitted for experimental transference of tumors. Tumors of the same species which have passed through one or two animals "take" regularly with great vehemence, and lead to extensive metastatic formation. Experiments with tumors of different species gave positive results in a series of cases (mice tumors transferred upon eyes of rats). In one case a human sarcoma was successfully transplanted into the eye of a rat. In other cases resorption occurred after incipient tissue development.

Gold Reaction in Spinal Fluid.—H. Eicke gives a detailed description of C. Langesche's gold reaction—spinal fluid changed by inflammatory conditions precipitates colloidal gold, which is easily discernible by change in color of the original purple red of the gold solution. Precipitation of gold salts takes place in a manner characteristic of the inflammatory process; the maximum does not correspond to the strongest concentration of gold solusion, but to a certain point of the dilution series. The maximum for cerebral lues is found in dilution of one to seventy to one to eighty, in tubercu-

lous and purulent meningitis in a dilution of one to 320. The gold reaction is an important contribution to spinal fluid reactions.

Painful Nerve Points of Cornelius and Swedish Massage.—K. Post says there is a remarkable relation between the teachings of Swedish massage, whose chief purpose lies in detection and removal of tender pressure spots, and the painful nerve points of Cornelius. This coincidence shows that the findings of Cornelius and their significance are not deceptive, but that we have here important clinical and therapeutical discoveries.

Nervous Fever in Tabes dorsalis.—R. Siegrist reports a case of tabes dorsalis in which gastric crises and rise of temperature were evidently caused by nothing more than tabetic disease. Irritation of heat regulating centres or resorption of toxic substances was probably the actual cause.

December 16, 191

Situs inversus totalis.—Brix cites this case as being remarkable, for there was pain in the right half of the abdomen and symptoms of peritonitis. Laparotomy for appendicitis was performed, and only then was misplacement of the organs discovered.

Blood Content of Substrate in Testing Dialysis Procedure.—E. Abderhalden emphasizes the importance of complete removal of blood from the tissues for accuracy of result in dialysis. A whole series of cases gave split products from blood, while the absolute blood free tissues showed a negative reaction. No doubt this is not a specific organ reaction, but depends on hydrolysis of blood components by splitting up ferments of the serum against blood corpuscles. These sources of error can be avoided most readily by removal of the blood. The serum of a patient is used that has a blood disease, or of a patient who has been operated upon.

Serodiagnosis of Malignant Tumors.—C. Fried's results with Dungeric's reaction have given important results in a large percentage of cases, but also in cases with no tumors. Luetics gave a positive reaction in more than one half of cases. Abderhalden's dialysis gave a positive reaction in twenty-one out of twenty-seven tumor cases (77.8 per cent.) and five negative (18.51 per cent). From eighteen nontumor cases four (22.2 per cent.) gave a positive result. Thirteen (72.2 per cent.) were negative. The reaction is extraordinarily difficult.

Therapeutic Use of Camphor, Particularly in Pneumonia.—M. Hötzel, by systematic injections of ten c. c. of oleum camphoratum forte twice daily, found that pneumonia runs a considerably shortened course. With this treatment the crisis occurs on the third or fourth day and is very rapid. The action of the drug seems to be specific.

December 23, 191

Thymus, Ovaries, and Blood Picture.—F. Heimann says that thymus and ovaries act antagonistically in regard to their inner secretory function on the blood picture, i. e., on the number of lymphocytes and in such a way that the thymus adds substances to the blood which stimulate lymphocytosis, while the ovaries produce substances which diminish the number of lymphocytes. Four experimental investigations here described and corresponding clinical observations are fully corroborated.

Simple Artificial Noses.—Herzenknecht makes a few remarks on the article of Zinsser in No. 49 of the *Münchener medizinische Wochenschrift* (compare *Deutsche medizinische Wochenschrift I*, 1914), and points out that Cathcart, the Edinburgh surgeon, in 1885 published a method for the formation of parts of the body which is identical with Henning's method. Use of so called hard gelatin (*Gelatin Höchst*) is recommended for making artificial noses, as capable of forming hard and durable nose substitutes.

Surgical Treatment of Tuberculous Pleural Exudates.—L. Spengler and F. Sauerbruch state, that in tuberculous pleural exudates with large areas in the lungs, partial removal of exudate with corresponding refilling with nitrogen is advisable. Infected pus exudates indicate just as nontuberculous empyemas do, opening of the chest at the earliest possible period and removal of pus and drainage. Pus exudates sometimes appear in the course of pneumococcus treatment, and must be treated conservatively by puncture and replacement with nitrogen. When communication between pleural cavity and lung is present, a more active procedure is indicated against the infected exudate (resection of the ribs). Breaking into the cavern is particularly dangerous in an artificial pneumothorax. In a few severe cases, improvement and later healing took place by extensive extrapleural thoracoplasty, at first in the lower and later in the upper part of the chest.

Stricture of Ureters which Simulated Nephrolithiasis.—Baar relates a case of gonorrheal pyelitis and stricture of the ureter accompanied by attacks of colicky pains in the right lumbar region simulating the presence of nephrolithiasis. The author succeeded by systematic kidney catheterization and irrigation of the kidney pelvis with a one to two per cent. silver nitrate solution, in healing the pyelitis and diminishing the kidney colic. A concise review of different kinds of strictures completes the article.

Specificity of Abderhalden's Splitting Up Ferments.—W. Mayer's experiments show an absolute organ specificity of Abderhalden's splitting up ferments; the results encourage the use of organs of the same and of different species for clinical diagnosis. Formation of ferments in the organism requires a certain time, in the experiments reported, four to seven days. The possibility of neglecting the presence of ferments, even though present in small quantities, was not proved by this experiment.

Elarson.—Tuszewski says that elarson (strontium chlorarsenobehenolate) is a palatable and digestible arsenic preparation suitable for convenient doses. It has been successfully used as a tonic in combination with iron, in secondary anemias and chlorosis. Dose for children daily is one to three tablets of one half mg. each, for women up to sixteen tablets per diem, and for men to twenty tablets. Even after the largest doses no irritating effects upon stomach or intestines were observed.

Serum of Patient as a Salvarsan Vehicle.—Schubert used serum of the patient as a solvent for neosalvarsan and an intravenous or intramuscular injection is well borne. The solubility of neosalvarsan in serum is very great. In one c. c. of serum at least 0.15 neosalvarsan can be dissolved.

Shoulder Pain in Pleurisy.—Gerhardt observed the isolated shoulder pain in pleurisy in four cases, in a very marked degree. Every one had a basal pleurisy. At some time or other the patient complained of pain in the region of the diaphragm; three times the phrenic nerve was sensitive to pressure. This sensitiveness of the nerve confirms the belief that the isolated pain in the shoulder is radiating pain in one of the fibres of the phrenic nerve.

Critic of the Modern Electrical Reduction of Obesity.—Roemheld says that Bergonization is a form of passive muscular activity, a substitute for active bodily movements which may aid in the reduction of obesity. Bergonization alone does not produce reduction to any extent. Loss of weight sets in only when the patient is placed on proper diet. In some cases no effect whatever is produced on body weight by this electrical treatment. Reduction obtained by Bergonization, which is at best only a slight one, is due partly to decrease in weight by perspiration, partly to real fat consumption, and is accompanied by proteid deposit. The most important indication for its application is not obesity, but peripheral muscular exercise in the most diverse asthenic conditions.

Forgotten Obstetrical Procedure.—Gräf recommends compression of the aorta for ten to fifteen minutes in severe post partum hemorrhage due to atony of the uterus. If the pressure is removed after this period, hemorrhage stops spontaneously. This procedure dates back to the middle of the last century and was first proposed by Ulsamer, a Württemburg physician.

LYON MÉDICAL.

January 4, 1914

Ventricular Pauses and Vertigo in Stokes-Adams Disease.—L. Gallavardin, on the basis of electrocardiagraphic studies, establishes a clear distinction between total or partial heartblock, due to disturbed auriculoventricular conduction frequently giving rise to no symptoms, and the prolonged ventricular pauses occurring at times in Stokes-Adams disease and giving rise to spells of vertigo, syncope, and convulsive manifestations. These pauses he ascribes to disturbed conduction of impulses to the ventricular muscle at large from the automatic or independent nodal centre in the ventricle. The Stokes-Adams syndrome is thus to be regarded not as a necessary terminal phase of impaired auriculoventricular conduction, but as a complication of this condition. The frequency with which this complication occurs is accounted for by the proximity of the auriculoventricular and automatic ventricular mechanisms and their consequent ready subjection to similar deleterious influences. The essential independence of the two conditions accounts for the frequently observed and clinically disconcerting cases of partial or complete heartblock unaccompanied by any symptoms.

PARIS MÉDICAL.

January 17, 1914

Gymnastics of the Stomach.—P. Carnot and R. Glénard present a description of the simplest and at the same time most effectual static and kinetic procedures available for correcting abnormal positions of the stomach and increasing by a species of training its motor activity. Assumption of the dorsal decubitus after meals sometimes brings relief in gastric disorders. More effectual in gastroptosis, however, is the knee-chest posture, which should be assumed for fifteen minutes after meals, and also on retiring; in conjunction with a reduced diet and the wearing of an abdominal support this measure often leads to remarkable improvement. Lying on the left side after leaving the knee-chest posture favors gastric digestion. After three or four hours, the patient should then, whenever practicable, lie on the right side, this position favoring evacuation of the stomach. Kinetic training of the stomach includes exogastric procedures, such as alternate flexion and extension of the trunk, pushing efforts, respiratory gymnastics, etc., tending to cause marked alternate increase and diminution of endogastric pressure; and endogastric procedures, such as alternate inflation and deflation with oxygen through a tube, three times a minute; ingestion of hot saline fluids in the morning, and the author's plan of "pilular percussion." The patient ingests some iron or bismuth pills on an empty stomach and executes brisk jumping movements which bring the pills in sudden contact with the dependent portion of the stomach, causing the muscle to contract. Improvement in gastric motility was readily obtained through the use of these various procedures.

PRESSE MÉDICALE

January 17, 1914.

Local Anesthesia in Colpoperineorrhaphy.—L. Kendirdjy asserts that local anesthesia in this operation presents the advantages of absolute safety, bloodlessness of tissues, and especial facility of dissection of the mucosa, owing to the previous separation of the natural tissue layers by the fluid injected. The solution he employs consists of novocaine, 0.5 gram, epinephrine, twenty-five drops, and normal saline, 100 c. c. A large tampon dipped in the anesthetic solution is first introduced into the vagina. Injection of the anterior wall is then begun; the first, and only painful introduction of the curved needle being made a short distance below the urinary meatus, in the midline. Repeated injections are made, first on one side, then the other, beneath the mucous membrane, which is raised above the normal level and becomes pale. Next, the margins of the vaginal orifice are injected, in the form of a horseshoe, beginning in front of the anus; after this, the fluid is slowly injected with a straight needle under the mucosa of the posterior vaginal wall and that of the adjoining portions of the lateral walls, forceps being used where necessary, to facilitate introduction of the needle; and finally, injections are made backward, downward and outward around and in the substance of the levator ani of each side. In operat-

ing, care is to be taken to include the submucous tissues within the sutures. This procedure has been employed by the author in about twenty cases, with uniform success. The time of operation is shortened, all danger of entering the rectum is avoided, and the use of the knife and scissors is much reduced, a gauze compress almost always being sufficient to separate the tissues.

Clinical Significance of the Diastolic Blood Pressure.—C. Lian, discussing this subject in great detail, points out that where the systolic pressure is high, a high diastolic pressure practically excludes aortic insufficiency, whereas a subnormal diastolic pressure is a strong indication of its presence. Prognosis is always bad where the diastolic pressure is considerably above normal. Diastolic pressure is of far greater prognostic importance than systolic. A subnormal systolic pressure, with diastolic pressure relatively still lower, strongly suggests aortic insufficiency. Improvement in the sphygmomanometric formula involves not only a return of systolic and diastolic pressures toward normal, but return of these pressures to the normal mutual relation or ratio. Such twofold improvement implies a betterment not only in the disease causing hypertension or hypotension but also in the cardiac insufficiency which frequently coexists. Variations in the ratio of systolic to diastolic pressures are particularly significant, however, as regards the cardiac condition *per se*.

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Apparatus for Treatment of Fracture of Humerus.—G. Pascalis describes an improved form of a splint used with success in the Balkan war in the treatment of humeral fractures, especially those of the surgical neck, with outward displacement of the upper fragment. The apparatus consists of wire splints bent and joined together to form a triangle, to one side of which is attached by one of its limbs a larger, wooden L shaped splint, adjustable at the angle of the L. The wire triangle is padded and fixed to the thorax by a few turns of bandage, in such a position that, with its apex in the axilla, it holds the arm in partial abduction. The free limb of the wooden L is intended to support the forearm. The apparatus is simple, inexpensive, readily applied, permits of frequent dressing and early massage without displacing the fragments, and is exceptionally comfortable for the patient. The author also describes a weight and pulley mechanical device for maintaining extension of the arm where the fragments override.

REVUE MÉDICALE DE LA SUISSE ROMANDE

December, 1913.

Bacteriological Study of Febrile or Septic Abortion.—C. Waegeli refers to the recent tendency to abolish distinctions between post abortional sapremia and septicemia from the bacteriological standpoint, Hamm having shown that but few—and these relatively unimportant—organisms are not in more or less numerous instances met with in the blood in febrile abortion. Römer, moreover, found bacteria, aerobic or anaerobic, in ninety-five per cent. of a series of 171 cases of this nature. Although repeated blood examinations showed that the best time for finding organisms in the blood is immediately after operative evacuation of the uterus, less than one half of the cases thus dealt with manifested one or more chills after the intervention. On the whole, bacteriological examination of the uterine discharge alone cannot be said to yield precise indications for the treatment of febrile abortion, but it has been learned that the hemolytic streptococci are far more dangerous than other organisms. Bacteriemia *per se* is not necessarily of evil portent, for nearly all cases overcome the invading organisms. The finding of hemolytic streptococci, however, necessitates a guarded prognosis. Anaerobic cultures are essential in the bacteriological diagnosis.

Severe Jaundice after Injections of Salvarsan.—E. Giradet reports the case of a man, aged thirty-two years, in whom a first injection of 0.5 gram of salvarsan was followed by severe headache, backache, vomiting, diarrhea, and motor weakness, all of which had disappeared by the next day. A second injection of 0.6 gram, given six days after the first, at first seemed well borne; but on the following day there appeared similar symptoms, together with fever and pains throughout the body. Twenty-four hours later signs of oncoming jaundice were observed, and eight days after the second injection, marked icteric hue had appeared. Treatment proved utterly unavailing, the jaundice persisting eight months. The stools were white, the urine discolored. The body weight fell rapidly from eighty to fifty-eight kilograms and the hemoglobin to sixty per cent. The liver was at first slightly enlarged, then subnormal in size, but at no time tender. Urine gave evidence of acute nephritis lasting two months.

BRITISH MEDICAL JOURNAL.

[illegible]

Two Years' Operating by the Clock.—John O'Conor assumes that, other things being equal, success of a serious surgical operation is in direct ratio to its rapidity. Quick operating must be combined with conscientious and painstaking workmanship, and adequate removal of the source of trouble is an essential requisite. O'Conor's operative technic is thorough and provides ample protection from secondary infection of the peritoneum through soiling in infected cases. After all reasonable precautions were observed his figures for the average duration of operations are striking. The average time needed in fifty Halstead operations for radical cure of inguinal hernia was fourteen and six tenths minutes, with a maximum of twenty-seven, and a minimum of eight minutes. Six cases of ventral hernia were cured by operations lasting on the average sixteen and three tenths minutes each. The average for appendectomy in thirty-nine cases where there was no suppuration was eleven and seven tenths minutes. Twenty-three cases of suppurative appendicitis with or without peritonitis required an average of seventeen and eight tenths minutes to the case. Eleven cholecystectomies required an average of fifteen and seven tenths minutes. Thirteen hydatid cysts of the liver were mar-

supialized in an average of thirteen minutes. Salpingo-oophorectomy, hysteropexy, and appendectomy were performed on ten patients with an average of seventeen and seven tenths minutes. Twelve cases of abdominal hysterectomy required an average of thirty-one minutes. A number of posterior gastrojejunostomies took about half a minute more per case. Thirteen minutes was the average required for a dozen cases of nephropexy. Six suprapubic prostatectomies were done in an average of six minutes. Six breast amputations by the Halstead method took thirty-three minutes apiece. The author gives many other operations and their time; in fact he records the results of his total experience for two years. Many of the averages seem very small, yet it must be borne in mind that results are fully equal to the average so far as ultimate recovery and rapidity of convalescence are concerned.

General Symptoms in Hemoglobinemia.—J. O. Wakelin Barratt and Warrington Yorke washed the red cells from normal rabbits' blood, laked them with distilled water, added enough solid sodium chloride to make the solution physiological, and separated the resulting fluid into three parts. The first contained dissolved hemoglobin and red cell stromata; the second hemoglobin free from stromata; the third both hemoglobin and stromata, the former in only about half the concentration as in the first liquid. Injected into normal rabbits, death or severe symptoms resulted almost always from the first and third fluids, but the second was not productive of symptoms. There was no constant relation between severity of symptoms and size of dose of the first and third fluids, and it is suggested that the symptoms may possibly have been of mechanical origin. These fluids also had some tendency to delay the coagulation of blood, but it was not constant. Where there was such a delay there might have been intravascular liberation of fibrin, but this was also an inconstant phenomenon. It is probable that the symptoms or deaths were due to emboli arising from clumping of the cell stromata when they came into contact with normal serum of injected rabbits. This belief was not proved by any satisfactory post mortem evidence.

Functions of the Colon; Movements of Enemata.—Hamilton Drummond cites animal experiments to show that fluid introduced into the rectum may pass into the small intestine, and even into the stomach. He quotes observations of others on man that fluids given by rectum may reach the cecum, and presents his own made on patients with fecal fistulæ in the lower portions of the small intestine and on many other patients by means of bismuth or barium meals and the fluoroscope. He finds that fluid passes into the cecum readily after the injection of between one and two pints by rectum at a pressure of one and a half foot of water. Fluid usually begins to reach the cecum in about ten minutes after injection. There is resistance to the passage of fluid at the junction of rectum and sigmoid, and at the splenic flexure. Mechanism of the passage of fluid backward is not yet determined, but there is some evidence that the process is purely hydrostatic in man and not due to reversed peristalsis. In recent ileocolostomy cases fluid passes up the colon as usual, while in old cases fluid is found to pass into the small intestine.

LANCET

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Present Position of Acute Appendicitis.—Hugh Lett gives some very interesting statistics with regard to mortality from this disease under operative methods of ten years ago, when it was customary to wait as long as possible before operating, and contrasts them with similar statistics under the present methods of operating at the earliest possible moment. Figures in each instance are from an unselected series of 1,000 consecutive cases. Ten years ago operation in the quiescent stage gave a mortality of one and one tenth per cent. compared with seven tenths of one per cent. at the present day. Abscess cases formerly had a death rate of eight and one tenth per cent., while in the later series they have only three and three tenths per cent. Previously there was a mortality of seventy-six and five tenths per cent. in cases with general peritonitis, in strong contrast with the present figure of twenty per cent. Other acute cases formerly resulted fatally in the proportion of fifteen per cent., whereas they now show only one and seven tenths per cent. of deaths. Grouping all cases of each thousand together, the total mortality rate ten years ago was seventeen and two tenths per cent. against the present figure of three and two tenths per cent. Further illustration of the importance of immediate operation is afforded by the facts, that of 162 patients operated upon within the first twenty-four hours of their attack only two died (one and two tenths per cent.); that of 152 operated upon in the second twenty-four hours of their attack, three and nine tenths per cent., or six patients, succumbed; and that of 115 whose operation was delayed to the third day, ten died, or eight and seven tenths per cent. Lett also goes into some detail in relation to the frequency of several complications and shows that here also delay materially increases the likelihood of their occurrence as well as their gravity.

Percutaneous Tuberculin Reaction.—A. J. Bruce Leckie has made the test in 400 cases and comes to the following conclusions: "1. The ointment test is exceedingly inaccurate. 2. It does not give nearly so many reactions in nontuberculous cases as the von Pirquet test. 3. Most reactions are obtained in women and children. 4. It is of no value in prognosis. 5. It more often fails in tuberculous cases than the cutaneous reaction. 6. Late reactions have no clinical significance. 7. Tuberculous cases which respond to the ointment also react to the von Pirquet method. 8. Pyrexia does not interfere with the reaction. 9. The test is free from danger."

Acute Tetanus with Recovery.—V. E. Negus's patient was a healthy young man aged nineteen years, who developed symptoms of tetanus eight days after a compound fracture of both bones in one of his legs. Essential points in treatment were frequent large doses of antitoxin, given intravenously, subcutaneously, injected about the sciatic nerve through which infection occurred, and also

intraspinally, A total of sixty-seven c. c. of antitoxin were given. In adition to antitoxin the patient was kept more or less completely under the influence of large doses of hypnotics; as much as a dram of chloral hydrate was given every four hours to restrain spasms, and thirty-four drams of paraldehyde were administered in four days. Other hypnotics were also employed. Besides it was deemed advisable to remove the original site of infection, and the leg was amputated above the knee. Total duration of the patient's illness, including a final operation for removal of a portion of the projecting end of the femur, was less than eight weeks. Diagnosis of tetanus was established by the symptoms, isolation and cultivation of the organisms from the wound, and by infection of experimental animals.

Vaccines from the Standpoint of the Physician.—Thomas J. Horder believes that the growing popularity of vaccine therapy is not an indication of its utility, but, rather, is due to desire on the part of the doctor not to be left behind, and to demand for vaccine treatment on the part of patients. He argues strongly against the use of any but autogenous vaccines, and especially inveighs against mixed vaccines, the use of which, he says, is quite as bad as failure to make a correct bacteriological diagnosis. This latter he considers the crucial point in the use of vaccines. Diagnosis cannot be made without the greatest care and the cooperation of a competent bacteriologist. It must be borne in mind that all other factors available for treatment of the patient must be employed along with the vaccines. Of these, perhaps the most important are securing and maintenance of free drainage, and the raising of the patient's general health.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

December 1, 1913.

Salvarsan in Filariasis.—E. R. Branch, in treating nineteen cases of filiariasis with salvarsan at St. Kitts, W. I., found the following results especially noteworthy: 1, Disappearance of the microfilariæ from the blood after treatment; 2, arrest of the febrile attacks; 3, healing of ulcers, often of very chronic and indolent nature, and of large size; 4, reduction, to the extent of many inches in some cases, in the circumference of elephantoid limbs, slight swellings, in fact, entirely disappearing in some instances; 5, notable improvement in the general health. In two cases recurrence was noted. In one of these, a severe case, no filariæ had been found for three months after the first injection; since the second injection, there had been no further filarial attack for four months. It is to be borne in mind that where filariasis is endemic there is constant liability to recurrence from fresh invasions of the parasites.

December 15, 1913.

Pyosis tropica.—A. J. Chalmers and W. R. O'Farrell report from Khartum two cases of pyosis tropica, a nonfollicular staphylococcal skin disease first differentiated by Castellani. One patient was European and the other a native. The microorganism responsible resembles the *Micrococcus pyogenes* variety *aureus*, but is peculiar in that it does not ferment mannite, though fermenting levulose and galactose. It is easily removable with an autogenous vaccine. For this organism the authors propose the appellation *M. pyogenes* var. *tropicus*. The infection, apparently fostered by slight local traumatism or any other condition reducing local vitality, e. g., an attack of prickly heat, appears first as small, reddish papules, which rapidly become papulovesicles and pustules, usually encircled by a zone of hyperemia. The lesions are related neither to the hair follicles nor, probably, to the sweat glands. The small pustules coalesce and, bursting, give rise to a serous exudate which, allowed to dry, forms highly characteristic yellow crusts. On removal of the latter, irregular superficial ulcers are laid bare. The eruption occurs most commonly on the legs, next on the arms, and but rarely over the body; the palms are not invaded. The treatment, which is highly effective when actively carried out, consists in removing the crusts with warm boric fomentations, cleansing the sores with a lotion of one in 1,000 mercury bichloride, applying a one per cent. phenol ointment, and dressing twice daily. Meantime an autogenous vaccine is prepared, and 250 million cocci administered every third day, opsonic control being availed of when necessary.

Vagrant Habits of Ascaris lumbricoides.—T. S. Tirúmurti states that the possibility of perforation of the normal elimentary canal by ascaris is doubted, as the parasite is not provided with any form of boring apparatus. Rarely the parasite passes through small orifices leading from the alimentary canal, e. g., into the appendix or through the ampulla of Vater into the common bile duct and gallbladder. The author has found in literature, however, no case similar to one recently under his observation. A Hindu girl, aged 12 years, died of kala azar, with pneumonia as a terminal manifestation. At autopsy, the liver, kidneys, and especially the spleen, were found enlarged. The bile duct had five roundworms distending it. Many had traveled up the smaller bile ducts, one of them nearly to the summit of the dome of the right hepatic lobe, near the posterior margin. Cut surfaces of the worms, and of several soft irregular gallstones, were found in the sections of the liver. The parasites must have traveled up the ducts long before death, causing some obstruction to the flow of bile and leading to the formation of calculi. No history of symptoms referable to the verminous infection of the liver or to the numerous calculi, however, was obtained.

BOSTON MEDICAL AND SURGICAL JOURNAL.

February 5, 1914.

Chronic Malarial Cachexia and Neurasthenoid Conditions.—Curran Pope compares the mental and nervous symptoms of chronic malarial cachexia that resemble those of neurasthenia, with the latter condition and draws a differential diagnosis. While the toxemia of malaria produces many mental and nervous symptoms, these are not, in the modern sense, neurasthenic. The points of differentiation are: Symptoms of true neurasthenia are, as a rule, worse in the morning, instead of in the afternoon; they are more of fatigue, irritative type, and intenser than those of chronic malarial cachexia. Malarial cachexia is associated with prominent abdominal symptoms, such as

a protuberant and distended abdomen, enlarged spleen and liver, which are rarely present in cases of true neurasthenia. Malarial poisoning is associated with a cachexial appearance, color, and reaction of the skin, with emaciation, all of which are absent in neurasthenia. The laboratory findings in malarial poisoning may not be pathognomonic and yet suggestive. The urine is usually diminished in quantity, highly acid, often shows a trace of albumin, urobiligen, and indican, and frequently contains casts and cylindroids. The blood shows a high degree of anemia, and the white cells often contain pigment. Gastric analysis usually reveals either a decrease or an increase of the acid content. Treatment of the cachexia, including physiotherapeutic and medicinal methods, is then taken up, and its purpose outlined: 1, To increase the general neural and vital resistance; 2, to increase the hemoglobin, the corpuscular richness and leucocytal activity of the blood, thus overcoming anemia; 3, to destroy parasites if at any time they should be present or become active; 4, to increase the elimination of toxins; 5, to stimulate normal metabolic changes; 6, to overcome the neurasthenoid state. These patients require time, care, and attention, but when they receive these, brilliant results follow. It seems that a certain number of patients possess peculiar sensitiveness to malarial poisoning and have a tendency to develop the cachexia. He advises such persons to remove to a nonmalarial district, and, if this does not suffice, they should be given iron, quinine and arsenic hypodermically, together with hydrotherapeutic treatment, for a number of months, until the tendency has been entirely eradicated.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

February 7, 1914.

Air as a Vehicle of Infection.—C. V. Chapin remarks that, until a very recent period, air has been considered the chief vehicle of infection. Now a great change has taken place in the attitude of scientific men toward the theory of aerial infection. Many diseases formerly considered air borne have been shown to be invariably transmitted in other ways, and in others infection by air has been shown much less important than was formerly believed. In setting forth present day facts and ideas the author follows in a general way the course of their discovery and development. One of the most interesting changes in our conception of the air as a bearer of infection concerns aseptic surgery. The fact that numerous living pus forming bacteria floating in the air fail to infect when falling on the fertile soil of freshly cut tissues or exposed peritoneum should make us scrutinize closely the belief that pathogenic bacteria, more sparsely distributed still, can run the gauntlet of the respiratory passages and penetrate mucous surfaces, or reach and infect pulmonary alveoli, or pass thence into the blood stream. It is not the mere presence of germs, but their quantity which counts. Summarizing, there is little evidence that, among diseases which commonly occupy our attention in this part of the world, aerial transmission is a factor of importance; in most it is, under ordinary conditions of home and hospital, a negligible factor. In tuberculosis alone is there evidence that airborne infection is a factor of importance, but the last word has not been said as to its etiology. The sewer gas bogey is laid, the notion that dust is a dangerous vehicle of every day infection is unsupported, and mouth spray is usually effective only at short distances.

Serum Reaction in Diagnosis of Cancer.—O. Lowy describes this test; the principle is that of Abderhalden's test for pregnancy. The reaction depends on the presence of a specific ferment which has the power of digesting its corresponding albumin, and the cancer albumin is obtained by cutting up pieces of carcinoma of the breast and boiling them for half an hour. He has examined the serums of sixty-one patients, nineteen of whom were suffering from carcinoma and the others from diabetes, syphilis, and various other affections; even with this limited number of tests and in their primitive state, he has found a proteolytic ferment in the blood of cancer patients; all cancer cases giving a positive reaction. Whether or not this ferment is specific and constant he is unable to say at the present time. An analysis shows that in at least three undoubted cases of cancer, in which the patients had been operated upon, the reactions were negative after a lapse of years; which would indicate that with the removal of cancer the specific ferment is not needed in the blood, and disappears. The author thinks we should be justified in using this test for obscure stomach cases, and if it should prove of specific value, periodical examination of women approaching the menopause would be the means of saving many lives.

Röntgen Analysis of Gastrointestinal Tract in Functional Nervous Disorders.—L. P. Clark and A. H. Busby state that they have tested only genuine epilepsy in order that the nervous type of disorder may be exact and without question. Röntgen findings in ten cases are described, and study of these shows that in all some abnormal position of various parts of the gastrointestinal tract was present. Their conclusion is that Röntgen analysis of the defective digestive tract of epileptics is of diagnostic and therapeutic value, an excellent supplement to chemical and bacteriological tests already in use, and prominent in any comprehensive hygienic treatment of a stubborn nervous disorder.

Dialyzable Products Reacting to Abderhalden's Ninhydrin in the Urine of Pregnant Women.—L. M. Warfield found the results of Abderhalden's test very contradictory. It occurred to him that if there were a specific ferment in the blood serum which was elaborated to split up products derived from the placenta, syncytium especially, there should be, in the blood waste, products of metabolic activity of the growing fetus. These substances leave the body by some route, and the most logical route was the urine. These products must be peptones and aminoacids, they should dialyze out, and should then be found by the nynhydrin reaction in the dialysate. Such is actually the case. Only seventeen cases are reported, owing to scantiness of available material, but the author hopes that large obstetric clinics will follow out the lead he has suggested.

MEDICAL RECORD.

February 7, 1914.

Retrodisplacements of the Uterus.—W. M. Polk says that, given favorable conditions, the most serious cases can be cured by pessary. Of course, the uterus must be movable; if adherent, it should be freed through posterior vaginal incision, immediately after which the pessary should be fitted. An important element of cure by pessary is proper involution of the uterus. Whatever exists as a hindrance to this must be removed before satisfactory results can be obtained. The pessary must have a resting place, making obligatory the thorough repair of a ruptured or chronically relaxed pelvic floor. If the pessary fails, operation is called for. Analysis of displacements shows that the cervical setting of the uterus is lowered and carried forward by downward and forward movement of front sections of the floor. Correct this, and you strike at the root of the difficulty. Technic is as follows: Thrust the extended fingers into the cul-de-sac, push the uterus forward and upward, locate the uterine artery, pass a suture from before backward, a finger's breadth above the artery and half an inch from the uterus, so as to emerge from half to three quarters of an inch from the uterus, just below the uterosacral folds. Return over this fold through the intervening tissues, about quarter of an inch above the point of entry, alongside the uterus. For anchorage carry this end of the suture through the anterolateral face of the cervical tissue, and tie. At least two sutures should be used on each side.

Etiology of Mental Torticollis.—L. P. Clark remarks the enormous significance of mental disorders in a close study of infantile life. In resolving the tic movement into simpler terms of origin, it has struck him that nearly every case of tic is only a further elaboration of habit movement which still endures as a symbol of the individual's real psyche. He confines his remarks to a particular type of tic, usually designated as mental torticollis, and describes with great minuteness an instance. In summarizing he says that we have here a case of torticollis of the tic type which seems to have been precipitated by the character of the patient's work, but which has its essential origin in an infantile, pleasurable stroking movement started by the mother and continued until her death, when the patient was eight years old, which, on entering school and continued through adolescent and adult life, was brought into conscious life, when he strove to break himself of the habit. Then the head developed a symbol of fragment mechanism, continued after the hand had ceased to cooperate. From a psychosynthetic point of view, the author holds that these various trends or fragments in psychic development of the tic would make, when chronologically arranged, a fairly understandable mosaic pattern, the neurotic centre of which is largely conditioned by an abnormal sexual development. In concluding, he says that modern analysis of tics and habit movements proves that the two are at bottom essentially alike in genesis, that they are a large class of obsessive neuroses and should be treated as such.

Correction of Deformities of the Nose.—W. W. Carter divides nasal deformities into two classes: 1, Those without loss of tissue, and, 2, those in which there has been more or less destruction of bony and cartilaginous tissue. He describes operations appropriate to each, the bridge splint in the first and bone transplantation in the second. In regard to the latter he says: 1. Bone transplants, whether covered with periosteum or not, when free in the tissues and having no connection with living periosteum, probably promote bone growth, the osteoblasts contained in the transplant taking part in the process. 2. Bone transplants not covered by periosteum, when connected with live periosteum, are osteoconductive and osteogenetic. 3. Periosteum covered transplants are osteogenetic when they are in contact with live periosteum.

Hypophyseal Disease Related to Diabetes insipidus.—D. B. Jewett cites considerable experimental and pathological evidence which, he believes, certainly links disturbances of the pituitary gland closely with dyspituitarism discussed in textbooks under diabetes insipidus. Two cases reported were diagnosticated by the author and several others as diabetes insipidus until they were studied from the standpoint of pituitary disturbance. The first case suggested anterior lobe insufficiency. The second had symptoms, obesity, increased carbohydrate tolerance, etc., usually associated with posterior lobe insufficiency.

SOUTHERN MEDICAL JOURNAL.

December, 1913.

Shock: Its Nature and Management.—F. W. Parham expresses the opinion that the vasmotor exhaustion theory has not by any means been disproved, though some further experimentation is demanded to establish it firmly. In regard to the management of shock he treats first of prevention, stating that, while in emergency surgery no time is to be lost, in elective operations every possible means of diagnosis and methods of preoperative preparation should be resorted to. When shock has appeared in spite of efforts, he strongly advocates the methods of Crile; mentioning cessation of manipulations, withdrawal of the anesthetic, elevation of foot of table, morphine to quiet the irritated centres, with atropine to block inhibition at the heart (especially if adrenalin has been actively used), salt solution intravenously with adrenalin continuously, pituitrin and ernutin subcutaneously or per rectum, and, above all, in extreme shock, direct transfusion of blood and mechanical pressure by bandaging the extremities.

The Cancer Problem.—W. A. Bryan speaks of four phases of the problem: 1. To settle definitely the cause of cancer. 2. To accept our ignorance of the cause of cancer in its present state and make our diagnosis of it sufficiently early to admit of its complete eradication in an increasing proportion of cases. 3. The physician shall deal altogether honestly with his patient and apply the correct treatment, or, if he is not qualified to do this, send him at once to one who is qualified. 4. The laity must learn that the successful treatment of one form of cancer, or of cancer in one organ or tissue, is no proof, or even argument, that another form of cancer, or one situated in a different structure, would be benefited by such treatment. The treatment of

this subject has now a twofold aspect, namely, by putting certain demands on the profession who assume responsibility for the lives of their patients, and by forcing upon the patients the necesssity of informing themselves of certain facts which may easily reduce the annual number of those who are justly adjudged inoperable or incurable and are forced gradually to die one of the most loathsome of deaths.

In How Far Has the Doctrine of Cleanliness and Public Health Permeated the Medical Profession?—C. W. Stiles states that this question is asked in good faith. Cleanliness, he says, is at the very root of public health conditions. American medical societies have of late years been passing numerous resolutions endorsing health legislation, and it may therefore be assumed that they are prepared to set to the laity a proper example in cleanliness. He then cites a number of instances, recently observed, which go to show that the rank and file of the profession is not setting a proper example, and from these is forced to conclude that there are in practice a not inconsiderable number of physicians who have exceedingly elementary ideas on the subject of cleanliness.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY AND SECTION ON NEUROLOGY AND PSYCHIATRY OF THE NEW YORK ACADEMY OF MEDICINE.

Joint Meeting, Held on November 11, 1913.

Dr. Smith Ely Jelliffe, of the Society, presided; Dr. J. Strauss represented the Section as Acting Chairman.

Irregular Bony Formations of the Sella turcica in Some Epileptics.—This paper, by Dr. L. Pierce Clark and Dr. E. W. Caldwell, appeared in the Journal for January 3d.

Causes of Disappointment in Operations on Brain Tumor.—Dr. William G. Spiller, of Philadelphia, said the discussion on brain tumor introduced by Bruns and Tooth at the recent International Congress in London, called forth some discouraging statements. Bruns said that about thirty out of 100 brain tumors were so situated that a radical operation might be advised; the localization was accurate, and the tumor in these cases was accessible. He believed they might expect surgical success in from three to four per cent. of all brain tumors. Tooth studied the records of 500 cases of brain tumor at the National Hospital obtained during the years 1902 to 1911, inclusive. Of these, about half came to operation. He thought a high mortality was inevitable, but that it could be reduced by a judicious choice of cases and by selection of the operation best suited for individual cases. The immediate dangers common to all growths, all situations, and apparently all operations, were shock, collapse, and respiratory and cardiac failure. Many causes of disappointment would occur to any one familiar with operations for brain tumor. The best known were incorrect diagnosis, the infiltrating character, large size, and inaccessible situation of the tumor, errors in technic, and impaired general vitality. While others equally important might be mentioned, he desired to speak of the hyperplasia of the brain caused by tumor, the distortion of the brain, especially from tumor in the posterior cranial fossa, and the acute swelling of the brain, which was probably an important element in the production of hernia cerebri.

Increase of intracranial pressure was believed to be the cause of many of the general symptoms occurring with brain tumor, and it would seem from the writings of certain authors that the increase of pressure was attributed directly to the tumor and varied with the size of the growth. There was a condition resulting from tumor to which little attention had been paid, and which was as important, if not more so, than the size of the tumor itself, namely, enlargement of the brain. This hyperplasia was not directly proportionate to the size of the tumor, it might be moderate with a large tumor or sufficient to cause much enlargement of one cerebral hemisphere where the tumor was small. The hyperplasia might be the result of irritation, either from pressure, or possibly from some substance elaborated by the tumor, and was caused by an overgrowth of neuroglia tissue. The condition was not unknown in medical literature, although little was said concerning it. This hyperplasia of the brain might occur with any variety of tumor, and was not confined to glioma. It should not be confounded with enlargement from glioma tissue, for it had not the appearance, microscopically, of tumor, nor should it be confounded with the acute brain swelling of Reichardt. The sudden fatal termination that occurred in some cases of tumor, was probably the result of this enlargement of the brain, and of interference, by the general increase of intracranial pressure, with the important functions of the medulla oblongata. It might also be that hyperplasia of the brain was an important cause of impairment of mentality in some cases of brain tumor.

Distortion of certain parts of the brain was a grave complication of tumor. The displacement of the cerebellum and the occipital lobes complicated the operation, and sudden relief of pressure probably had injurious effects on parts that had been distorted gradually. Cranial nerves in the region of the medulla oblongata were liable to be stretched gradually by such distortion, and the effect of this stretching on the pneumogastric might be serious.

Hernia cerebri was a serious complication of brain tumor. Where it resulted from decompression, it had been supposed to be indicative of the degree of intracranial pressure and to show to what extent the pressure had been relieved. This view was not entirely correct, as such a hernia might develop in cases where there had been no decided increase of intracranial pressure. A hernia might cause pressure against the edges of the opening in the skull, with occlusion of vessels and softening of the part of the brain implicated in the hernia, causing in this way hemiplegia and other grave symptoms.

Dr. M. Allen Starr said he had seen a number of cases of brain tumor associated with a distinct hypertrophy of the corresponding hemisphere, but he had never ascribed to this condition the novel and very interesting explanation offered by Doctor

Spiller, nor could he recall any reference to it in the literature. The form of hypertrophy that followed operation in some cases and failed to occur in others had often puzzled him; he could not understand why in some cases after an operation for brain tumor there should develop an enormous hernia cerebri, while in other cases it was entirely absent, and he did not believe that it was always an evidence of sepsis.

The distortion of certain parts of the brain resulting from tumor was a well recognized fact, and by causing pressure upon or stretching the cranial nerves, it might give rise to secondary symptoms and obscure the diagnosis. A review of his last fifty cases of brain tumor seen in private practice, showed that the diagnosis as to the location of the growth was possible in thirty; in the remaining twenty, its location could not be definitely determined. In twenty of the fifty cases, an operation was urged, and in eighteen of these, it was actually performed. In eleven of the eighteen the operation confirmed the diagnosis, and the tumor was removed; in two the tumor was found, but could not be removed on account of difficulties encountered in connection with the operation; in five, nothing was found. The death rate was six per cent.

Dr. B. Sachs said that, while doubtless many had observed this hyperplastic enlargement of the hemisphere accompanying brain tumor, he thought Doctor Spiller had been wise in attempting to lay stress upon it. Referring to the causes of disappointment in operation on brain tumor, Doctor Sachs said that at the recent International Congress in London, Sir Victor Horsley had made the statement that unless the diagnosis was made before the appearance of optic neuritis, which was generally regarded as such an important feature of the condition, it was almost too late to do the patient any good. This was rather an extreme view; in the recognition of this condition, it was not an easy matter to forego the advantages that went with the presence of a pronounced optic neuritis, and he could recall a number of instances where the diagnosis, without the eye symptoms, would have been practically impossible. In a case that was recently under his observation, there was no optic neuritis, but there was evidence of tumor involvement of the fifth nerve. In addition to this, there were marked cerebral symptoms and an operation was contemplated, but after three weeks' observation in the hospital and under simple hygienic treatment, all the symptoms gradually disappeared, with the exception of the fifth nerve involvement, and the patient had been temporarily discharged. Doctor Sachs said he still believed that here they had to deal with a brain neoplasm, but the patient was so much better that the idea of an operation had been abandoned, for the present, at least.

In their work at the hospital during the past year, x ray plates of the cranium had been carefully studied with regard to possible changes in the formation of the sella turcica in the presence of certain brain lesions; their results, however, had proved of no practical value, and were about as negative as those reported by Doctor Clark in connection with epilepsy.

The high mortality accompanying operation for brain neoplasms might perhaps be lessened to some degree by a more careful manipulation of the brain. The most gentle manipulation and the rapid checking of hemorrhage he regarded as important factors in the reduction of the death rate after these operations.

Dr. Robert Abbe said he was quite in accord with what had been said in regard to the disappointments attendant upon operations for brain tumor, and he had come to the conclusion that decompression was the operation of choice, both on account of its comparative simplicity and the benefits that accrued. He had in mind several instances where this procedure was followed by great prolongation of life, together with improvement in the eye symptoms. In one case where no tumor was found, although that diagnosis had been made and was well founded, the patient survived a decompression operation for four or five years, and resumed work. In another case, where the sight had been entirely lost, the decompression resulted in restoration to health, and the patient was alive three years after the operation, when she was lost sight of.

Dr. J. Ramsay Hunt said that in common with others he was familiar with the enlargement of the convolutions and parts of the hemisphere in the neighborhood of brain tumors, and that he had always regarded it as the result of stasis due to an interference with the circulation, near the growth, of the blood and lymph streams. A similar condition was observed in abscess formation of acute onset, and under those circumstances the term hyperplasia was certainly scarcely applicable. He would be inclined to attribute this swelling and enlargement to a chronic stasis and edema, and not to a true hypertrophy of hyperplasia of brain tissue. That in old cases, as a result of pressure and stasis, there should be some changes in the appearance and relation of the histological elements, was not surprising, but certainly in his experience there had been nothing in the microscopic picture of the swollen region that would have suggested the occurrence of hypertrophy and hyperplasia.

Dr. Walter Timme said that in the May, 1913, issue of the *Journal of Nervous and Mental Diseases*, he had published a communication giving the results of some observations, made in Doctor McCallum's laboratory, which perhaps might throw some light on this subject. The experiments were in connection with artificial nerve pressure, produced by tying the vagus nerve above the diaphragm, enough to cause pressure but without severing the nerve. It was found, upon killing the animals four or five months later, that there was a remarkable hyperplasia in the glands of the wall of the stomach. The number of glands of the stomach was increased from 5,000,000 in the normal cat, to over 9,000,000 in the animals operated on. When both vagi were treated in this way, the hyperplasia of the glands was more pronounced. There was perhaps some analogy between this condition and the hyperplasia of the brain tissue observed by Doctor Spiller in connection with the pressure produced by brain neoplasms.

Dr. Charles A. Elsberg said that he had also noticed this asymmetry between the size of the two

lobes in cases of brain neoplasm, and had ascribed it to an increase of the fluid content on the affected side. He did not understand whether Doctor Spiller attributed the occurrence of hernia cerebri to this hyperplasia. In many cases of hernia cerebri, the protrusion could be reduced by elevation of the patient's head or by lumbar puncture or by aspiration of the ventricles or the corpus callosum, or by a combination of these methods. A varying degree of pressure existed in these cases; thus, at times, we had a large, tense hernia occurring without apparent explanation, while at other times the protrusion might be almost collapsed, and if it was attributable to this condition of hyperplasia, it would be difficult to understand these marked differences in the pressure. Within the past few years, he had seen two cases of tumor in the left frontal region, both in the cortex and of the endothelial type, where the wrong side of the brain was exposed. In neither of these cases was there increase in pressure: on the contrary, there was a diminution to such a degree that it led to a subsequent opening of the skull on the opposite side, where the tumor was really found.

Dr. Foster Kennedy asked if by hyperplasia was really meant an increase in the brain elements or an edema of the brain? In the more acute types of rapidly growing gliomata, edema seemed to be the largest factor. He also inquired whether this edema or hyperplasia extending to a point some distance from the growth was a misleading factor in the diagnosis of brain neoplasms? Personally, he had always thought that the edema produced by a brain tumor varied inversely with the distance from the tumor, and that the symptoms would correspond with the lines of pressure radiating from the tumor. He then described two cases of expanding cerebellar lesions producing much edema, and consequent equivocal diagnostic signs, which, however, were the result not primarily of the edema, but secondarily of the intense medullary and pontine distortion and constriction of unusual tracts by the foraminal ring.

Doctor Spiller said that in his paper he did not discuss edema of the brain. That was an entirely different process. He spoke of hyperplasia, which referred to an overgrowth of the neuroglia tissue. In these cases, as shown by the microscope, there was little or no increase of the neuroglia cells, but sometimes proliferation of the neuroglia fibres could be demonstrated. The hyperplasia possibly was caused by chemical changes resulting from some substance elaborated by the tumor; but more likely from irritation by the tumor. It was probably not the cause of hernia cerebri and should not be confounded with edema or acute swelling of the brain, which probably had some relation to hernia. This hyperplasia might extend for a considerable distance beyond the limits of the tumor, and possibly might be in part the cause of the symptomatology of brain growths. They knew that a tumor of the brain might be removed at times in its entirety, and yet the symptoms might not entirely disappear, and possibly this persistence of symptoms might be attributed to alteration of nerve cells, to hyperplasia, or other changes. The same was true after a decompression operation. The mere relief of pressure did not usually remove all the symptoms, and he had known the condition to be aggravated by a decompression. He had shown a brain in which a very small subcortical tumor of the parietal lobe had caused great enlargement of the cerebral hemisphere of the same side. It would be unreasonable to attribute the hyperplasia in this case to stasis and edema of the brain. Such conditions were the causes of many disappointments in operations upon brain tumor.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Special Meeting in the Borough of Brooklyn, December 1, 1913.

Dr. Robert E. Coughlin in the Chair.

A Résumé of the Modern Treatment of Chronic Nephritis.—This paper, by Dr. Rollin Hills, was published in the Journal, January 31, 1914.

Dr. Bruce G. Blackmar said that in his student days the description of the two forms of chronic nephritis, as given by Dr. Francis Delafield, had made a lasting impression upon him, and ever since, he had been on the lookout for cases of which Delafield had said the prognosis was bad, though life might be prolonged for many years, with few symptoms, and recovery seemed possible. He was able to corroborate this statement regarding prognosis, especially regarding the prolongation of life. In looking back over his experience he had been impressed with the fact that patients suffering from chronic nephritis were often very fair risks. As a rule they had undergone treatment for varying periods, and many seemed in remarkably good health; yet an analysis of their urine and a careful physical examination would show that they were still subjects of the disease. On account of the pathology of chronic nephritis, he could readily understand why so many patients survived for considerable periods, yet were never cured. He would urge upon every medical practitioner the need of being vigilant in promptly recognizing cases of this disease, for which so much could be done by timely advice and treatment. It was always well to inquire into the family history, for it would often be found that in certain families there was a marked tendency. A routine practice should be made of examining the urine chemically and microscopically and observing the condition of the heart, the peripheral arteries, and the blood pressure. The study of the blood pressure was important, for in nearly every instance he had noted a pressure higher than normal when the urine contained albumin and casts as the only evidences of renal trouble. He was convinced that in the majority of cases there was excessive blood pressure at some time. If on the first examination of a patient there was any reason to suspect chronic nephritis, the physician should not rest content until repeated examinations of the urine, the blood pressure, etc., had established the diagnosis or enabled him to exclude it from consideration. In both forms of the disease the treatment was practically symptomatic, and his experience was that careful regulation of the diet and mode of life were of most importance. He hoped that some one present would be able to report the results of the use of salvarsan in cases with a syphilitic history, for in such

this remedy would seem to offer much promise. In cases apparently due to chronic lead poisoning he was accustomed to administer potassium iodide, in five grain doses, three times a day, and two teaspoonfuls of magnesium sulphate every morning. For extreme dyspnea, with weak heart action, deodorized tincture of opium, two drops, with tincture of digitalis, five drops, given every four hours, was very efficacious. As a duretic and heart stimulant in cardiac cases, infusion of digitalis combined with potassium acetate had proved the most satisfactory.

Dr. FRANK E. A. STONEY said he wished simply to emphasize two factors of prime importance in the treatment—diet and rest. In regard to diet there was much diversity of opinion. When, however, we considered that, aside from the infectious diseases and certain other maladies, errors in diet caused a large proportion of these cases, our first endeavor should be to correct the quantity and quality of the patient's food and carefully watch the digestion; at the same time bearing in mind that, in general terms, parenchymatous nephritis was a question of the elimination of water, while interstitial nephritis was one of elimination of solids. Each case should be studied individually, and the diet adjusted to the calorific needs. The use of more than 100 grams of protein per diem was forbidden, and a diet nearly salt free, especially where there was edema, was advisable. Widal had gone so far as to say that a rich mixed diet, if free from salt, did not hinder the disappearance of edema and albuminuria. Personally, he firmly believed in the milk diet, which should especially be instituted in acute exacerbations, and modifications be made from time to time in accordance with the condition. As to the other important factor, absolute rest was desirable in certain cases, and might be the only alternative. But rest did not always mean a cessation, but rather a relaxation of, physical and mental strain. Rest, in any degree, would cause a lowering of blood pressure to a corresponding degree; due, perhaps, to the fact that the body at rest required less nourishment and produced fewer toxic substances, with a consequent lessening of demands upon the organs of elimination. Rest in a dry climate was an ideal condition.

Dr. LOUIS C. AGER thought that in chronic nephritis it was necessary to create as little protein waste as possible. Hence all active exercise should be interdicted, and passive exercise and massage substituted for it.

Dr. EDWARD E. CORNWALL said he was especially interested in the quoted views of Ortner, as his own differed so profoundly. He believed the regulation of the metabolism to be all important, as it was essential that the work of the organs should be made as light as possible. Ortner's diet for chronic nephritis, as well as for many other troubles, was not well adapted for this purpose. Ninety grams of protein daily was entirely too large an allowance, for there were few persons in good health who consumed as much. Realizing the necessity of rendering the nitrogenous metabolism as easy as possible, he had not found it difficult to arrange a diet with restriction of animal foods, with the exception of milk, on which patients got along very comfortably. Meat was allowed only twice a week, and they felt so much better on this restricted diet that there was little temptation to depart from it. If occasionally they did indulge in the forbidden articles, they soon came back of their own accord. Many of these cases were not so much nephritis as cardiac disease. Among the commonly employed artificial aids to the heart, there was one which he thought contraindicated, and that was digitalis. In the treatment of this condition it should be left out.

Dr. LOUIS F. BISHOP said that when he was writing his book on arteriosclerosis he sent out letters to a large number of clinicians asking for their personal views, and there was one letter he received in reply which seemed to him very much better than any of the others. This was from Professor Upfalls, of Leland Stanford University, California, who had records, extending over several years, of 1,000 cases which had come to autopsy. His conclusion was that entirely too much was attributed to the kidneys, for in most of these cases the changes in the kidney were simply part of a general change affecting all the organs; the kidneys not being primarily diseased. Doctor Bishop believed there were two classes of cases of nephritis. In the first, which was small in number, the kidney alone was damaged. In the second, which was much larger, there was present a degenerative disease which had no name, but which was commonly designated as arteriosclerosis, cardiac disease, nephritis, and perhaps other affections. He had recently been sent the report of a life insurance company which showed that since 1880 the deaths among its clientele from cardiovascular and renal disease had increased 104 per cent. There was a degenerative disease of the cells of the body in general, in which the heart, bloodvessels, liver and kidneys suffered because of their importance and activity in the organism and because in the presence of cellular damage they were put under extra strain. As a final result the cells were destroyed and replaced by connective tissue. Primarily the whole matter was a question of diet, for the irritation producing the cell damage was due to foreign material in the form of some protein or protein derivative to which the cells of the individual had become sensitive. In the treatment he relied upon what he had named the "few protein" diet, serial doses of castor oil, and a course of physical treatment suited to the individual case.

Dr. B. A. FEDDE said he would like to inquire what could be done for indicanuria where there was albuminuria. He had tried all sorts of agents, but had not been able to control it. The only thing that seemed to have any influence was acetozone.

Doctor BISHOP said that a Carlsbad physician had once told him that he had had 10,000 cases of indicanuria, and when asked how many of these he had cured, he replied, "two." Asked how these had been cured, he said it was by operation.

Dr. GORDON R. HALL said it was coming to be pretty generally understood that we could not depend upon drugs in the treatment of chronic nephritis. These were of service only symptomatically. Our main reliance was on diet and general treatment, and the treatment now approved seemed about the same whatverer the form of nephritis

present. In a case of interstitial nephritis we were dealing with the heart and the liver, as well as the kidneys. In the use of a milk diet it seemed advisable to employ a mixture of milk and cream in order to diminish the proportion of proteid. Of the various forms of milk which were in use, kumyss was objectionable on account of the very considerable amount of alcohol it contained. In regard to digitalis, the author of the most recent treatise on the drug had expressed views in regard to its action which were at variance in some respects with those commonly accepted; stating that its effects on man were different from those observed in animals. He contended that it did not have the vasoconstrictor action which had been attributed to it, but the contrary. Thus, in the kidney it dilated the arteries, and in this way it was of service by increasing the blood supply.

Doctor CORNWALL had been accustomed to pay but little attention to the presence of indicanuria. It was possible that the liver was responsible for the condition. Digitalis was objectionable chiefly on account of its irritating effect upon the gastro-intestinal tract.

(*To be continued.*)

Letters to the Editor.

THE DEATH RATE FROM MEASLES.

WASHINGTON, D. C., *February 11, 1914.*

To the Editor:

In a previous article[1] the writer attempted an analysis of the death rates from measles in the city of Washington, D. C., during the twenty-three years from 1890 to 1912. It was shown that during this period there had occurred three apparently clearly defined cycles of virulence of slightly different type; the first from 1891 to 1896, with high death rates in each of these years and comparatively low rates in each of the four intervening years; the second from 1896 to 1900, showing a high rate in 1896, followed by three years of comparative quiescence, and succeeded by a high rate in 1900; and the third from 1900 to 1909, during which period there is seen a surprisingly regular rise and fall in the death rates, comparatively high rates occurring in 1900, 1903, 1906, and 1909, and comparatively low rates in each of the two intervening years.

In 1911, however, it appeared that the cycle had again changed and instead of a two year period of comparative quiescence or virulence, the interval had decreased again by one year. This seemed to be carried out in 1912, when the rate was comparatively low. The question arose whether this was merely a temporary break in the regularity of the preceding years, the beginning of a new cycle with alternating years of high and low death rates, or possibly a return to the cycle which occurred from 1891 to 1896.

Figures recently obtained from the health department of Washington show that in 1913 there were twenty-five deaths from measles, corresponding to a death rate of 7.08 per 100,000 of population. Apparently a new cycle of alternating years of high and low death rates was initiated in 1911. This may be seen more clearly by tabulating the number of deaths and the death rates from this cause since 1909, as follows:

Year	Deaths from measles	Death rate per 100,000 population
1909	39	11.9
1910	4	1.2
1911	22	6.5
1912	7	2.0
1913	25	7.1

Based on the foregoing, a low rate for 1914, approximating 1.5 per 100,000 population, might be predicted with more or less certainty. HUGH A. BROWN, M. D.

[1] "Measles: Epidemic Cycles of Virulence," NEW YORK MEDICAL JOURNAL, June 7, 1913.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

American Red Cross Textbook on Elementary Hygiene and Home Care of the Sick. By JANE A. DELANO, R. N., Chairman of the National Committee, Red Cross Nursing Service, etc., and ISABEL MCISAAC, R. N., Superintendent of the Nurse Corps, United States Army, etc. Prepared for and endorsed by the American Red Cross. Philadelphia: P. Blakiston's Son & Co., 1913. Pp. xv-256. (Price, $1.)

This is an excellent little book. The authors modestly treat of elementary hygiene and the care of the sick. Hygiene, whether elementary or not, is a question of primary importance: It is a real living presence, a practical art destined probably to take the place of over much pharmacological and serum science of the time. The cure of the sick depends rather upon the quality than the quantity of the treatment. It is refreshing to take up a book clearly and simply written, without pedantry, or definitions that try to embrace too much, and hence do not define at all. The work of Miss Delano and Miss McIsaac is free from these faults. The chapters about the house, its care, the matter of personal hygiene, hygiene of infants and children, of the sickroom, are extremely good, with touches of delicate observation and taste which few but women could write. On the other hand, some chapters might be fuller; for instance, more might be said about the care of patients when unconscious, treatment of fainting, how to give medicines in these and other circumstances of accident or emergency. The book, as we have said, is well written, but we trust that the authors will be delivered from their present passion for the word "retiring."

The Care of the Body. By R. S. WOODWORTH, Professor in Columbia University. New York: The Macmillan Company, 1912. Pp. viii-359. (Price, $1.50.)

This small book is written by one peculiarly fitted to give sound scientific and practical advice to the public, and physicians would do well to familiarize themselves with its contents. Professor Woodworth is well known as joint author with Professor Ladd, of Yale, of *Physiologic Psychology.* He brings to this task a full knowledge of two departments of science wherein clinicians are especially deficient—physiology and psychology. He also exhibits admirable knowledge and experience in the best principles of personal hygiene, a third field as to which medical men are usually either ill informed or indifferent.

It has been our privilege to read many books of similar scope, and we have found this to be one of the best. It is especially useful to place in the hands of patients, urging them to make use of the information and recommendations.

Causes and Cures of Crime. By THOMAS SPEED MOSBY, Member of the American Bar, Former Pardon Attorney of the State of Missouri, etc. Illustrated. St. Louis: C. V. Mosby Company, 1913. Pp. x-354. (Price, $2.)

As a criminologist the physician is usually, so to speak, a layman, and for the layman as good a book on the subject of crime as the volume before us has not often been produced. Apart from too implicit a reliance on many of the discredited theories and fading imaginings of Lombroso and his school, and an apparent belief in the white slave delusion, the whole thesis of the book is sanely and logically set forth. As the author justly remarks, "every man . . . who feels an interest in civilization, who prefers racial improvement to racial deterioration and degeneracy . . . must aspire to a degree of familiarity with the comparatively new science of criminology." The book is divided into considerations of etiology, prophylaxis, and therapeutics, winding up with a study of the new penology, which intends to send the penitentiary into oblivion after the bastile. Reform is to begin as early as possible, immediately after the first offense, and the boy, misled, but not yet vicious, is to be kept away from the hardened criminal for whom other measures are devised. The trial court will not lose jurisdiction in cases where insanity is made a plea

after the commission of a crime, and mere doubt of a prisoner's mental or moral responsibility will never result in his discharge. The inmates of the new reformatory will be properly classified, segregated, trained, and treated, for the new penology will affect in increasing degree the forms of criminal procedure and the concepts of penal justice; it will read the laws of nature and base its conclusions upon a study of the body and mind of man.

There are some weird mistakes in the text, "apodeictically," "irradicate," luxuriant for luxurious; we hope, too, that the proofreader was responsible for the awful "preventative." There is apparently a curious transposition on page 179, where the horizon is said to hover above the mist of fable (!) Mr. Mosby has bravely cut off a very large and sympathetic class of readers by his uncompromising opposition to woman suffrage. We commend this book to our colleagues as an interesting and important addition to their libraries.

Taschenbuch der pathologischen Anatomie. Von Prof. Dr. med. EDGAR VON GIERKE. I. Allgemeiner Teil. Zweite Auflage. Pp. 143. II. Spezieller Teil. Zweite Auflage. Leipzig: Dr. Werner Klinkhardt, 1913. Pp. 207.

Professor von Gierke has managed to collect within a comparatively small space the essential facts of both general and special pathology. As the name implies, this does not pretend to be a textbook, but for class work it should be successful. The arrangement is good, the text is clear and concise, and the illustrations are not only good but well selected. On every page space is left for note taking.

Interclinical Notes.

An amusing misprint on page 129 of the February issue of *Current Opinion,* makes a man say that his wife had "regaled him with the shocking information that 50,000 young women disappear each year between Chicago and New Year." This uncharted region recalls somehow that vague pathway frequently referred to in the West, "from h—ll to breakfast."

* * *

The late Henry Labouchere once studied medicine, although his main object in attending lectures at Marburg was to learn German to help in his diplomatic duties at Dresden. In the interesting *Life* by Algar Labouchere Thorold (Putnam's Sons), we read that he was always fond of developing extraordinary theories on the subject of medical science, more remarkable for their originality than for their probable ultimate utility. Even as late as 1905 Labouchere still remembered his medical student days. He wrote to one of his sisters in that year on the occasion of her son becoming a doctor: "A doctor is a good profession (*sic*). I learnt doctoring at Marburg in order to learn German. I rather liked it, and have vainly offered to doctor people gratis since then, but no one seems inclined."

* * *

If the copy of certain Chicago ordinances we have seen is correct, they need a little revision. Our copy transcribes Section 1470 as follows: "No druggist or other person shall sell or give away any morphine, cocaine, hydrochlorate, or any salts of any compound of the same, etc.' The mysterious "hydro-chlorate" is repeated twice, between commas as here given, leaving grave doubt as to whether chloral hydrate was meant, or whether an unintended comma has split up cocaine hydrochloride.

* * *

Comparative anatomists will enjoy the study of the quaint structure of the centaur, shown in pictures of sculptured groups by Paul Manship in the February *Metropolitan:* sculpture seems to be peculiarly an American art. Havelock Ellis discusses The White Slave Agitation in a sane and convincing manner, doing his share to dissipate the latest extraordinary superstition to envelop our reformers.

* * *

We confess to a great liking for the Babes in the Wood series of stories in the *Popular Magazine.* In the February month end number, the author, George Sterling, tells of The Pool of Pitch. The incidents occur three hundred thousand years ago and the young hero and heroine, Uk and O-o, have adventures differing materially from those which modern youngsters might undergo, under the care of a nursemaid, for example, in Central Park. Beside enjoying the story, we feel that our mind is being greatly improved by the contemplation of the workings of evolution.

Meetings of Local Medical Societies.

MONDAY, *February 23d.*—Therapeutic Club, New York; Medical Society of the County of New York; Psychiatric Society of Ward's Island; Poughkeepsie Academy of Medicine.

TUESDAY, *February 24th.*—New York Psychoanalytic Society; New York Dermatological Society; Metropolitan Medical Society of New York City; New York Medical Union (annual); Buffalo Academy of Medicine (Section in Pathology); New York City Riverside Practitioners' Society; Valentine Mott Medical Society, New York; Washington Heights Medical Society, New York; Woman's Hospital Society, New York.

WEDNESDAY, *February 25th.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; New York Society of Internal Medicine; Schenectady Academy of Medicine.

THURSDAY, *February 26th.*—New York Academy of Medicine (Section in Obstetrics and Gynecology); Medical Union, Buffalo; Ex-Interne Society of Seney Hospital, Brooklyn; Hospital Graduates' Club, New York; New York Physicians' Association.

FRIDAY, *February 27th.*—New York Society of German Physicians; New York Clinical Society (annual); Manhattan Medical Society; Brooklyn Society of Internal Medicine; Italian Medical Society of New York.

SATURDAY, *February 28th.*—New York Medical and Surgical Society; West End Medical Society; Lenox Medical and Surgical Society.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending February 4, 1914:

Fairbanks, G. D., Acting Assistant Surgeon. Leave of absence for fifteen days from January 10, 1914, amended to read, "twelve days' leave of absence from January 10, 1914." **Frost,** W. H., Passed Assistant Surgeon. Directed after completion of duties in Pittsburgh, Pa., to proceed to bureau for conference relative to investigations of pollution of Ohio River. **Hamilton,** H. J., Acting Assistant Surgeon. Granted two days' leave of absence from January 31, 1914. **Letton,** H. P., Sanitary Engineer. On request of the State Board of Health of North Carolina, directed to proceed via Raleigh to Clinton, N. C., to advise with the authorities as to the best source of a public water supply. **Lumsden,** L. L., Surgeon. On request of the State Board of Health of Maryland, directed to proceed to Rockville, Md., and make an investigation of the origin and prevalence of typhoid fever in that town and vicinity. **Stoner,** G. W., Senior Surgeon. Granted six days' leave of absence beginning January 24, 1914, under paragraph 193, Service Regulations.

Promotions.

Passed Assistant Surgeons John M. Holt, Robert L. Wilson, and John T. Burkhalter, promoted and commissioned as surgeons, effective December 1, 1913.

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending February 14, 1914:

Ashburn, Percy M., Major, Medical Corps. Leave heretofore granted is extended four days. **Dieterich,** Frederick H., First Lieutenant, Medical Reserve

Corps. Relieved from further duty at the Army Medical School in Washington, D. C., and will proceed without delay to his home, and on arrival report by telegraph to the Adjutant General of the Army; Lieutenant Dieterich is relieved from active duty in the Medical Reserve Corps to take effect on his arrival home. **Fox,** Harold H., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States, his services being no longer required. **Hereford,** John R., First Lieutenant, Medical Reserve Corps. On arrival in the U ted States will proceed to Fort Baker, Cal., for duty. **Sondern,** Frederic E., First Lieutenant, Medical Reserve Corps. Resignation of commission has been accepted by the President to take effect February 6, 1914. **Tefft,** William H., Captain, Medical Corps. Will proceed at such time as may be necessary to Fort Bliss, Texas, and report to Colonel Joseph Garrard, Fifteenth Cavalry, president of an army retiring board at that place, for the purpose of submitting certain testimony to the board in the case of several officers now under orders to appear before that board, and on completion of the duty enjoined will return to his proper station after each visit. **Tenney,** Elmer S., First Lieutenant, Medical Reserve Corps. On arrival in the United States will proceed to Fort Dade, Fla., for duty. **Whitcomb,** Clement C., Major, Medical Corps. In addition to the visits directed in paragraph 7, special orders No. 256, will make two visits from New York City to Trenton, N. J., at such times during the months of February and March, 1914, as the progress of the work may require, for the purpose of superintending the construction of ambulance bodies for the medical department of the Army, and on completion of the duty enjoined will return to his proper station after each visit.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the two weeks ending February 14, 1914:

Brooks, F. H., Passed Assistant Surgeon. Ordered to the Navy Yard, Norfolk, Va. **Butts,** Heber, Passed Assistant Surgeon. Detached from the *El Cano* and ordered to the *Wilmington.* **Davidson,** A. B., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from March 28, 1913. **Davis,** R. G., Assistant Surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered to the *El Cano.* **Donelson,** Martin, Passed Assistant Surgeon. Detached from the *Wilmington* and ordered to the Naval Station, Olongapo, P. I. **Eytinge,** E. O. J., Passed Assistant Surgeon. Detached from duty in the Naval Hospital, Mare Island, Cal., and ordered to that hospital for treatment. **Fiske,** C. N., Surgeon. Ordered to the Navy Yard, Mare Island, Cal. **Halsey,** W. H., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from October 1, 1913. **Hoen,** W. S., Passed Assistant Surgeon. Detached from the Navy Yard, Mare Island, Cal., and ordered to the *Pittsburgh*; commissioned a surgeon from November 14, 1913. **Hough,** F. W. P., Passed Assistant Surgeon. Detached from duty with the Insular Government, P. I., and ordered to the *Cincinnati.* **Hoyt,** R. E., Surgeon. Detached from the *Michigan* and ordered on sick leave. **McCullough,** F. E., Surgeon. Ordered to duty as temporary assistant to the Bureau of Medicine and Surgery. **Mears,** J. B., Passed Assistant Surgeon. Detached from the *Cincinnati* and ordered home. **Munger,** G. B., Passed Assistant Surgeon. Ordered to the Receiving Ship, Puget Sound, Wash. **Murphy,** J. A., Surgeon. Ordered to the *Michigan.* **Odell,** H. E., Surgeon. Ordered to the Naval Hospital, Canacao, P. I. **O'Malley,** J. J., Assistant Surgeon. Ordered to the Naval Hospital, Norfolk, Va.; commissioned a passed assistant surgeon from October 5, 1913. **Richards,** T. W., Surgeon. Detached from the Bureau of Medicine and Surgery and ordered to duty as fleet surgeon, Atlantic Reserve Fleet. **Richardson,** R. R. Surgeon. Ordered to Naval Training Station, Great Lakes, Ill. **Riddick,** W. J., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from March 28, 1913. **Sheehan,** R. F., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from October 5, 1913. **Short,** W. H., Passed Assistant Surgeon. Detached from Naval Station, Guantanamo, Cuba, and ordered to temporary duty on the Receiving Ship, Mare Island, Cal. **Stokes,** C. F., Medical Director. Detached from duty as chief of the Bureau of Medicine and Surgery and ordered to temporary duty in connection with that bureau. **Strite,** C. E., Passed Assistant Surgeon. Detached from the *Michigan* and ordered home. **Walton,** D. C., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from March 28, 1913. **White,** E. C., Passed Assistant Surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered home to await orders. **Wickersham,** W. W., Assistant Surgeon. Commissioned an assistant surgeon from January 14, 1914.

Births, Marriages, and Deaths.

Married.

Archer—Walker.—In New York, on Tuesday, February 17th, Dr. Harry M. Archer and Miss Emilie June Walker. **Carr—Elliott.**—In Washington, D. C., on Monday, February 2d, Dr. W. B. Carr and Mrs. Tevis M. Elliott. **Greenwood—Pemberton.**—In Richmond, on Saturday, January 17, Dr. Arthur Greenwood, of Boston, and Mrs. Josephine Lyons Pemberton. **Hammer—Tunnell.**—In Manchester, Tenn., on Wednesday, January 28th, Dr. M. R. Hammer, of Newton, Ia., and Miss Laura Tunnell. **Holmes—Rutherfoord.**—In Baltimore, Md., on Saturday, January 31st, Dr. James B. Holmes and Miss Rosalie Seddon Rutherfoord. **Northrup—Cowing.**—In New York, on Wednesday, February 11th, Dr. William Perry Northrup and Miss Julia R. Cowing. **Rosett—Carey.**—In Greenbrier County, W. Va., on Saturday, February 7th, Dr. Joshua Rosett and Miss Louise Carey. **Zink—West.**—In Indianapolis, Ind., on Tuesday, February 3d, Dr. Clyde M. Zink, of Louisville, Ky., and Miss Sarah E. West.

Died.

Austin.—In Greenville, S. C., on Thursday, January 29th, Dr. William H. Austin, aged eighty-four years. **Christensen.**—In Provo, Utah, on Monday, January 26th, Dr. J. N. Christensen, aged seventy years. **Coggeshall.**—In Oxford, N. C., on Thursday, January 29th, Dr. G. A. Coggeshall. **Dent.**—In Baltimore, Md., on Sunday, February 1st, Dr. J. Allston Dent, aged fifty-two years. **Dent.**—In Grafton, W. Va., on Thursday, January 29th, Dr. William Marmaduke Dent, aged eighty-two years. **Dougherty.**—In Rochester, Minn., on Friday, February 6th, Dr. Anthony Dougherty, of Ashley, Pa., aged forty-five years. **Dudley.**—In St. Louis, Mo., on Monday, February 2d, Dr. George F. Dudley, aged seventy-nine years. **Gray.**—In Port Carbon, Pa., on Sunday, February 8th, Dr. John McKelvey Gray. **Green.**—In San Luis Potosí, Mexico, on Tuesday, January 13th, Dr. B. W. Green, aged thirty-eight years. **Hodge.**—In Raleigh, N. C., on Thursday, January 29th, Dr. W. T. Hodge, aged seventy-six years. **Howell.**—In Rochester, N. Y., on Friday, February 6th, Dr. Harry B. Howell, aged fifty years. **Huntoon.**—In Los Angeles, Cal., on Monday, February 2d, Dr. A. F Huntoon, aged sixty-two years. **Jenkins.**—In Enid, Okla., on Wednesday, February 4th, Dr. S. M. Jenkins. **Ludwig.**—In Pottstown, Pa., on Sunday, February 1st, Dr. J. Henry Ludwig, of Boyertown, Pa., aged thirty-nine years. **Marion.**—In Boston, Mass., on Sunday, February 8th, Dr. H. E. Marion, aged seventy years. **Raines.**—In Urbana, Ill., on Monday, February 2d, Dr. Charles C. Raines, of Basco, Ill. **Rainey.**—In Austin, Texas, on Monday, February 2d, Dr. Frank Rainey, aged seventy-nine years. **Rankin.**—In Pittsburgh, Pa., on Monday, February 2d, Dr. H. I. Rankin, aged forty-five years. **Ross.**—In Fresno, Cal., on Tuesday, January 27th, Dr. R. O. Ross. **Roth.**—In Baltimore, Md., on Friday, January 30th, Dr. John Roth, aged sixty-two years. **Schleifer.**—In Pittsburgh, Pa., on Saturday, January 31st, Dr. Oscar C. Schleifer, aged forty-six years. **Shoemaker.**—In Morganville, Ky., on Thursday, January 29th, Dr. J. T. Shoemaker, aged seventy-five years. **Wilson.**—In Williamston, S. C., on Thursday, January 29th, Dr. Wistar W. Wilson, aged sixty-three years. **Young.**—In Forest City, N. C., on Friday, January 30th, Dr. G. E. Young.

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Original Communications.

MOTOR ANOMALIES OF THE EYE.*

The Relative Value of the Tests Used in Diagnosing Them.

BY ALEXANDER DUANE, M. D.,
New York.

We have a great many tests for diagnosticating anomalies of the eye muscles. Too often they are applied without a proper recognition of what each is designed to accomplish and without adequate consideration of the facts required for a satisfactory diagnosis. It is obvious also that some must be more valuable than others. Premising that individual opinions vary greatly on this point, I should like to offer the deductions drawn from my own experience, indicating what are the uses of the more important tests and what tests in my belief are the most serviceable. Let us consider, first, what we are aiming to determine by the tests; second, some facts that apply to all the tests in common; third, the important individual tests that are commonly used; and, fourth, the selection that it seems best to make from these tests so as to establish a routine that shall not be too onerous and yet shall enable us to find out all the necessary facts.

PURPOSE OF THE TESTS.

In the first place let us consider what we can determine by our tests—in other words, what is the object for which they are made. Our tests should determine:

A. Whether either eye when used by itself can maintain steady fixation; *tests of monocular fixation.*

B. Whether either eye by itself is or is not able to move normally in all possible directions or ways: *tests of monocular movement.*

C. Whether both eyes when used in conjunction habitually fix on the same object or whether one or the other actually deviates or tends to deviate from the fixing position; *tests of binocular fixation.*

D. Whether when both eyes are used in conjunction the patient sees with both together or whether he suppresses the image of an eye; and, if he does see with both at once, whether he sees single or double, and, in the latter case, how much and what sort of double vision he has; *tests of binocular vision.*

E. Whether when both eyes are used together they move normally and in concert, so as to secure binocular fixation and binocular single vision in all the different positions in which the two can normally be placed; *tests of binocular movement.*

It is obvious that, while our tests should determine all these facts, yet as clinicians we are chiefly concerned with those listed under C, D, and E. For it makes comparatively little difference whether either eye by itself can make this movement or that, provided the two eyes can and do move harmoniously together and the patient readily secures binocular fixation and vision.

GENERAL FACTS REGARDING THE TESTS.

Position of the patient. The patient should sit up straight with head erect and tilted neither to the right nor left. He should look at the test object sharply, and, except when it is designedly placed in the secondary positions, as when we are examining the excursions of the eyes or the diplopia on the tangent plane, he should face it squarely. With a single exception, to be noted later, the head should be kept still and the eyes alone allowed to move. In certain tests, e. g., those for determining the range of monocular movement, fixation of the head is particularly important, and here it may be effected by a special apparatus as in Stevens's tropometer and in Wootton's head rest for the perimeter.

In many cases, particularly in paralysis, it is important to note the effect that tilting of the head exerts upon the deflection and the double images. In a patient who has a combined lateral and vertical diplopia produced by a deviation of the eye[1], tilting the head to one shoulder always alters considerably the vertical separation of the images. If the patient tilts his head to the right, the right hand image, whether belonging to the right eye or the left, goes down. Indeed, it is by this manœuvre that a patient with paralysis of one of the elevators or depressors puts the images on a level and so makes the diplopia less troublesome. In fact the tendency to do this is so strong that it sometimes gives rise to torticollis.

Conditions under which the tests are made. In all cases the conditions under which the tests are made, e. g., whether with or without glasses, whether under atropine or not, etc., should be noted.

Indication of measurements; degrees and prism degrees. In measuring the movements of either eye by itself, or the coordinate movements of the two eyes, or the deviation of one eye from the fixing position, or the amount of a diplopia, we may indicate our results in linear units. Thus we may say that an eye can move three or four mm. from the midline, or that it can converge down to a point six

*Read in abstract before the Section in Ophthalmology, New York Academy of Medicine, October [illegible], 1913.

[1] [illegible]

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cm. from the root of the nose, or that there is a convergent squint of two mm., or that the double images are thirty cm. apart at a distance of two metres. For most purposes, however, it is better to give our measurements in degrees, saying, for example, that the patient can rotate his eye out so many degrees, has a squint of so many degrees, etc. In so doing we must avoid one source of confusion. The term degree is used in a double sense. Thus, when we speak of an esophoria of twelve degrees, we may mean either that the eye deviates through an actual angle of twelve degrees or that it has a deviation which is corrected by a twelve degree prism. To what actual deviation the latter corresponds will depend upon the method of numeration used, i. e., will depend on whether the prism is numbered in terms of refracting angle, deviating angle. prism dioptries, or centrads. The prisms ordinarily employed are numbered in degrees of refracting angle (prism degrees), which for prisms of moderate strength are equivalent to centrads. Between degrees of arc and prism degrees there is no uniform relation, although for prisms of less than twenty degrees of refracting angle each prism degree corresponds to half a degree of arc. Thus an ordinary ten degree prism produces an actual deflection of five degrees of arc. The precise ratio depends upon the strength of the prism, the way it is held before the eye, and the refractive index of the glass. For prisms held in the ordinary position the following table will hold good:

Refracting angle of prism (prism degrees).	Corresponding deviation (degree of arc).	Refracting angle of prism (prism degrees).	Corresponding deviation (degree of arc).
1	0.5	25	14.1
2	1.1	26	14.7
3	1.6	27	15.4
4	2.1	28	16.0
5	2.6	29	16.7
6	3.2	30	17.3
7	3.8	31	18.[illegible]
8	4.4	32	18.7
9	4.9	33	19.4
10	5.4	34	20.1
11	6.0	35	20.8
12	6.[illegible]	36	21.[illegible]
13	7.1	37	22.3
14	7.6	38	23.1
15	8.2	39	23.9
16	8.8	40	24.7
17	9.4	45	29.2
18	10.0	50	34.5
19	10.5	52	37.3
20	11.1	54	40.5
21	11.7	56	44.4
22	12.3	58	50.3
23	12.9	59	56.2
24	13.5	59.2	Total reflection

In any event it is important to remember that with the perimeter, tropometer, tangent plane, and amblyoscope, the measurement of a rotation, deviation, or diplopia is made in arc degrees, and that with the phorometer and similar instruments and with ordinary prisms it is made in prism degrees and that one measurement must be reduced to the same terms as the other before the two can be compared. The comparison is easy and is also accurate in the case of moderate deviations (those below twenty arc degrees). In greater deviations measurement with prisms is subject to some inaccuracies so that our estimate may be erroneous by as much as two or three arc degrees. Fortunately in deviations as large as this such an error is of no practical consequence.

To prevent confusion it is important in every case to state clearly whether we are talking of degrees of arc or prism degrees. It would be better to reserve the term degrees[2] for the former and the term prism degrees[3] for the latter.

A. TESTS OF MONOCULAR FIXATION.

To determine whether either eye by itself can maintain fixation, we cover the eye not under observation and make the patient look sharply at some well defined object, not too large but yet sufficiently conspicuous to catch and hold his attention, at the same time stationing ourselves so as to see whether the eye is truly directed at the object. Deviation from the true fixing position may be evidenced by, a, uncertain and ill maintained fixation; b, wide deflection of the eye or frankly excentric fixation; c, rapid to and fro oscillations about the fixing position (nystagmus). These deflections are all associated with marked impairment of vision, which impairment is, as a rule, particularly great for reading. In fact, slight cases of eccentric fixation may first be revealed to us by the great disproportion between the distant vision, which is still fair, and the near vision, which is very bad.

Usually we observe all these particulars when making the screen test (*vide infra*), noting as we pass the screen from one eye to the other, how steadily the eye that has just been uncovered takes up the work of fixation.

B. TESTS OF MONOCULAR MOVEMENT.

These tests are made to determine whether either eye by itself can move properly—irrespective of whether it can keep pace with its fellow or not. By determining the limits of movement in every direction we delimit what is called the *field of monocular fixation.* The amount by which the eye can be moved in any direction can be ascertained by:

a. Inspection. The eye is made to follow a well defined object and the observer notes when the eye begins to flag or waver. This, though a rough test, is sufficiently accurate in most cases.

b. Measurement of the excursion on a *tangent scale* or a *perimeter.* Here the patient is made to follow a sharply defined object (e. g., two closely set parallel lines on a bit of cardboard) which blurs the moment fixation wavers. The object is carried out from the centre, the eye following it. The exact point at which the object blurs is noted, and the corresponding amount of angular rotation read off from the scale.

c. Stevens's *tropometer.*

In measurements made by any of these methods it is absolutely essential that the head should be fixed, and the eye alone move.

It is also important in most cases that measurements be taken in each one of the six cardinal directions of the gaze, viz., right, left, up and right, up and left, down and right, down and left.

Another monocular test that indicates whether an eye performs rotation properly or not is:

d. The *projection test (Tastversuch).* For, if the patient, when looking with but one eye projects faultily—i. e., if he overshoots or undershoots the mark—as he makes the attempt to point at an object lying to one side or the other, he is evidently trying

[2]Denoted by °.

[3]Denote by *P.* For degrees of minimum deviation (practically never used) the designation is *d*; for prism dioptries is Δ; and for centrads is ∇.

to move the eye with a muscle that is abnormally innervated. If he overshoots the mark, the muscle that moves the eye in that direction is too weak, if he undershoots it, the muscle is too strong.

One other monocular test is:

e. The *clinometer.* While this may be employed to test torsion or declination in binocular vision (see under D *infra*), it may also be employed to show deflections of the corneal meridian to the right or left even when the other eye is covered or blind. In paralytic cases it is sometimes especially valuable when used thus as a monocular test.

In general, I regard the tests of monocular movement (tropometer, etc.) as of subordinate importance; first, because they do not show what we mainly wish to know, i. e., how the two eyes work together; and, second, because in my experience they often fail to reveal an anomaly that is present. I have repeatedly seen cases in which one eye, when tested by itself, apparently moved well in all directions and yet showed a considerable and increasing deflection when the attempt was made to move it in conjunction with its fellow. Again, when we examine the eye in different days we may find wide variations in the range of its excursion, showing that the patient sometimes puts forth his full strength, sometimes does not. In binocular movements whether he puts forth his full strength or not is of little importance, since if he fails with one eye he will equally fail with the other, and any disparity in movement between the two will still be apparent.

C. TESTS OF BINOCULAR FIXATION.

These tests seek to determine whether both eyes are directed at the same object under all conditions, or whether they either actually deviate (heterotropia) or simply tend to deviate, being usually kept in place by muscular effort (heterophoria).

The tests are:

a. Inspection. This is a test applicable only when there is a heterotropia, and not then unless the deviation is considerable. As is well known, inspection may indicate the presence of a deviation when the other tests show that none really exists.

Inspection should take account, not only of any apparent deflection present, but also of the attitude of the head and any other peculiarities that may be of significance.

b. Screen test. This is the most important fixation test, and indeed the most important single test that we have. It is applied in two ways: 1. The method of *alternate covering;* 2, the method of *binocular uncovering.* Both methods should be used in succession in any systematic investigation of a muscular anomaly. The screen test, too, like other tests to be mentioned later, should be regularly applied both for distance and near, i. e., first for an object at five or six metres or so and, second, for an object at the reading distance. In certain cases, e. g., in divergence paralysis, it is necessary to make the test at several different distances, as at five, one, 0.5, 0.25, and 0.1 metre.

The test object should be sharply defined and flush with its background or nearly so. A good one is a small, bright, light set against a wall or screen or a small spot on a large board. For near points the most convenient object is a small dot on a large card.

The patient is directed to fix the object sharply, a card is passed from one eye to the other (*alternate covering*), and the deviation of the eye behind the screen (or the opposite movement of redress when the eye is uncovered) is noted. Prisms are then placed before one eye in such a way as to correct the deviation, and are added to until the deflection is not only abolished but reversed. The prism that just reverses the deflection is as a rule two prism degrees stronger than the one that actually corrects the deviation. Thus if the eye deviates out behind the screen, we apply prisms, apex out, and if a prism of 12 prism degrees just suffices to make the eye deviate in, we say that there is an outward deviation of 10 prism degrees.[4]

We may measure a vertical and a lateral deviation at the same time by the screen test. Thus if there is a hyperphoria combined with an esophoria we can measure both at once by applying a prism, apex up, combined with a prism, apex in, and changing both prisms until each deviation is just overcorrected.

When alternate covering has shown the presence of a deviation and its amount, we next ascertain whether this deviation is a squint or a heterophoria by the method of *binocular uncovering.* This is conducted as follows: The patient still fixing the test object, we cover one eye, say the right, and then uncover both. If, when the right eye is covered it deviates out, and the left eye remains steady, we are dealing with a *heterophoria* (exophoria). This finding is confirmed if, when we remove the screen (binocular uncovering), the right eye moves in again (redresses) and the left still remains steady. That is, if *one* eye moves we have heterophoria. If when the right eye is covered it deviates out and the left eye at the same time moves in—i. e., if *both* eyes move—we are dealing with a *squint* (exotropia) of the *left eye.* And in this case when the eye is uncovered again, usually the right eye will move in (redress) and the left eye will move out. Lastly, if when the right eye is covered (and again when it is uncovered) *neither* eye moves, there must be a *squint* of the *right eye* —provided of course that alternate covering has shown the presence of a marked deviation.

By repeatedly trying binocular uncovering, first screening the right eye and then the left, we can find out whether a squint is always confined to one eye or is alternating, and also whether it is intermittent or constant.

Finally, the test may be used to determine the difference between the primary and the secondary deviation. In a paresis of the right externus, for example, the prism which, placed base out, before the right eye, just suffices to abolish the deflection behind the screen, measures the primary deviation; and the prism which does the same thing when placed before the left eye measures the secondary deviation.[5]

The screen test fails whenever one of the eyes cannot be made to perform central fixation. This occurs mainly in eccentric fixation due to a large

[4] Linear [illegible] is conducted on the same principle, but lacks both accuracy and precision.

[5] Duane, The Proper Measurement of the Primary and Secondary Deviation in Paralysis, [illegible], October 1, 1904.

central scotoma or in high grade amblyopia or actual blindness of one eye.

c. Perimeter and similar tests (Priestley Smith's tape test, Hirschberg's test). In Hirschberg's test the patient is made to look at a lighted candle placed one foot in front of his eyes. The observer stationing himself behind the candle notes the position of its reflection in the cornea of the squinting eye. If it is at the margin of the cornea we assume that there is a squint of six mm. (i. e., about 45° of arc); if it is half way between the centre of the cornea and the margin it is three mm., etc.

In the perimeter test, the squinting eye is placed at the centre of a perimetric arc, and the good eye is directed to look at a light twenty feet distant and in line with the squinting eye and the zero point of the arc. The observer carries another light along the arc of the perimeter (keeping his own eye right behind the light), and watches the reflection of the latter as it sweeps across the cornea of the squinting eye. When the reflection occupies the centre of the cornea the position of the light on the perimetric arc indicates the angle of squint.

Similar in principle is Priestley Smith's tape method, except that the good eye is made to follow an object along a tangent scale, until the reflection of an ophthalmoscopic mirror, through the peephole of which the observer is looking, occupies the centre of the cornea of the squinting eye.

In all these methods allowance must be made for the amount of the angle gamma.[6]

No one of these methods at all approaches the screen test either in accuracy or in convenience. Nor do they show, or at least they show very imperfectly, the character of the squint (whether alternating or constant, periodic or continuous). Nor can they measure a vertical and a lateral deviation simultaneously, as the screen test does. Nor can they measure well, as it does, low degrees of squint, and they cannot measure heterophoria at all. Nor can they show, as it does, the varying amount of the deviation in different directions of the gaze. Add to this the fact that the application of the screen test is extremely simple and requires no apparatus whatever but a few prisms, that it can be applied readily in children, that it can be used in cases of paralysis to show the amount of primary and secondary deviation, and finally that it is the easiest and most accurate means of checking the result in an operation, and I think it clear why I should advocate its use as a routine method to the exclusion of the other means of measuring deviations.[7] The latter, indeed, would seem to find their application only in the rare cases in which the screen test is inapplicable because of eccentric fixation or monocular blindness.

D. TESTS OF BINOCULAR VISION.

These are used to determine, first, whether the patient has *binocular vision* or whether he sometimes or always suppresses the image of one eye; second, in case he has binocular vision, whether he has *binocular single vision* or *diplopia;* third, in case he has diplopia, how much and of what sort it is and what deductions can be drawn from it as to the amount and kind of *deviation* present.

In the application of these tests the following facts must be borne in mind:

1. There are various grades of binocular vision, ranging all the way from absolute and invariable suppression to complete stereoscopic vision. It should be noted that a patient may by nearly all the tests show suppression, and yet with one or two, especially the amblyoscope, show not only binocular vision, but actual fusion and even stereoscopic vision (perception of depth and relief). Again, it should be remembered that the patient can very often be got to recognize diplopia, so long as the two images are somewhat separated, but suppresses one as soon as they are brought close together. This applies both to images that are separated by prisms so that a foveal image in one eye is compared with a nonfoveal image in the other, and to images separated by the amblyoscope, which are both foveal.

2. We must distinguish between diplopia that is spontaneous and diplopia which is elicited only by tests, i. e., between a diplopia that is and one that is not habitually overcome.

3. We must distinguish between the diplopia that is indicative of a deviation and one that is produced in normal eyes by prisms or other artificial means.

4. We must distinguish between a diplopia that is indicative of a pathological deviation and physiological diplopia (doubling of objects that are nearer or more remote than the object looked at).

5. We must, of course, distinguish between monocular and binocular diplopia.

6. We must have regard to the relation existing between the amount of deviation as shown by the diplopia tests and the amount shown by the objective methods, particularly the screen test. Any marked and constant discrepancy between the two indicates a faulty projection due to retinal incongruence[8] or to psychic factors, which are often hard to interpret. Such a discrepancy is of considerable importance when we are considering the question of treatment. It may, for example, act as a bar to operation.

7. The measurement of the diplopia, however produced, is effected either on a tangent scale (in which the linear distance between the images is translated into terms of arc) or by means of prisms. In applying the latter we must remember, of course, the facts already stated as to the relations existing between prism degrees and degrees of arc.

Furthermore, when a diplopia is almost overcome by a prism, the eye itself may overcome the rest, so that the prism which seems to measure the deviation really does not always do so.[9]

8. The tests should in general be made at least two distances, i. e., at five or six metres (at distance tests) and at about twenty-five cm. (near tests). In some cases, as already noted in speaking of the screen test, it is necessary to make them at several distances (five, one, 0.50, 0.25, and 0.10 metre).

9. The test object used must be small, sharply

of a perimetric arc and making it fix the zero point of the perimetric scale. A light is then carried along the arc until its reflection occupies the centre of the cornea. The position of the light on the perimetric arc shows the amount of the angle gamma.

[7] See for further information on this subject, Duane, On the Value

[8] Incongruence is not used here in the sense of an actual shifting of the macula. I have never seen a case which, I thought, was to be explained by the presence of a false or new macula.

[9] This is especially true when prisms are used to correct diplopia appearing spontaneously or evoked by the red glass; it is occasionally true of diplopia produced with the Maddox rod and phorometer.

defined, and on a blank background, so that the patient can fix it sharply and shall not confound it with its surroundings. For distant tests the best object is a small, bright, light on a large black background; for near points a very minute light on a black background or for most tests better a small dot on a large card. Such a dot is better than the old line and dot, or cross, or any combination containing lines, since such a combination often sets up a fusion impulse which makes the patient draw the images together.

The tests of binocular vision are:

a. The *parallax test.* This very useful test is the subjective correlative of the screen test. In applying the latter we notice a to-and-fro jump of the eyes as the screen is passed from one eye to the other. The patient at the same time notices that the object he is viewing makes a similar jump.[10] In exophoria, for example, as the card is passed from one eye to the other, the object seems to move with the card; in esophoria it moves opposite; in hyperphoria it moves up or down. The prism that just corrects this apparent jump just measures the deviation.

The test is very precise, deflections of a quarter of a degree being measurable in this way. It is also accurate. It has further the advantage that vertical and lateral deflections, simultaneously present, can be simultaneously measured by a combined lateral and vertical prism. But its greatest value lies in the fact that it is a subjective test which is made at the same time and under the same conditions as the objective screen test. If there is any real discrepancy between the subjective projection of images and the objective position of the eyes—in other words, if there is a faulty projection—it ought to show in a notable and constant difference between the findings of the two associated tests, the parallax and the screen. This, indeed, is occasionally, but only occasionally, the case.[11]

b. Diplopia in primary position, occurring spontaneously or elicited by the red glass, may be measured either by determining the linear separation of the images or by prisms. Such diplopia is usually variable in amount because the patient involuntarily makes more or less successful attempts to overcome it. This fact, while it makes the test of less value as a measure of the deviation, is of importance as indicating how great or how little the tendency to fusion is.

c. Maddox rod. This is only another form of the diplopia test, in which the two images are rendered so widely dissimilar in character that the patient has little tendency to fuse them, and hence the amount of diplopia is a true indication of the amount of deviation. It is a well known and justly valued test.

d. Quite similar in principle is *Stevens's sphere,* which is serviceable in measuring small deviations and has the advantage that it shows both the vertical and the lateral deviation if both are present.

e. The *Maddox near vision phorometer,* based on Snellen's principle of neutralizing colors.

f. Maddox's *wing test.*

g. The *phorometer* and other instruments depending on the old Graefe method of separating the images by prisms. Various forms of phorometers are used, the best probably being those in which the prisms are applied before one eye only. The test is a very serviceable and valuable one. It is apt to give an overestimate of the deflection of near points unless the test object is sufficiently defined and minute and the patient is directed to focus on it sharply. The phorometer can be replaced by a round prism which is set in a carefully levelled trial frame and is revolved until the two images are truly level or truly vertical as the case may be. If a 12 prism is used, each 5° of rotation in the trial frame represents about one prism degree of deviation.[13] A sufficiently accurate result, if the deviation is of any amount, can be secured by holding a square prism of 8 or 10 prism degrees vertically or horizontally before one eye and, if the images are not in line, adding a prism until they are. The latter prism, of course, measures the deviation.

h. The *clinometer* (either Stevens's clinometer or the Maddox rod clinometer[14] or Maddox's wing test) and the Maddox *double prism* are used to determine and measure that peculiar form of diplopia produced by lack of parallelism of the corneal vertical meridians. The deviation (called torsion or declination) produced by such a lack of parallelism has seemed to some an important cause of reflex symptoms. It has not seemed so to me, and hence I have been less inclined than they to lay stress on the tests for the detection of these anomalies; they are, however, of importance in obscure cases of paresis of the elevators and depressors, since the tests serve to show in which eye a pathological torsion exists and which eye, therefore, is affected by the paralysis.[15]

i. Tests used to demonstrate the *degree of binocular vision* present and the patient's capacity for *fusion.* Such are the red glass, the amblyoscope, the stereoscope, bar reading, Hering's test, and other tests[16] recently devised. Of these the *amblyoscope* and *stereoscope* (especially the former) are particularly valuable for clinical purposes, although *bar reading* is also very useful. In squint cases these tests should always be employed, and repeated trials made with them to determine the progress that the patient is making in the acquisition of binocular vision.[17] The amblyoscope is also used as a test of divergence and convergence (see below, Tests of Binocular Movements), and, if provided with a graduated arc, indicates quite directly the angle of squint in degrees of arc. The amount of vertical deviation can also be determined with it.[18]

[10] It is essential, of course, that the object [illegible] against its background, so that the element of projection [illegible] come into play.

[11] For other advantages of the parallax test see [illegible] of Ophthalmology, XXV, p. [illegible] 1896.

[12] Thus if a [illegible] has [illegible] apex placed at [illegible] make the [illegible] exophoria of one prism degree.

[13] Various forms of this have been devised by Price, Brewer, Stevens, Parker, and Duane. [illegible] rod set in a carefully levelled and accurately graduated trial frame.

[14] The tilting of the false image in cases of paralytic diplopia gives similar information. But this tilting upon which so much stress is laid in the textbooks is usually difficult to demonstrate [illegible]

[15] The diploscope, Harman's test, etc.

[16] [illegible] but this is a matter with which this paper is not concerned.

[17] [illegible] vertical adjustment screw until the two pictures appear to him on a level. [illegible] now appear off level, and the prism that makes them level will [illegible]

Several of the tests of binocular movements (especially those of convergence and divergence) are tests of binocular vision in that they show how strong the patient's fusion sense is, i. e., what and how great are the efforts that he makes to overcome diplopia and secure true single vision.

E. TESTS OF BINOCULAR MOVEMENTS.

These are tests to determine whether the two eyes move in concert so that binocular fixation and binocular single vision can be secured in all the positions in which the eyes can naturally be placed.

These tests are of the greatest importance, yet they are too often neglected, the observer being content to note whether there is orthophoria or not in the primary position. But as our eyes are really never at rest, and as our ability to see distinctly and with comfort depends materially on the ease and harmony with which the two eyes move together in executing the various movements, it is obvious that any derangement of these movements must be of importance and any examination which omits their consideration is fatally imperfect.

The tests comprise:

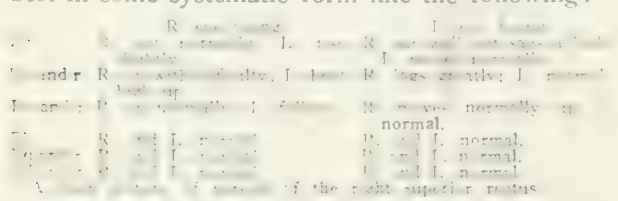
I. *Tests of parallel movements.* Parallel movements can normally be made in all directions, but owing to the special way in which the twelve muscles that move the two eyes are paired, there are for diagnostic purposes six cardinal directions of the gaze, viz., right, left, up and right, up and left, down and right, and down and left. The following tests, therefore, should always be applied in each of these six directions.[19] The tests of parallel movements are:

a. Screen deviation in secondary positions. The kind and amount of deviation, both lateral and vertical, are determined by the screen test (method of alternate covering, *vide ante*, p. 411) in each of the six cardinal positions of the gaze. This is usually done with a small dot on a card held ten inches from the eyes.

b. Comitance behind screen. First one eye and then the other eye is screened, and the uncovered eye is made to follow a dot on a card carried in each of the six cardinal directions. The presence of either lagging or overshoot of the covered eye as it blindly follows the other is noted and so also is any lagging of the uncovered eye as it attempts to follow the object.

Instead of keeping the head fixed and moving the object of fixation about, we may in this and the preceding tests keep the object still and make the patient, as he steadfastly fixes the latter, move his head to the right, left, and obliquely. This is the most convenient way of making the test for distance.

This is a very important test in cases of paralysis, and the findings should be carefully recorded—best in some systematic form like the following:



[19]Not, for example, simply in vision to the right, left, up, and down, as is often done. Tests made thus do not afford decisive

c. Comitance in binocular vision. Made like the previous test, but with both eyes uncovered. It is not as good a test as the preceding, because with both eyes uncovered, the patient may suddenly change fixation from one eye to the other and in so doing suddenly change the amount and character of the deviation; and also because, with both eyes uncovered, his tendency to overcome the diplopia will make him conceal more or less of the deviation and so give varying and somewhat uncertain results.

The foregoing three tests are fixation tests determining the binocular excursions and the field of binocular fixation. The subjective counterpart of these objective tests is the following.

d. Diplopia in secondary positions. Determination of the kind and amount of diplopia in each of the six cardinal directions and consequent delimitation of the field of binocular single vision. This is best accomplished on the *tangent plane*.[20] This is a curtain black on one side and white on the other. The white side carries a perimetric diagram and is also divided as a checkerboard of two inch squares. The patient faces the black side with his eyes just thirty inches from the curtain and on a level with the centre. A red glass is placed before his right eye, and keeping his head still he is made to follow a minute electric light carried over the curtain in different directions. The moment he sees the light double, a black pin is thrust into the curtain at the site of the light itself, and a white pin at the point indicated by him as the site of the false image. The distance between the double images and their direction from each other is shown on the perimetric diagram on the reverse side of the curtain, and a plot of the diplopia and of the field of single vision can be taken off on a suitable diagram.

This apparatus not only enables us to determine the presence, kind, and amount of diplopia, but also to tell which eye fixes. For if under the conditions noted, the red light appears to be at the actual site of the electric light itself, then it is the right eye that is fixing, and in the reverse case it is the left.

By shifting the red glass we can generally make the patient change fixation from one eye to the other. In this case the diplopia mapped out when one eye is fixing indicates the primary, and that mapped out when the other eye is fixing, indicates the secondary deviation.

II. *Tests of convergence.* There also are highly important. They comprise:

a. Comparison of *deviation for distance* and *deviation for near* as determined by tests under B and C, and especially by screen, parallax, phorometer, and Maddox rod. A deviation which increases notably in near vision, i. e., a directly periodic deviation, argues in general an anomaly of convergence.

This comparison is of the utmost importance and should never be neglected in the routine examination of a case of motor anomaly. Failure in this regard has vitiated many a diagnosis.

b. Convergence near point. This is determined by carrying a fine object up to the eyes and urging the patient to converge on it as far as possible. The normal convergence near point should not be over 5.5 cm. from the eyes except in presbyopia when it

[20]Transactions of the American Ophthalmological Society,

may be eight or even nine cm. A near point, persistently remoter than this, means a convergence-insufficiency or an actual divergence squint.

In certain cases of divergent squint in which the patient can never actually converge the eyes so as to secure binocular fixation, he yet will make the effort to converge and may do so down to a comparatively near point, the eyes visibly coming together, although not perfectly, until the object is brought to perhaps four or five inches from the eyes, when the latter suddenly give up the effort and diverge widely. The patient is then said to have a *relative* though not an absolute near point of convergence.

The estimation of the convergence near point is an important matter, never to be neglected in making a routine examination of the eyes.

c. Prism convergence, or as it is commonly, though less properly called, adduction, is the ability to overcome prisms, base out. It is usually determined for distance only, although it may also be determined for near points, especially when we are trying to ascertain the effect of prism exercise in relieving an exophoria.

The prism convergence can usually be run up to fifty prism degrees or more by practice. In the first trials the results vary greatly and the variations are evidently not due to any real variations in the muscular power. Hence the test is of significance only when on repeated trials the patient cannot be made to overcome more than twelve or at most fifteen prism degrees, and when even that small degree of convergence is made with effort and maintained with difficulty. In such cases the convergence near point pretty nearly always will be found to be remote.

In general, except for measuring the results of prism exercises, it is not necessary to determine the prism convergence, if the convergence near point is normal.

d. An idea of the patient's converging power is also furnished by his *ability to overcome crossed diplopia,* however caused, and by his ability to maintain fusion with the *amblyoscope,* when the tubes of the latter are converged.

III. *Tests of divergence.* These are also of great importance and should never be omitted in the examination of ordinary cases. They comprise—

a. Comparison of the *deviation found for distance* and for *near points.* A deviation, which, as determined by the screen, parallax, or phorometer, is essentially greater for distance than for near, i. e., one which is inversely periodic, argues a divergence anomaly or possibly an anomaly of the external recti.

b. Prism divergence (usually called abduction), i. e., the ability to overcome prisms, base in, while looking at a distant object. This ability, which usually varies between three and eight (usually between four and seven) prism degrees is a quantity, usually constant on repeated trials and seems to be a true measure of the diverging power. It is an important test.

c. Ability to overcome homonymous diplopia, however caused, or ability to maintain fusion with the *amblyoscope* when the tubes are diverged.

IV. *Tests of ability to diverge in a vertical plane* (*supravergence*). These have always seemed to me of quite subordinate importance, as the information they give is given more accurately and better by other tests. They comprise:

a. Ability to overcome *prisms, base up or down.*

b. Ability to overcome vertical diplopia, caused otherwise than by prisms.

V. *Ability to perform torsion movements.* This may be tested by one or the other forms of clinometer or by the Maddox rod.

AUTHOR'S ROUTINE.

This is a formidable list, and one might suppose from it that to examine for motor anomalies is a very time consuming process. Such is not the case.

In the ordinary case with apparently binocular vision I have found that for purposes of diagnosis it is quite sufficient to determine the following:

1. The deviation for distance by
   A. The screen and parallax simultaneously.
   B. The phorometer or Maddox rod.
2. The prism divergence.
3. Deviation for near by
   A. The screen and parallax simultaneously.
   B. The phorometer.
4. The convergence near point.

If the convergence near point is remote I may also determine:

5. The prism convergence for distance (occasionally also for near).

This routine can be gone through with in four or five minutes. It determines with sufficient completeness the conditions of monocular and binocular fixation and the ability to secure binocular fixation and binocular movement.

In complex cases with apparently binocular vision, I further measure

6. The amount of spontaneous diplopia present and the patient's ability to overcome it.
7. Screen deviation in the six secondary positions.
8. Comitance behind screen in the six positions.
9. Diplopia on tangent plane in the six positions.

For paralytic cases or those with marked insufficiency, these four tests last named become particularly important, and in certain cases there may also need to be determined:

10. The torsion (by clinometer or Maddox rod), either in monocular or binocular vision.
11. Range of monocular excursions (perimeter or tropometer).
12. Faulty projection (undershoot or overshoot in attempted monocular projection).

In squint cases in which binocular vision is wholly or partially absent, and in which, therefore, the usual diplopia tests (phorometer, etc.) fail, I determine with particular care:

1 and 3. The deviation for distance and near by the screen test and parallax, ascertaining by these tests whether the squint is monocular or alternating and whether it is constant or intermittent. By comparing the amount of deviation found for distance with that found for near and ascertaining whether it is squint in both cases or is only a heterophoria at one distance, I also determine whether the squint is periodic or continuous and what its probable origin is.

4. The convergence near point, ascertaining in cases of divergent squint, whether this near point is absolute or relative.

7. Screen deviation in the six secondary positions.

8. Comitance behind screen in the six positions.

11. Range of monocular excursions in the six cardinal directions by inspection and occasionally also by the perimeter or tropometer.

13. The kind of binocular vision and the ability to secure fusion, as tested by the amblyoscope, stereoscope, and bar reading. The amblyoscope is particularly useful also in showing, first, the amount of squint in degrees of arc, and, second, the patient's ability to overcome the squint by converging and diverging, while still maintaining fusion.

It will be observed that the routine above outlined requires very little apparatus. Some square prisms, a Maddox rod, a simple form of phorometer, an amblyoscope, and a tangent plane curtain (which can be of home manufacture) are all that are really required. For bedside examinations even these may be dispensed with, and a satisfactory test made with half a dozen square prisms, a Maddox rod, a red glass, and a little electric light.

139 East Thirty-seventh Street.

THE FUTILITY OF PHENOLSULPHONEPHTHALEIN AS AN INDICATOR OF RENAL FUNCTION.*

By Martin W. Ware, M. D.,
New York,
Adjunct Surgeon, Mount Sinai Hospital.

Phenolsulphonephthalein is the latest creation for testing renal function, wherefore it is pertinent to inquire into the assertions made concerning its efficiency. With the minority who dissent as to its potency, I cast my lot in my endeavor to single out the underlying fallacies both theoretical and practical, which purpose in the first instance is best served by refuting the statements set forth in the original communication of Rowntree and Geraghty (1).

The originators of this test concede that urinary secretion is still a matter of controversy and an exceedingly complex procedure, hence we must regard as contradictory and futile the vaunted simplicity of this quasi colorimetric test offered for interpreting the complex mechanism of the kidney and its still more complicated output. The belief is fast gaining ground, as naively expressed by His (2), "that urine is nigh a physically impossible solution." The chief claim for the drug is the readiness with which its elimination "chemically unaltered" is to be estimated colorimetrically. The interpretations of the colorimetric reaction I impugn, for I believe it ought to be other than set forth by the originator and for the following reasons.

Sohon (*loco citato*) is quoted as assigning among the properties of phenolsulphonephthalein that "it has a stronger avidity as an acid than phenolphthalein, and its alkaline solution is of a purer red than that of phenolphthalein." The latter reagent used as an indicator of acidity with decinormal sodium hydrate is, we see, surpassed in its delicacy by phenolsulphonephthalein. After injection into the body the elimination of the latter is ascertained by its intense color reaction in the alkaline solution, one drop of a twenty-five per cent. solution of sodium hydrate, and with the aid of a colorimeter the percentage of pure drug eliminated is estimated. I believe a more consistent interpretation to be, that *this is merely a test of the degree* of the acidity of the urine, and which would be better and more accurately interpreted by titration with 0.1 normal sodium hydrate. For what matters it whether the phenolsulphonephthalein is added to the urine already excreted, or becomes an integral part of the urine elaborated within the kidney. The avidity for acid assigned to phenolsulphonephthalein (over that of phenolphthalein) is satisfied alike in either instance.

Cushny (3), in his study on acidity of the urine, points out that "under no conditions does urine become alkaline to phenolphthalein indicator." This argument further effectively offsets any counterclaim that might be advanced, because phenolsulphonephthalein is injected as an alkaline solution.

On the contrary, this reversion of the alkaline solution of a Bordeaux red color into a yellow at elimination, is, it appears to us, a most conclusive proof of what Cushny has endeavored to advance as to the mechanism of that arch characteristic of renal function, namely the production of an acid reacting secretion from the alkaline blood. Indicators are used to test the acidity and depend on the fact that their acid radicles (anions) have different strengths of affinity for a base (cation). Cushny, cited, used phenolphthalein as the indicator, but the greater avidity of the acid radicle (anion) of phenolsulphonephthalein, i. e., its greater adsorption of anions, *a fortiori* makes it superior to phenolphthalein as an indicator; for Abel and Rowntree (4) admit that the presence of the sulphur dioxide group has increased its activity. It will furthermore be seen by consulting the statistics offered by the authors (Geraghty and Rowntree) that in the few cases where the urine is reported as alkaline (*to litmus*) the reaction to phenolsulphonephthalein followed, which bears out the observation of Cushny, that under no circumstances is urine alkaline to phenolphthalein.

Now it may be held that such an inference is not justifiable for phenolphthalein when introduced *per os*. Bastedo (5), however, asserts that he has repeatedly found it in the urine; "an alkaline urine after small doses by mouth being of a pink color from its presence." In a later communication Rowntree (28) also admits that phenolphthalein, given in moderate quantities subcutaneously in oil, or intravenously, is excreted both in the urine and in the bile.

It would carry us beyond the scope of this paper to quote any further from the most conclusive thesis of Cushny, which has so important a bearing on this color reaction, other than to cite his conclusions that "the acidity of the urine is a process of hydrolytic dissociation carried on in the tubules, and that the percentage of phosphates (i. e., phosphoric acid anions responsible for urinary acidity) and the percentage acidity to phenolphthalein (anion) run more or less parallel to each other. Quite recently, and likewise more simply expressed by Botazzi (23), "certain kidney cells have an elective affinity in abstracting acid from the blood. Acidity of the urine is thus brought about, for the blood returned from the kidney is richer in bases (cations)."

Dresser (6), in 1885, showed, by injecting acid fuchsin (which is colorless in alkaline solutions) into dorsal lymph sac of frogs, that the urine became red in an hour or two, that the red color was confined to the fluid collecting tubules. After repeated injections the glomeruli still remained colorless, but, in the convoluted tubules, the red color

*Read before the Genitourinary Section, New York Academy of Medicine, December 3, 1908.

appeared both in the lumen and in the cells lining it. There can be no doubt, therefore, that the glomerular filtrate is alkaline and becomes acid in the convoluted tubules. Geraghty (7), in a discussion at the American Urological Association, says, "with regard to the part of the kidney which has to do with the excretion of phthalein, we have been able to determine that the renal tubules alone excrete phthalein and the glomeruli, little if at all."

Finally, by consulting the tables of Geraghty and Rowntree (*loco citato*), in which phenolsulphonephthalein was injected in normal cases, in medical and surgical diseased kidneys, and in prostatic hypertrophy patients, the overwhelming preponderance of urine acid in reaction, is noteworthy and stands out conspiculously against the isolated instances where it was alkaline, and just in the latter class, data as to the amount of drug excreted are deficient.

Judging from all the foregoing it is presumptuous, on the basis of the colorimetric output, to read the degree of functional activity. A more logical interpretation, *à priori*, is that the injection of phenolsulphonephthalein is an *acidometric test* of the renal output.

DIURESIS AND ACIDITY.

Dresser (*loco citato*) proved that "diuresis decreases the acidity of the urine, and that this decrease is proportional to the degree of diuresis, no matter how the increased flow of urine is brought about." Cushny (p. 203, *loco citato*) is of the same opinion, "the reaction of the urines varies within strict limits in diuresis." Jordan (24) and Hinman (25) have recently shown what bearing the acidity of urine has to the elimination of the formaldehyde content of hexamethylenetetramin. Being so relevant to the preceding contention, I will quote in the abstract some of Hinman's experience: "To test the acidity, ten c. c. of urine were titrated against tenth normal sodium hydrate, using phenolphthalein as indicator. The acidity varied within very wide limits. Of 231 examinations, the acidity registered between 0.1 and 7.9 per cent., the average was 3.1 per cent. This is in keeping with the wide latitude observable in connection with phenolsulphonephthalein output. Hinman also reports that a patient on forced water will show a lower formaldehyde concentration, compared to a patient on the same dose but without polyuria. In the former case, there is not sufficient acidity. This signifies Hinman's belief and knowledge that diminished acidity is incident to polyuria.

First admitting the need of forcing the water, and then denying, is apparent in the following patent contradiction of Geraghty and Rowntree (p. 596). In the administration of the drug, the instruction reads: "Twenty minutes to half an hour before administering the test, the patient is given 300 to 400 c. c. of water, in order to insure a *free urinary secretion; otherwise delayed time of appearance* may be due to lack of secretion." Yet a little later (p. 604), we come upon this statement: "The excretion of the drug does not run parallel to the excretion of water. . . . It is immaterial so far as the excretion of the drug is concerned whether the urinary output is fifty or 500 c. c."

In all the cases of tuberculous kidney subjected to phthalein test, polyuria being a feature, this increased diuresis, as we have seen, is identical with a diminished acidity, hence the phenolsulphonephthalein output is low, as indicated by the figures.

In prostatic hypertrophy, polyuria is a feature in consequences of which diuresis, acidity is diminished and naturally the phenolsulphonephthalein is diminished. Strikingly exemplified in the very example of prostatic hypertrophy cited, Case XIV, Table VII, attention is directed that here the urinary output was 2,000 to 3,000 c. c.

In chronic interstitial nephritis (contracted kidney) there is a polyuria; thus the acidity of urine is diminished and consequently, as stated, "the decrease of phenolsulphonephthalein output is most marked in the interstitial variety. Interstitial as well as parenchymatous inflamation abounds in renal tuberculosis; hence the polyuria and diminished acidity are synonymous with low output of phenolsulphonephthalein.

Again, in diabetes insipidus, the diminished output (Geraghty and Rowntree, p. 608) bespeaks diminished acidity incident to increased diuresis. If diabetes mellitus with its coincident polyuria does not show diminished output (acidity), the contemporary acidosis may be explanatory of this.

In a series of observations by Sanford (8), in table No. 3a, the most marked diminution in the output of phenolsulphonephthalein occurred in urine which was alkaline. I cite as follows: Case K 6, right renal calculus; K 10, left cystic kidney with calculus; K 13, right kidney infarct; all were alkaline (to litmus) and obtained by ureter catheter. The colorimetric reading of the first was but four per cent.; that of the latter two, but a trace was excreted in the hour. Here again we revert to the observation of urine alkaline to litmus, yet reacting acid to phenolsulphonephthalein.

Finally Geraghty and Rowntree (p. 648) instance the use of thirty milligrams—six times the arbitrary dose of phenolsulphonephthalein—to show that the reserve functional power can thereby be estimated.

This patient, No. 16, Table VIII, a man aged twenty years, had a staphylococcus pyelonephritis of the right kidney. The ureters were catheterized and thirty mg. of phthalein were injected subcutaneously. In the first hour the left kidney excreted 29.1 per cent. of the drug and the right 6.4 per cent. The test continued for another hour, showing 14.2 per cent. excreted by the left kidney and 7.1 per cent. by the right kidney.

Continuing the observation for two hours in this case was equivalent to performing separate tests with small and larger doses. During the first hour when the amount of drug in the blood was large, the healthy kidney responded with a large excretion, whereas the diseased kidney did only a small amount. In the second hour when the amount of drug in the circulation was smaller, the work of the healthy kidney decreased proportionally while the diseased kidney continued to excrete at the same rate. This shows that the diseased kidney could excrete no more when the dose was large than when it was small. In other words, the diseased kidney in this case was incapable of response to extra demands; or in other words the diseased kidney was working at its maximum and possessed no further reserved force. On the other hand, the demand for increased work was answered by the healthy kidney.

Another interpretation is permissible here: This goes to show that when the amount of phenolsul-

phonephthalein was large, the acid avidity (i. e., greater adsorption of acid anions) was greater, and as the amount in the system diminished, there was less avidity, and this it is, which is demonstrable in the healthy kidney where the acidity lessened (diminished output) in the second hour, but the diseased kidney was constant in its output.

In reality (see statistics of Geraghty and Rowntree), we see that the diseased kidney eliminated more drug in the second hour—7.1 per cent, than in the first—6.4 per cent. Consequently the explanation of the authors must be regarded as most artificial, in other words the explanation that the kidney remaining after nephrectomy exemplifies in its behavior to phenolsulphonephthalein, its adequacy, ergo reserve power, because it, the sole source of any urinary secretion, eliminates twice as much phenolsulphonephthalein as it did before. Eisenbrey (*vide infra*) says, "this increased elimination is of no clinical importance." Here, too, there is greater adsorption of the acid radicle (anion).

EXPERIMENTAL REFUTATION.

As a connecting link between the aforesaid theoretical, yet last to follow, clinical proofs of the adequacy of the dye test, I would direct attention to valuable research work of Eisenbrey (9, 10) on Experimental Nephritis and the Elimination of Phenolsulphonephthalein. He says:

The anatomic appearance of the kidney varies with the poison (used to produce it) but bears no relation to the *phenosulphonephthalein elimination*. Marked anatomic alteration is compatible with normal elimination of all of these substances (total nitrogen and chlorides) and with freedom from the symptoms of intoxication (vomiting). But with the onset of the symptoms of vomiting a *marked decrease* in the *elimination of phenolsulphonephthalein occurs as a rule*. Hence, the elimination of the test dye is diminished in the so called spontaneous nephritis and in experimental nephritis due to potassium chromate, uranium nitrate, cantharides, diphtheria toxin, and arsenic, and in those lesions caused by snake venom, hemolytic serum, prolonged anemia, and extensive reduction of the kidney substance. Therefore, the phenolsulphonephthalein test would seem to be a better indicator of the ability of the kidney to eliminate toxic substance responsible for the symptoms of renal insufficiency than either the anatomic changes or the elimination of total nitrogen or of chlorides.

The *increased elimination of the dye* occurring after small doses of various irritants, which is frequently characteristic of the early stages of a severe nephritis, and *which is seen* also several days *after unilateral nephrectomy*, would appear to have an important relation to the problem of kidney function, and although probably of no clinical importance, it is worthy of further study as a phase of renal activity.

A very severe arraignment against phenolsulphonephthalein is met in this experiment: Its elimination (phthalein) is not diminished, but is increased in the presence of renal lesions caused by nephrotoxic immune serum. This lesion is a very definite degeneration of tubular ephithelium, accompanied by an albuminuria of severe grade and by abundant cast formation, in short a very typical experimental nephritis.[1] It stands as the only lesion studied in this series which is not characterized by a diminution in the elimination of the test dye, and for this discrepancy no satisfactory explanation can be offered.

[1] [illegible] of the [illegible] [illegible] [illegible] [illegible] increased diuresis, but no data are presented as to reaction of the specimen.

CLINICAL REFUTATION.

Functional tests were called into being to lower the postoperative mortality setting in very early after unilateral nephrectomy by death from inadequacy of the renal relic.

As pointed out by the writer (11), none of the earlier functional tests fulfilled this requirement, for as low a mortality was attained before their introduction as subsequent to their use, and I now charge the same inadequacy of phenolsulphonephthalein to effect this. For none of the advocates of phenolsulphonephthalein have adduced along clinical lines statistical evidence to show a fall in the percentage of deaths following nephrectomy, controlled by phenolsulphonephthalein output, which is after all the paramount issue of its efficiency. In this regard the burden of proof rests upon the sponsors of this dye test, not as Sanford (8) maintains, that "the detractors of this sort of work have been men whose experience with it has been too limited to make them competent judges." In actual practice the reverse obtains. The men who have had the widest clinical experience again and again, and they are in the majority, report large numbers of nephrectomies, relying only on such data of the segregated urines as are familiar in the daily routine.

The writer offers his modest number of twenty-four nephrectomies without any mortality, based upon the old established urinary analysis.

Among the most recent to report his low mortality statistic based on extended clinical experience, is Fullerton (12), guided by the following routine:

The methods in general use for establishing the kidney function are numerous, but in my own practice, I have tried to simplify matters as far as possible. If the urine obtained by ureter catheter from the presumable sound kidney has a specific gravity 1,015 or over, is free of albumin, pus, and blood and is secreted in normal quantity, having a regard to the fact that the other kidney, being diseased, is as a rule secreting a larger amount of a lower specific gravity, I have no hesitation in removing the offending organ. Although I adopt this as a broad rule, I have as will be seen departed from it in a few instances.

In the mortality statistics referred to, conspicuously absent as causes of death are cases of anuria. Isolated instances, on the other hand, are brought forward to show the prowess of phenolsulphonephthalein, but in none is such information an advance upon what has been learned of the specific gravity, diuresis, urea excretion, and microscopic analysis. Dr. Joseph Rilus Eastman, of Indianapolis, says:

After some experience in the use of the phenolsulphonephthalein test, I have come to the conclusion that it misleads as often as it leads to a better understanding of the kidney lesion. Nobody knows whether the standards of Geraghy and Rowntree are precise or not; they are entirely arbitrary. The urea test is more precise than any color test. When we deal with urea, we are dealing with a normal, organic, metabolic product of the kidney. When we deal with phenolsulphonephthalein or indigocarmin or methylene blue, etc., we are dealing with substances which are entirely foreign to the kidney. The kidney reacts in a certain way to the coloring material; because the kidney eliminates for instance, the phenolsulphonephthalein with certain rapidity, it is no evidence that the kidney can eliminate the abnormal metabolic products with the same rapidity.

How disastrous supreme reliance on phenolsulphonephthalein may be, can be learned from this case reported by Cabot (14):

It is that of a young man with right renal tuberculosis. The total function was fifty-seven per cent. A week later left kidney output thirty-six per cent.; right kidney, thirteen per cent; showed apparent sufficiency of the left kidney. Five weeks later he was operated upon and the right kidney removed by a rather easy nephrectomy. After operation, he was well for three days, then developed symptoms which were attributed to renal insufficiency, and died. Two days before death, the test of kidney function showed delayed appearance of forty-five min. and an output of only five per cent. A complete autopsy was denied. The left kidney was obtained and found much hypertrophied; weight 195 grams; almost double the normal size, and microscopically as well as macroscopically normal, except that it showed extreme congestion.

This cannot be regarded as a failure for the test because it showed everything that could have been known. Had the kidney been examined by a pathologist before operation there could have been no reason to doubt the ability of this kidney to maintain life. We hesitate to term this a case of reflex inhibition and are therefore in doubt as to the cause of death. We regard it, however, as a brilliant substantiation of the accuracy of the test.

This is most specious and dangerous reasoning and finally is the plea for mercy. It shows, however, that a kidney apparently normal may, under certain conditions, show an extremely low output, a fact which has been denied. Cabot's position would have been much stronger if he had had any other data about the urine secreted, but which are not at all mentioned here.

In 1910, Dr. E. L. Keyes, Jr. (15), reported a death following nephrectomy for a tuberculous kidney, in which the healthy kidney was adjudged by phenolsulphonephthalein and all other tests to be potent in its efficiency. Death supervened in the guise of insufficiency. Yet the necropsy, macroscopically as well as microscopically, disclosed nothing. At this very time there appeared an article by Pousson (16), wherein he cites three such identical fatalities, which he accounts for thus:

The persistent changes of anatomical elements of the remaining kidney are not by themselves the cause of renal insufficiency; the general breakdown of the economy, heart failure, enfeeblement of the nervous system in lowering the arterial tension at the level of the kidney, as well as in the remainder of the body also play an important role in the diminution and complete suppression of the urinary secretions.

These remarks are not made to lead you to neglect informing yourself of the functional value of the kidney to be preserved when you are summoned to practise nephrectomy, but to teach you that all the perils are not diverted when the examination of urines shows that this kidney is in the enjoyment of its full secretory capacity.

Much more so, death supervenes from what I should designate renal anuria, strictly speaking, even when the function of the remaining kidney appeared normal from the beginning, prior to the nephrectomy. Anuria is then determined by the intensity of this acute interstitial and parenchymatous nephritis, which always develops after the nephrectomy, and constitutes the first phase of the compensatory hypertrophy. It is the excess of this inflammatory reaction, impossible to foresee, which according to myself, is everlastingly a formidable risk of nephrectomy. And I ask myself, if the violence of this mortal reaction is not more to be dreaded in a healthy kidney than in a kidney already sick, presenting on the one hand, portions more or less profoundly injured—some portions having undergone this compensatory hypertrophy, so powerful an auxiliary of renal surgery and constituting a sort of an accommodation of its anatomic elements to intoxication by the nephrotoxins and other poisons manufactured by the body.

I have seen three of my patients die from this renal anuria in whom the renal function had appeared normal from the beginning, and at the autopsy, which I performed upon two cases I confirmed that in the kidney was judged wholly intact before operation was performed (for nephrolithiasis and tuberculosis) presented lesions which were those of a subacute massive nephritis.

From what I have just propounded, you must conclude that these precautions with which we surround ourselves, in order to give our interventions upon the kidney by nephrectomy the maximum of security, this security is not and will never be more than relative.

It is from this point of view of renal surgery as in surgery of all the organs. The resistance of anatomical elements which enter into their constitution, the value of the multiple factors coming under their control, their vitality, and their reaction cannot be appreciated like the resistance of the materials of construction and the laws which govern them. The responsibility of surgeons cannot in any case be compared to that of architects and engineers. In spite of the number and value of the methods and procedures of exploring renal functions, the clinic counteracts our most solidly constructed preconceptions.

In a line with this is this injunction of Schmidt and Kretschmer (17):

At the present time we are certain that our decisions in operative procedures, whether a nephrectomy, or a nephrotomy is contemplated, or whether or not a prostatectomy is to be carried out, or whether a case is or is not a good surgical risk, are not reached by means of this surgical test.

From a clinical point of view, we shall now see that in nephritis this dye test is as worthless as one might judge *à priori* from experimental proofs Ed. L. Young (18) says:

In acute nephritis, it is of less value, as very often a fairly sick patient will eliminate a considerable amount of the drug. In chronic nephritis, inasmuch as a fairly low output is not incompatible with a considerable length of life if the kidney can be kept in a state of compensation, some additional fact must be found, which, coupled with the test will give a more accurate prognosis as regards time.

On the other hand, this internist ventures to speak more confidently of the surgical possibilities of phenolsulphonephthalein:

This method of establishing the kidney condition and its ability to stand the strain of operation, especially any operation involving the urinary tract is of the greatest value and has been proved beyond a doubt (?); and the right interpretation of reliance on this test has been the means of lowering the mortality in several of these operations and especially in prostatectomy.

The surgeon Cabot (*loco citato*) is not so sanguine as to the value of the drug in this regard:

Many of the prostatic cases with low output were not operated upon, so we can draw no conclusions, but it may be pointed out that of those operated upon and died, in none was death due in any measure to kidney insufficiency. . . . In one particular we are unable to confirm the results of the authors. Our cases (prostatic hypertrophy) failed to show the amount of improvement under drainage that they (Geraghty and Rowntree) were able to obtain.

As we have seen, Schmidt and Kretschmer (*loco citato*) also dispute the drug's value, in selecting suitable risks for prostatectomy, and the low mortalities of Freyer and Young in prostatectomy, anterior to phenolsulphonephthalein standards have not been surpassed since the advent of the red dye test. Cabot (*loco citato*), speaking as internist, says:

We believe it safe to affirm that a functional test which will show with accuracy the pathological condition of the kidney in nephritis, need fear no serious competition from any test previously employed.

Christian's sense of proportion, however, is the key to the situation:

Tests of renal function furnish but one set of facts about a patient, while for diagnosis and prognosis treatment, *clinical data* from many sources are required. Not one test, but the many are to be used if we reduce our clinical failures to their minimal numbers, and R. H. Fitz (20) the master mind, as one of his last utterances, speaks of functional tests to the exclusion of phenolsulphonephthalein as some phases of kidney function only.

When functional renal tests were first scouted, other than the routine analysis of the segregated urines, as advocated by Nitze (21), he inveighed against functional tests as follows: "What the kidney can do in elaborating metabolic products after the sister organ is removed, that is what the surgeon wishes to know." And the candor with which Richter (22) repudiates the phloridzin test that he elaborated, merits imitation by the advocates of the dye test. He remarks: "Neither cryoscopy of blood, electric conductivity of urine, nor reflex polyuria are capable *per se* as direct functional tests of giving any absolute conclusion. The indirect testing of renal function by the incorporation in the system of dye stuffs is also of limited value, and the phloridzin method as indicative of renal function has to be guardedly used. Only the combination of several of the methods can lead to our ultimate goal. Practical clinical experience remains as heretofore the chief arbiter."

At this year's German Urological Congress (26), held in Berlin, in September, the same vacillating opinions in regard to phenolsulphonephthalein were given. Thus Roth said: "Good elimination is not always equivalent to good function, but bad elimination of phthalein always means bad kidneys. This opinion is based on experiments with dogs, but in the case of a human, phloridzin was more reliable than phthalein." In the discussion, the like was maintained by Alexejev, of St. Petersburg. Blum said, "the phthalein method is no gain for renal surgery; it only gives a general survey of kidney function." In his monograph Blum (27) remarks: "Because of the extreme delicacy of phthalein as a colorimetric reaction, even where small parts of the kidney are intact, an adequate elimination of the phthalein will result and therefore its interpretation will be misleading."

SUMMARY.

1. The efficiency claimed for the drug because of its complete rapid elimination and its reappearance in an unaltered form cannot bespeak any elaboration in the sense of work done on the part of the kidney, for this is denied by the very definition of efficiency, which represents the ratio of useful work to energy expended.

2. The dye output can be estimated colorimetrically.

3. The interpretation of the colorimetric reaction is the issue.

4. Evidence adduced favors its being an acidometric test, but without any claims of parallelism existing between the degree of acidity and kidney function.

5. Its nonirritating nature, nontoxicity, smallness of dose titled as virtues (Geraghty and Rowntree) are but of the negative variety.

6. As for the information being accurate and precise, this is controverted by the theoretical, chemical, experimental, and clinical evidence herein set forth and which forbids reliance on the extravagant claims of phenolsulphonephthalein as a functional kidney test.

7. In closing, we beg to ask: Why, if this twentieth century product is so all sufficient in the diagnosis and prognosis of nephritis, should its great utilitarian advantages have been overlooked by insurance companies and failed of adoption, unlike the blood pressure test, which stands high in the estimate of most companies in adjusting their risks?

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27 EAST EIGHTY-FIRST STREET.

THE PROPERTIES OF PARATHYROID EXTRACTS.

BY HENRY R. HARROWER, M. D.,
London, England,
Late Professor of Clinical Diagnosis, Medical Department, Loyola University, Chicago.

From the standpoint of anatomy the parathyroid glands are, perhaps, the most insignificant of all the organs of internal secretion, yet it is no exaggeration to say that their hormone influence is comparatively greater than that of any other of the endocrinous organs. Their influence in physiology and the possibilities of their therapeutic value have only recently been considered; and this is not to be wondered at when we recall the ignorance of the whole subject of glandular therapeutics, some twenty years ago. As a matter of fact, this set of organs was entirely overlooked until Sandström

(1) discovered them, in 1880. Even this important discovery was incomplete, for he had only found the pair of glandules now termed the "external parathyroids" and it remained for Kohn (2) to find and describe the so called "internal parathyroids" fifteen years later.

Of the numerous experiments in which two, three, or the whole of these glands were removed and the resulting disturbances; of the physiological relation between the parathyroids and other glands, and whether their removal is followed by a compensatory hypertrophy elsewhere, we can only briefly write. This is not strictly therapeutics, although all the facts thus established are concerned in the groundwork of our present knowledge of the therapeutic value of parathyroid extracts. We are still in the early stages of this special knowledge and there is doubtless much more to be learned which will prove of eminently practical usefulness; but it seems quite clear from experimental observation that the parathyroids, in spite of their apparent insignificance, must be considered absolutely essential to life, and that their principal service to the organism is their power to destroy certain toxic wastes which seem to have a special predilection for the nervous tissue and which produce, by their action as well as by the removal of their benign influence, a series of nervous manifestations, principal of which is the symptom complex termed "tetany." It is generally agreed that the principal source of the activities of the parathyroids is a hormone which is distributed by the blood to the appropriate tissues, although it is not impossible that these glandules may produce antitoxic substances which neutralize, attenuate, or destroy products which, if allowed to remain, would be harmful.

In his presidential address before the British Association, in 1912, Sir E. A. Schäfer (3), discussing the chemical activators, said: "The case of the parathyroid glandules is still more remarkable. They are four minute bodies, each no larger than a pin's head, imbedded in the thyroid. Small as they are, their internal secretion possesses hormones which exert a powerful influence upon the nervous system. If they are completely removed a complex of symptoms, technically known as 'tetany,' is liable to occur, which is always serious and may be fatal. Like the hormones of the thyroid itself, therefore, those of the parathyroids produce effects on the nervous system, to which they are carried by the blood; although the effects are of a different kind."

Not only is the parathyroid hormone essential to normal metabolism, but it is available as a therapeutic agent, and, as will shortly be shown, its detoxicative powers make it indeed a most valuable weapon.

The detoxicating factor. It may be that the parathyroid hormone activates certain tissues, for instance, the thyroids, to produce antitoxic bodies or, on the other hand, it may have a direct destructive action upon these poisonous substances. However this may be accomplished, it is of considerable interest.

The importance of this factor is emphasized by the recent work of Koch (4) in the laboratories of the University of Michigan. He discovered certain toxic bases in the urine of parathyroidectomized dogs. In every case methylguanidin was found, and, where the amount was smaller than usual, other bases such as cholin, neurin, etc., were present.

Upon these findings, Koch suggests that "the parathyroid internal secretion appears to be concerned also with anabolic processes related to the synthesis of nuclear contents. Whether or not such a hypothesis can be further substantiated remains to be seen; in any event, the final isolation of recognized toxic chemical products of traceable origin has paved the way to definite conceptions and specific lines of inquiry where hitherto the explanations have been vague and the outlook unpromising" (5).

The relation between the thyroids and parathyroids. It must be borne in mind that the parathyroids are not connected with the thyroid. Their similarity in name and their anatomical proximity are liable to be misleading. The parathyroids are quite distinct bodies, differing from their neighbor in origin, structure, and action; it has also been shown that there is a difference in their chemical composition as, unlike the thyroid and the thymus, they contain no iodine.

There certainly is some connection, however, although there are differences of opinion on this subject. Gley (6) has made some very decided statements to the effect that these organs are physiologically intimate. He states that total thyroidectomy is followed by a compensatory hypertrophy of the external parathyroids; and is supported by numerous writers. Walbaum (7) believes that these glands are antagonists, but Gley has since shown that tetany can be made to disappear by injecting thyroid extract. This position is contradicted by Blum, Pfeiffer, and others.

Rudinger seems to have given the most reasonable explanation of the interrelation of the thyroid and parathyroids. He concludes that: 1. Thyroidectomy is followed by parathyroid hypertrophy, but, 2, the manifestations of hyperthyria (exophthalmic goitre) are diminished by parathyroid treatment, while hypothyria (myxedema) is made worse; 3, tetany follows thyroidectomy, but the effects are less marked than those following parathyroidectomy later; and, finally, 4, parathyroidectomy is followed by a degree of thyroid hypertrophy (8). The differences of opinion of experimenters is seemingly due to the fact that there may be accessory parathyroids in the thymus and elsewhere, and the operations have not always accomplished just what was intended.

Biedl (9) writes: "I have found in numerous cases that the removal of the thyroid, together with the internal parathyroids, is nearly always followed by hypertrophy of the external parathyroids. The hypertrophy is more or less clearly marked according to the length of time after operation." The reason for this seems obvious and may be an explanation of the statements preceding—with thyroidectomy the hypertrophy of the external pair of glands is Nature's effort to replace the removed internal pair.

Evidently, then, the intimacy of these glands is established, although it is equally clear that they are

only intimate and not actually connected in any way).

Parathyroid therapeutics. All the available literature dealing with the use of parathyroid extract indicates that its value is dependent upon a marked antagonistic action which it exerts over certain metabolic toxins. The action of such extracts coincides with the physiological activities of the glands and has been successfully applied in the treatment of such diseases as tetany, paralysis agitans, hyperthyroidism, eclampsia, epilepsy, chorea, etc.

Paralysis agitans. Berkeley (10), of New York, has worked with these extracts for eight or nine years, and his principal study has been their application in the treatment of Parkinson's disease. In his latest paper (11) he states that this form of medication "has "wrought a revolution." This writer has brought forward several plausible considerations which indicate that there is a relation between paralysis agitans and parathyroid pathology, and, best of all, he backs them up with numerous reports of evidently successful results.

In as progressive disease as this it is clear that treatment must be persistent in order to be successful. If benefit is found, it manifests itself just as does the disease itself—slowly and gradually. If small doses—one fiftieth of a grain of purified parathyroid extract once or twice a day—are given over a period of months, there are good chances of success. The cases reported by Berkeley are convincing, and his experience with a large number of patients "now well up in the hundreds" shows benefit in over eighty per cent. After some weeks, sometimes months, one notices a gradually lessened muscular rigidity and bettered muscular control, diminished pain and tremor, and the abolition of drooling. Often the distressing insomnia is controlled. This writer is most particular that *real* parathyroid extracts are used and states that "apparently bits of lymph nodes, thymus, accessory, thyroid, and even fat have done duty in many laborious experiments." It seems quite possible that the failures, for the inevitable failures and depreciations of this method have appeared in the literature, are due to carelessly prepared and consequently inactive extracts. Berkeley explains his methods of locating the glands and states his preference for those taken from the ox.

It seems as though the parathyroid treatment of Parkinson's disease has sound physiological basis and is rational and deserving of the study and clinical application of the profession generally.

These interesting statements do not all come from a single source, and Berkeley's treatment is becoming quite generally used. It seems that contemporaneously with Berkeley, Lundborg (12) was studying this subject in Sweden. He came to the conclusion that paralysis agitans and the other motor neuroses—Thomsen's disease and myoclonia—are due to hypoparathyroidism. Alquier (13) has made several communications in which he tells of the good effects of this method of treatment.

Puerperal eclampsia. Several investigators have applied the fundamentals of parathyroid therapy in the treatment of other severe toxic states. Vassale (14), of Turin, has recorded his experience and lays stress upon the value of this form of medication in puerperal eclampsia. In certain cases this treatment has controlled the convulsions, and Vassale inclines to the idea that there may be a parathyroid origin of eclampsia. His results have warranted a belief that large doses of parathyroid extract are useful in eclampsia in the same ratio as thyroid extract is useful in myxedema. This is a sanguine view, but not to be dismissed on that account. In his researches Vassale makes formal distinctions between the antitoxic functions of the parathyroids and those of the thyroid. He calls attention to the fact that congenital parathyroid insufficiency may exist and also follow pathological processes in these glandules. It seems that this insufficiency is quite compatible with ordinary existence, but should there come an incident, for example, obesity, accouchement, chronic eczema, etc., the convulsive phenomena somewhat similar to tetany promptly appear. There is no doubt that very slight straws are sufficient to break the camel's back, and others have shown that slight pathological changes in the parathyroids are not infrequently found in patients dying with tetany, paralysis agitans, eclampsia, etc.

Merrigio (15) contributes a long paper and relates experiences, many of which were encouraging, in the treatment by means of parathyroidine of eclampsia, chorea, and other toxic states which are accompanied by convulsive seizures.

Epilepsy. Vassale suggests that other convulsive conditions such as are not infrequently met in general practice, may all be associated with parathyroid insufficiency, and gives weight to his contention by reporting two cases of epilepsy which were controlled by this form of medication. This was apparently first suggested by MacCallum (17), of New York, who intimated that there might be a connection between parathyroid disorder and epilepsy as far back as 1903. Naamé (16) gives his conception of epilepsy as a disorder due to organic hypoparathyroidism. Perhaps this might be better termed a parathyroid dystrophy, and this writer's idea is that in epilepsy the parathyroids do not accomplish their antitoxic function, and that certain metabolic poisons which electively influence the nervous system are allowed to accumulate until a violent reaction to their presence is brought about—the seizure which is pathognomonic of epilepsy. His theory is interesting, and he reports having put it into practice in numerous cases over a period of some years with most encouraging results. A résumé of his paper is worthy of a place here.

There can be no doubt that the manifestations of epilepsy are of a toxic nature. The atonic and tonic convulsions of the crises; the rise in temperature often noted at these times; the frequent and severe headaches and the profound prostration all point to this. Naamé suggests that the parathyroids because of an intermittent disability (*claudication intermittente*) are unable to disintoxicate the system. Bearing in mind the secretory antagonisms of the gonads and parathyroids, we see a possible reason for the frequency of epilepsy at puberty. There is indubitable evidence that there is a relation between epileptic crises and the genital functions. Fits are intensified at the menstrual periods and, on the other hand, are considerably diminished

during pregnancy. Naamé's formula is as follows:

℞ Parathyroid extract, ...0.03 gm.;
Thyroidine, ...0.005 gm.;
Sacchari lactis ad., ...0.10 gm.
M. ft. mist.
Sig.: One cachet. Administer two to four daily during the seizure or, preferably, the premonitory symptoms.

"Under the influence of this treatment," continues this writer, "I state it definitely, in the cases which I have watched and whose age is over twenty years—the crises are rapidly suppressed and reduced to a simple vertigo; they become rare and benign, without incontinence of urine or tongue biting, and neither headache nor prostration follows. Further, the humor of the epileptic changes, he enjoys life: his memory is better, and his intelligence clearer."

Does this apply to all forms of epilepsy? It is not likely. Naamé proceeds: "After having eliminated traumatic epilepsy and that which is a sequel of meningitis, I will say that the epileptic who observes the rules of hygiene and submits himself methodically to the treatment given above, should not have fits; that is to say, he can be functionally cured. As far as an anatomical cure is concerned, it is conditional: if the parathyroid lesions are definite and of long standing, the reparative process may not be fully accomplished and a degree of parathyroid insufficiency will remain. But if the epilepsy is recent and not severe, the glands may respond to the treatment and perhaps return to a quasinormal anatomical condition, especially if the treatment is patiently continued."

Tetany, whether postoperative or epidemic, is now considered to be the result of parathyroid insufficiency, and the results of the parathyroid treatment of the tetany of parathyroidectomized animals have been usually decisive. Several reports laud this method, but fortunately the disease is so rare that opportunity to test the treatment is not often obtained. It seems that parathyroid extract should always be added to the sedation, hydrotherapy, and rest, which constitute the usual treatment recommended for this disorder.

Combining parathyroid with other glandular extracts. Attempts have been made to reinforce parathyroid extract with other endocrinous substances on the admittedly sound theory that there are distinct synergisms and antagonisms among the hormones. Naamé has recommended the addition of small doses of thyroidine in epilepsy (*quod vide*), while Berkeley impresses the fact that thyroid extracts are distinctly contraindicated in Parkinson's disease and hints that failures in the application of his parathyroid treatment may not only be due to inactive preparations, but that thyroid extract may aggravate the conditions. This same author found that the pancreatic, duodenal, and adrenal hormones do not synergize with the parathyroid, at least in the treatment of paralysis agitans, but that pineal extract, so far, seems to have produced "relatively happy results."

Bearing in mind the presumed physiological action of the parathyroid hormone—that of *detoxication*—it would seem that extracts of the liver might be usefully combined. Morel (18), whose work on the physiology of the parathyroids is of a very high character, recently outlined certain functional relations between the liver and parathyroids and in his paper summarizes these points as follows: As a result of experiment a close relationship between the parathyroids and the liver is manifested: 1. Anatomically. After parathyroidectomy the most constant and precocious manifestations are localized in the liver. 2. Clinically. The incidents following parathyroidectomy recall those following physiological exclusion of the liver. 3. From the biochemical viewpoint parathyroidectomy in the dog causes acidosis, excessive excretion of urinary nitrogen and diacetic acid; diminished power to utilize dextrose, and carbamic intoxication. 4. From the therapeutic viewpoint it is shown that hepatic opotherapy, *a*, increases (almost doubles) the life of the animal deprived of the parathyroids; *b*, that convulsions are diminished, anorexia, vomiting, and asthenia are decreased and the general condition benefited; and, *c*, that an abundant diuresis is brought about.

Schiötz (19), in a study of the relation of the internal secretions and cataract, seems convinced that the parathyroids may be connected with this disorder. He says: "It has already been established beyond question that parathyroid insufficiency may lead to cataract." This may or may not be the case. At least it does not seem to be a settled fact so far as the literature to date is concerned, but it shows possibilities which have not by any means become generally appreciated. And if parathyroid insufficiency is a factor in the causation of cataract, may not the use of parathyroid extracts be of possible service in its treatment? There is yet much to be done in this special field of research.

Dose. The dose of parathyroid extract varies considerably for, unfortunately, preparations are often inactive. Berkeley's experiences, already referred to, indicate the difficulty of securing an effective preparation. Undoubtedly a share of the indifferent results reported must be laid to indifferent preparations and this should not deter the prospective user, for the method is undoubtedly good. Carnot (20) has evidently found that the collection of parathyroids from the abattoirs is no sinecure and adds: *"Il est inévitable qu'il y ait erreur ou fraude dans leur récolte."*

The dried extract represents approximately one sixth by weight of the fresh gland. The glands are best secured from the ox, although Hallion (21) believes the external parathyroids of the horse to be most suitable. In England or America this is not convenient, but in France and Belgium circumstances are different, since horse meat is an *article de dégustation de tous les jours*.

The average dose of an active preparation is one twentieth to one fiftieth grain (0.003 to 0.001 gram) once or twice daily over a long period. In acute cases (eclampsia), one twentieth grain may be given every four hours for four or five doses. Hypodermic preparations are occasionally used, the usual dose being one fiftieth grain.

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20 Ribblesdale Road, North.

THE ROSS JELLY FILM METHOD IN THE DIAGNOSIS OF SYPHILIS.

By John A. Roddy, M. D.,
Philadelphia,

[illegible] Jefferson Medical College; Chief Clinical Assistant (Medical) Division B, Jefferson Hospital.

In the *British Medical Journal* for December 14, 1912, and in volume III of *Researches into Cell Reproduction and Cancer*, E. H. Ross reported the finding of protozoal parasites in syphilis; his description in part being as follows:

We have been able to assure ourselves that the human parasite found is present in every case of syphilis; and that we have in this disease a protozoal parasite of considerable dimensions and possessing various phases of development (of which the spirochæta pallida is one. . . .

This parasite was found to pass through stages of development—dot, rod, and spirochæta . . . the parasite undergoes other forms of development, namely, those of dot, pear shaped body, its subdivision into several round bodies, and the intracellular development of the free amœboid forms. These latter are very frequently seen in syphilitic lesions, and they probably constitute the asexual as well as the female elements.

The parasites have been found regularly in the chancres, the glands, the sores, the condylomata, and in the circulating blood. They have only been found in syphilis so far; they seem to respond rapidly to treatment with 606 or mercury, and the developing gametes exhibit, while yet within the cells, the well known characters, the twists and curls, the staining reactions, the size, the motility, of the spirochæta pallida.

The technic for examining suspected substances is as follows: Make two per cent. agar by dissolving powdered agar in distilled water, filtering and sterilizing it. To five c. c. of this agar add 0.4 c. c. Unna's polychrome blue, 0.4 c. c. of five per cent. aqueous solution of sodium bicarbonate, and 4.2 c. c. sterile water. Pour a thin film of this jelly on a clean slide and when it is hard place the material to be examined on a clean cover glass and gently drop it on the jelly.

Material for examination is collected in capillary tubes and mixed with an equal volume of one per cent. citrate of sodium in normal salt solution.

Soon after Ross's original communication appeared, several physicians in America and at least one in England reported most successful results in examination of peripheral blood and chancre fluid for the protozoa and recommended the procedure as a simple, accurate method of diagnosis. This suggested the desirability of examining blood from both syphilitic and nonsyphilitic patients for the presence of these bodies, described by Ross as *Lymphocytozoon pallidum*, and controlling the tests with the Wassermann reaction and clinical findings.

Through the courtesy of Colonel Gorgas, Colonel Hodges, Colonel Phillips, Colonel Mason, Doctor Deeks, Doctor Herrick, Doctor James, Doctor Erhart, and the resident physicians of Ancon Hospital, 157 cases were studied. Dr. Louis Bates, bacteriologist and acting chief of laboratories, made the Wassermann tests.

Blood was taken from one of the veins of the forearm for examination, for so called lymphocytozoon pallidum, at the same time that blood was withdrawn for Wassermann tests. No particular patients were selected; all those referred by physicians and surgeons for Wassermann tests being examined. Many of them were syphilitic and many were not, as proved by case histories, physical signs, effect of treatment, complement fixation tests, and diagnoses recorded at the time of patients' discharge. No knowledge of the Wassermann or clinical findings was obtained until after the results of examination of the blood by the Ross method had been recorded. From ten to twenty minutes were allotted to the study of each specimen. In the positive specimens bodies were found which resembled Ross's illustrations of some of the forms of lymphocytozoon pallidum, quite as closely as illustrations of plasmodia malariæ resemble the parasites found in malarial patients.

The most frequently observed forms appeared as round, copper colored bodies, containing dark granules, so called conjugated forms; they were found both within lymphocytes and free in the plasms. Occasionally minute, actively motile ameboid forms were seen within and without lymphocytes, so called female and asexual forms. Pale blue bodies containing black dots and rods were found within lymphocytes but never free in the plasma, so called male elements. Nothing that resembled microgametocytes or microgametes were observed. In all his writings Ross has stated that lymphocytozoa are more easily found in chancres and fluid expressed from other superficial syphilitic lesions than in the blood.

We examined fluid expressed from chancres, chancroids, and superficial secondary and tertiary lesions. Since the Wassermann test is unreliable in the primary stage of syphilis, it could not be used for a control in these cases. Doctor Darling, chief of laboratories, Ancon Hospital, told the writer that he often found spirochetas in chancroids, therefore examination for spirochetes would probably be of little value as a control; at all events, such examinations could not be made when this work was done. The conditions peculiar to the venereal wards of Ancon Hospital make the clinical diagnosis, our only control for these cases, of little value as such. Most of the patients are stupid negroes, reluctant about entering a hospital and anxious to depart. Many do not present themselves until weeks after the appearance of a venereal sore, and as a consequence characteristic appearances are often lost. These patients all depart before the onset of secondary manifestations, hence the clinical

diagnosis of chancre or chancroid must be wrong in many cases.

These examinations are reported because they show that bodies called lymphocytozoon pallidum do occur in some venereal ulcers on the penis, but not in all. In eleven cases diagnosticated as chancre the Ross findings were positive in nine and negative in two. Of fourteen cases diagnosticated as chancroid the Ross findings were negative in ten and positive in four. In three cases of syphilis all having positive Wassermann reactions and superficial lesions—tertiary papules, leg ulcer, and secondary ulcer of the scrotum—the Ross findings were negative in two and positive in one. Examination of fluid from a nonsyphilitic pustular eruption gave a negative Wassermann and a negative Ross finding.

Of the 157 cases in which the blood was examined for Ross bodies the clinical diagnosis was not obtained in fifteen. The Ross and Wassermann findings agreed in seven of these cases—all negative. In four the Ross was negative and the Wassermann positive, and the Ross positive and Wassermann negative in the other four.

Of the remaining 142 cases in which the Ross, Wassermann, and clinical findings were all obtained, there were seventy-four in which the findings by all three methods of diagnosis agreed; eighteen of these were positive and fifty-six negative.

The Ross and Wassermann agreed, though not with the clinical diagnosis, in fourteen cases, eight of which gave positive Ross and Wassermann. The Ross and clinical findings agreed, but both disagreed with the Wassermann in ten cases, two of which gave positive Ross and clinical findings.

The Ross disagreed with both the Wassermann and clinical findings in forty-six cases, thirty-two of which gave a positive Ross.

If we assume that a positive Wassermann together with positive clinical findings is evidence of syphilis and that a negative Wassermann together with negative clinical findings indicates the absence of syphilis; or, if we assume that failure of the Ross test to agree with the Wassermann is evidence of its error and that its agreement with the Wassermann is evidence of its correctness; or, if the more liberal measurement of considering the Ross findings correct when they agree with either the Wassermann or clinical findings; whichever of these ways of estimating its value are employed, the result is practically the same and shows that the Ross findings are correct in from sixty to seventy per cent. of cases; that they err most frequently by giving positive results in nonsyphilitic cases.

CONCLUSIONS

The examination of blood for Ross bodies is not as simple a procedure as has been reported; more than ten minutes should be devoted to the examination of a slide before it is declared negative; it is often difficult to differentiate these bodies from artifacts, sometimes impossible.

The value of the test as an aid to diagnosis is greatly reduced by the occurrence of the bodies in the blood of nonsyphilitic patients, or what amounts to the same thing, the occurrence of artifacts difficult if not impossible to distinguish from them.

If the bodies described by Ross as lymphocytozoa pallida really are such, then they do not occur in nonsyphilitic patients and our positive finding in nonsyphilitic cases raises the question of the nature of the bodies found.

It seems equally probable that the bodies described by Ross may not be living parasites, but products of human tissue acted on by toxin; that the toxin of syphilis causes this change very frequently, more frequently perhaps than most others, but that some other toxins also produce these bodies.

The Ross bodies are present in the blood of most syphilitics and less frequently present in those suffering from other diseases. Their true nature has not been conclusively established, nor has it been shown that these bodies do not occur in normal persons.

Shilling, Ellis, and others, at present investigating these vital questions, no doubt will disclose the true nature of what Ross has named lymphocytozoon pallidum; in the meantime it seems preferable to call them Ross bodies.

We are convinced that the Ross test is much inferior to the Wassermann test in the diagnosis of secondary and tertiary syphilis, and believe that the examination of material from suspected initial lesions for Ross bodies, in addition to examination for spirochetes, will be a valuable aid in the differentiation of chancres and chancroids.

I wish to take this opportunity to express my thanks to Professor W. W. Keen, Professor W. M. L. Coplin, and Professor R. C. Rosenberger for the privilege of doing the work here recorded, and to express my warmest regards for the executive officers and staff of Ancon Hospital: men, who, while busily engaged with an enormous amount of routine work, find time to add materially to the sum total of medical knowledge, and not only welcome but assist visitors engaged in research.

CHART I

Case No.	Ross	Wass.	Clinical diagnosis.
5	—	—	[illegible]
17	·	·	[illegible]
30	·	·	[illegible]
41			[illegible]
45	·	·	[illegible]
48	+	+	Tertiary syphilis.
62	·	·	[illegible]
68	·	·	Tertiary syphilis.
75	+	+	Tertiary syphilis.
[illegible]	·	·	[illegible]
[illegible]	—	—	[illegible]
[illegible]	—	—	[illegible]
[illegible]	—	—	[illegible]
[illegible]	·	·	[illegible]
130	+	+	Tertiary syphilis.
138	·	·	[illegible]
149	·	·	[illegible]
151	+++	+	Tertiary syphilis.

[1]Multiple plus signs indicate very numerous Ross bodies, showing an extraordinary variety of forms.

[illegible]

CHART II

Total No. of cases, 55.

Case No.	Ross.	Wass.	Clinical diagnosis.
[illegible]	—	—	Malaria, tertian.
[illegible]	—	—	Traumatic hemorrhage of middle ear.
[illegible]	—	—	Vaginal chancroids.
[illegible]	—	—	[illegible]
[illegible]	—	—	[illegible]
[illegible]	—	—	[illegible]
[illegible]	—	—	[illegible]

Case No.	Ross.	Wass.	Clinical Diagnosis.
			Bacteriological infection of kidneys
			Psychopathic inferiority
			Paranoia.
			Dementia præcox.
46			Pelvic adhesions.
50			Impetigo contagiosum.
2			Congenital flatfoot.
4			Malaria, clinical.
56	—	—	Tuberculosis.
			Pleurisy.
			Malaria, tertian.
69			Interstitial keratitis.
70			Traumatic keratitis.
72			Malaria, estivoautumnal.
74			Acute arthritis.
76	—	—	Plastic pleurisy.
77			Organic heart disease, hypertrophy and dilatation.
78			Incipient tuberculosis.
79			Acute conjunctivitis.
81	—	—	Purulent infection of left thigh.
88			Neuritis.
89			Chronic gonorrhea.
			Chronic otitis.
92			Atrophic rhinitis.
93			Maxillary sinusitis.
94			Internal strabismus and ozena.
96			Influenza.
97			Tuberculous inguinal adenitis.
98			Chronic arthritis of left ankle.
100			Sciatica.
110			Organic heart disease (H. and D.)
115	—	—	Gonorrheal arthritis.
117			Fibromyomata of uterus.
118			Chronic gastritis and acute neuritis.
126	—	—	Pharyngitis and tonsillitis.
128			Malaria, clinical.
130			Malaria, clinical.
136			Hyperemesis gravidarum.
137			Chronic rheumatism.
138	—	—	Diarrhea.
142			Chancroid.
145			Dementia præcox.
150		—	Subacute gonorrhea.
153		—	Ulcers of thigh.
154	—	—	Leg ulcer.
161			Malaria, clinical.

CHART III.

Total No. of cases, 2.

Ross Negative, Clinical Diagnosis Positive, Wassermann Negative.

Case No.	Ross.	Wass.	Clinical diagnosis.
12	+	—	Tertiary syphilis.
122	+	—	Chancroid and syphilis.

CHART IV.

Total No. of cases, —

Ross and Clinical [illegible] Negative, Wassermann Positive.

Case No.	Ross.	Wass.	Clinical diagnosis.
58		+	Laceration of left ring finger.
60			Pleurisy.
67			Iritis.
91			Gonorrheal arthritis.
108		+	Chancroid.
120			Leg ulcers.
127			Malaria, tertian.
143			Psychoses accompanying other forms of nervous disorders.

CHART V.

Total No. of cases, 8.

Ross and Wassermann Positive, Clinical Diagnosis Negative.

Case No.	Ross.	Wass.	Clinical diagnosis.
5	+	+	Yaws.
11	+	+	Follicular tonsillitis.
17	+	+	Dysentery, clinical.
20	+	+	Fracture of ankle.
24	+	+	Follicular tonsillitis.
30	+	+	Yaws.
65	+	+	Chronic otitis media.
69	+	+	Gonorrheal phimosis.

CHART VI.

Total No. of cases, 6.

Ross and Wassermann Negative, Clinical Diagnosis Positive.

Case No.	Ross.	Wass.	Clinical diagnosis.
3	—	—	Secondary syphilis.
55	—	—	Tertiary syphilis.
82	—	—	Tertiary syphilis, chronic nephritis and acute endocarditis.
84	—	—	Cerebrospinal syphilis.
85	—	—	Tertiary syphilis.
141	—	—	Cerebral syphilis.

CHART VII.

Total No. of cases, 32.

Ross Positive, Wassermann [illegible] Clinical Diagnosis Negative.

Case No.	Ross.	Wass.	Clinical diagnosis.
2	—	—	Intestinal adenitis.
3	—	—	Chronic appendicitis.
4	—	—	Traumatic amputation of left ring finger.
7	—	—	Traumatic keratitis.
28	+	—	Incipient tuberculosis.
29	+	—	Malaria (clinical) and uncinariasis.
31	+	—	Abdominal adhesions and psoas, Th.?
33	+	—	Alcoholic psychosis.
35	+	—	Alcoholic psychosis.
36	+	—	Dementia præcox.
39	+	—	Infective exhaustion psychosis.
40	+	—	Traumatic psychosis.
42	+	—	Infected hand.
44	+	—	Cerebral hemorrhage, uterine fibromata, nephritis, and cardiac hypertrophy.
51	+	—	Pediculosis.
53	+	—	Bronchopneumonia.
59	+	—	Acute nephritis.
80	+	—	Acute tonsillitis.
86	+	—	Acute gonorrheal arthritis.
99	+	—	Malaria (quartan).
104	+	—	Pustular dermatitis of scalp.
106	+	—	Angina pectoris.
112	+	—	Gonorrheal arthritis.
113	+	—	Acute diarrhea.
116	+	—	Malaria (estivoautumnal).
120	+	—	Malaria (clinical).
130	+	—	Otitis.
135	+	—	Paratyphoid.
140	+	—	Dysentery (clinical).
147	+	—	Alcoholic psychosis.
157	+	—	Dysentery (clinical).
125	+	—	Malaria (clinical).

CHART VIII.

Total No. of cases, 14.

Ross Negative, Wassermann [illegible] Clinical Diagnosis Positive.

Case No.	Ross.	Wass.	Clinical diagnosis.
10	—	+	Syphilis.
34	—	+	Tertiary syphilis.
46	—	+	Cerebral syphilis.
62	—	+	Secondary syphilis.
67	—	+	Tertiary syphilis.
69	—	+	Tertiary syphilis.
73	—	+	Secondary syphilis.
87	—	+	Secondary syphilis.
100	—	+	Syphilitic arthritis and acute gonorrhea.
102	—	+	Secondary syphilis.
114	—	+	Tertiary syphilis.
8	—	+	Tertiary syphilis.
27	—	+	Tertiary syphilis.
43	—	+	Tertiary syphilis and suppurative sinusitis of right maxillary antrum.

A NEW METHOD OF DETERMINING THE DUST IN AIR AND IN FRESH AIR SCHOOLROOMS.

By John B. Todd, M. D.,
Syracuse, N. Y.

In the progress report for 1912 of the Committee of the American Public Health Association on standard methods of air examination, there are mentioned three methods for dust determination: First, that of the coniscope which they say offers serious difficulties in standardization, since it depends on the recognition by the eye of the depth of color produced by a fog in a vacuum tube; second, the sugar filtration method by which the dust particles are counted under a microscope; third, the method of Graham-Rogers, which is that of catching the dust particles on a glycerinated Petri dish and counting them directly under a microscope.

The committee evidently was not satisfied with any method, for they state that "what is needed for sanitary purposes is a reasonably accurate determination of the comparatively few, but rather larger, particles which lacerate the epithelial tissues and favor the development of disease."

During the winter of 1912, the writer made some investigations and experiments in school ventilation. Wood screens covered with unbleached cotton cloth were placed in the lower sash of the windows of a schoolroom and the air inlet from the fan closed, so that the outside air filtered through into the room. There were fifty square feet of win-

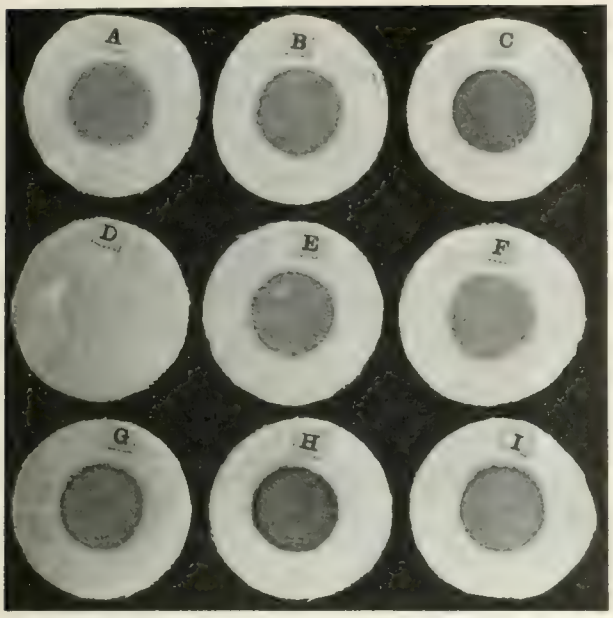


FIG. 1. A. Kindergarten, 44 pupils, 2 teachers, 3 screened windows open, one unscreened window open. B. Kindergarten, 38 pupils, 3 teachers, windows closed. C. 4-2 grade, 42 pupils, one teacher, sidewalks muddy. D. 7-1 grade, 39 pupils, one teacher, 5 screened windows open. E. 8-2 grade, 30 pupils, one teacher, 5 screened windows open. Record made immediately after recess. F. Same room in a wet day with a muddy playground. G. 6-1 grade, 34 pupils, one teacher, one screened window open (windy day). H. Same room, 4 screened windows open, walks muddy. I. Same room, one screened window open, record made during recess. On days when the walks and playgrounds were wet the records showed more dust, it being brought in on the children's feet.

dow opening screened, and the air conditions in the schoolroom seemed ideal, but after a time the screens became very much discolored, and foul from dust. This suggested the idea of using a filter to determine the dust in the air of the schoolroom.

After many experiments the following method has proved satisfactory in giving a positive objective answer to the question of how much dust there is in the air: A canton flannel disc two and three sixteenths inches in diameter, is placed in a receiver which has a round opening, one inch in diameter. Through this, by means of a suction pump, two hundred cubic feet of air are drawn. On removing the canton flannel disc we have the dust record. For the purpose of standardization a scale of ten gradations, from white to black, has been made. The pump used was a rotary quadruple bellows pump from a Melville Clark player piano. Mr. Morgan Sanford, of the local station of the United States Weather Bureau, standardized the apparatus and found that two hundred cubic feet of air are drawn through the apparatus in twenty-three minutes. The pump used is very efficient and noiseless in operation, but it is too heavy. I am working out one that will be portable.

I am satisfied, since I have used this objective method of dust determination, that we have greatly underestimated the effect of breathing dust as a cause of ill health and disease, and I hope to see the time when it will be as essential to make a dust record of the air a patient breathes as it is to take blood count and pressure. I have found that it reveals dust conditions of the air that many times were entirely unsuspected, but when once detected, the source of the dust can generally be determined, and the means to exclude the dust devised.

Many times in schoolrooms in which the conditions seemed ideal, very dark dust records would be obtained. Generally a muddy playground would account for the dust, it being brought in upon the children's feet, when the warm air of the schoolroom would quickly convert it into dust. The old methods were to *clean out the dust* with dust cloths and vacuum pumps. The dust records enable one to locate dusty places and conditions, and suggest methods of preventing dust. Prevention is a nobler function than cure, so the new words will be, *keep out the dust*, and the standing of schools in dust elimination can be kept on score cards by means of the dust record scale (Plate 3). In that way principals and janitors will be spurred on to greater efforts in maintaining a high record for freedom from dust. The educational value of this way of living hygienically in the schools will react upon the homes and entire community.

It is generally the custom to close the school and fumigate when cases of contagious disease occur among the pupils. It would be a much greater sanitary practice to scrub the floors, walls, and ceilings, to make them absolutely free from dust.

At the Fourth International Congress of School Hygiene, I read a paper entitled, Fresh Air Schoolrooms; The Problem Solved, in which I related an experiment I had tried out in Summer School, Syracuse, to improve the air conditions. My assertion of the ideal air conditions obtained in the rooms was supported by letters from the principal and teachers of the school.

In the discussion of my paper some one remarked that I had hypnotized the teachers to get such un-

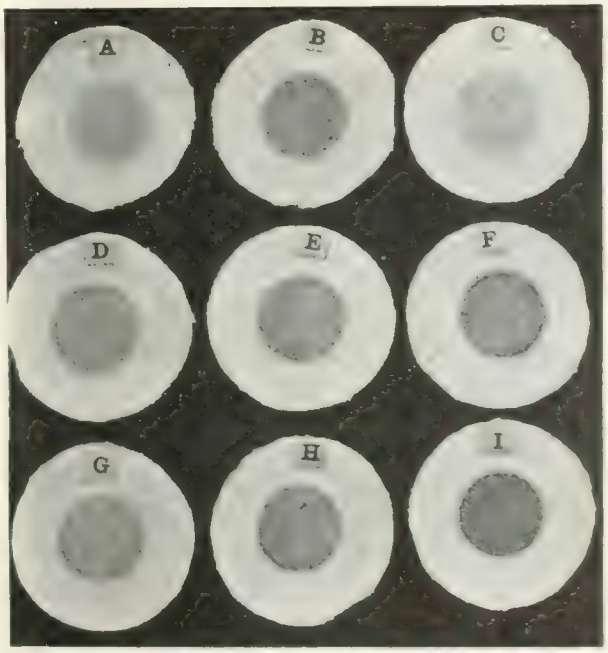


FIG. 2. A. [illegible] windows closed. E. 7-1 grade, 39 pupils, one teacher, one screened [illegible]

qualified endorsement of my plan of ventilation. At the time the experiment was tried in Summer School I did not have an opportunity to make any accurate examinations of air conditions. Since then, with the cooperation and assistance of Dr. D. M. Totman, health officer, Dr. F. M. Meader, city bacteriologist of Syracuse, Professor H. C. Ward, of Syracuse University, and Mr. Morgan Sanford, of the local station of the United States Weather Bureau, I have been making a study of the air conditions, both in fresh air (screened windows) schoolrooms, and rooms ventilated in the conventional way.

The fresh air schoolrooms are rooms in which the lower sash is raised in four or five windows, and the opening fitted with a wood frame covered with medium weight unbleached sheeting. The room in which the experiment was first tried had five 36 by 40 inch windows facing the east. Steam pipes extended across the room under the windows, and a hot air inlet, 30 by 30 inches, was on the north side, midway from the floor to the ceiling with an exit opening of the same size, near the floor. In the morning before school opened, the room would be warmed by hot air driven by a fan. When school began this hot air inlet would be closed and all the windows opened, so that there would be fifty square feet of open window space covered with the screen. The cold fresh air would diffuse slowly into the room and would be met by the hot air rising from the steam pipes, so that there were no perceptible drafts. Children sitting within four feet of the open windows all the winter days experienced no inconvenience whatsoever. The temperature of the room was maintained at 68° to 70° F. as easily as before the screens were used. There are two reasons for this: First, glass is a great conductor of heat and cools the bad air in a room very

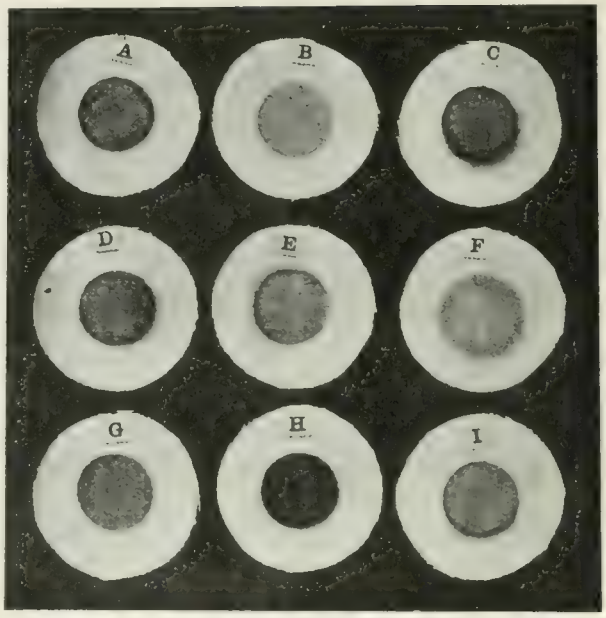
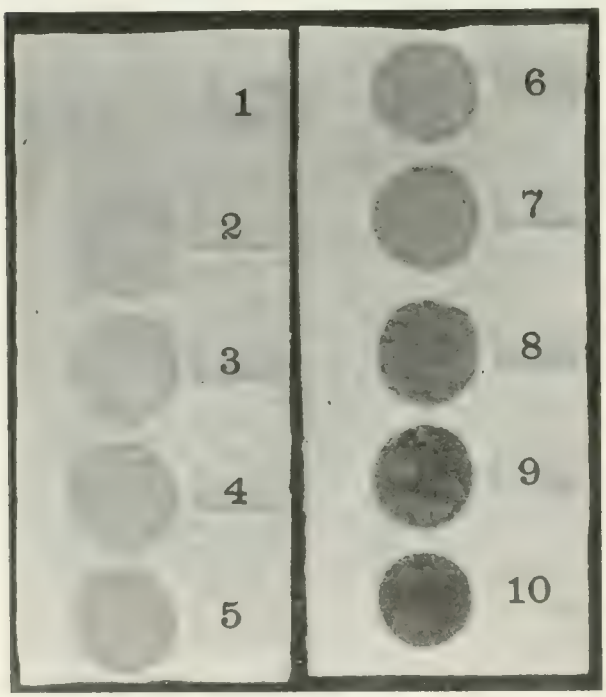


Fig. 1.—A. 33 pupils, one teacher, wet outside. B. 33 pupils, one teacher. C. 35 pupils, one teacher. D. 35 pupils, one teacher, wet outside. E. 43 pupils, one teacher, wet outside. F. 40 pupils, one teacher, wet. G. 33 pupils, one teacher, 2 windows raised one foot. H. 45 pupils, 2 teachers, wet outside, one window open. I. 44 pupils, 2 teachers. These records were made in a school with closed windows and the conventional fan ventilation.

rapidly while cotton conducts only one twentieth as much heat;[1] second, if the ar is being slowly diffused into the room, there can be no heat loss from radiation or conduction through the screens, and as it takes no more heat units from the steam pipes under the windows to raise the temperature of the air being slowly diffused into the rooms than it would to heat the same air by the heating coils in the fan room, the use of the screens is a clear gain of the heat loss by radiation through the glass of the windows. Another economy obtained from the use of the screens is the saving of power and attendance.

After the screens were installed in this room, no more cases of fainting occurred, hacking, coughing, and restlessness disappeared, discipline was easier to maintain, and the children did better work. The windows were up during all kinds of weather; the coldest day of the winter the thermometer was at zero at 10 a. m. while it was at 70° F. with fifty square feet of screened opening in use. The principal, janitor, and all the teachers were at first incredulous, but frequent observations of the conditions soon had them all asking for screened windows. The idea has spread to other schools, and whenever the screens have been properly constructed and installed, the improved air conditions have been ideal. A critical examination of the ideal air conditions in these fresh air rooms reveals a scientific basis. In the first place, drafts are currents of air with velocity enough to be perceived, and if the air is cold, they are uncomfortable or painful. The screens are covered with cloth heavy enough to prevent any perceptible draft. In fact it is a permeable membrane which breaks up the air into currents of infinitesimal size and of low velocity, but



to obtain any ventilation under these conditions, the area of opening must be very large, so I put fifty square feet to the room, which is nearly double the area of the inlet opening to the fan which is supposed to furnish air for sixteen schoolrooms, an assembly hall, etc.

Repeated humidity tests have shown that it is practically the same in these fresh air rooms that it is out of doors, which confirms Hobler[2] that it can be obtained as easily by open window as by a humidistat.

Believing that carbon dioxide tests are not worth the trouble of making, the carbon dioxide has been ignored.

One would think that by filling the lower sash of all the windows in a schoolroom with cloth screens, the proper lighting would be decreased, but, instead, the lighting is really improved. The light rays are broken up by the cloth, and a soft diffused light results which is more comfortable to work by than the glaring direct light that comes through glass.

The fresh air rooms are absolutely free from odors, which are so closely associated in our minds with schoolrooms and institutions. Even the smell of stuffiness which can hardly be called an odor is entirely absent. It is, as one teacher has described the air conditions, "like a continued day in June."

Next to the confined stuffy bad air in schoolrooms, the dust in the air produces the most unsanitary condition. In ordinary fan ventilated schools the dust that is brought into the room gradually accumulates, the room acting as a settling tank, while only a small portion is carried out by the vent. I have found in the screened fresh air rooms, that this dust is entirely eliminated. This dust elimination is accomplished in two ways. First, the fan inlet being closed, no dust is brought into the room by the fan; second, the air that is diffused into the rooms through the screens is *filtered air*, and dust free. The cloth on the screens becomes discolored very much after a time and and should be changed for new cloth. I have worked out a form of screen in which the cloth can be changed with little trouble.

Wire gauze[3] and cheese cloth window screens have been used a great many years, but they have proved unsatisfactory in cold weather because they produced cold drafts. For the proper ventilation of sleeping rooms during the shut in months of the year, the cloth screens are of the utmost value. The air is sweet and clean, and one awakes in the morning, vigorous with renewed energy. I have found the temperature in a sleeping room which has seventy-five feet of opening, with no heating whatever, to be from 15° to 36°F. warmer than the outside temperature during the very coldest days of the year. This sleeping room has a northern exposure and with a blizzard driving against it from the north, the inside temperature was 15° warmer than the outside. In cold windy storms from the west which did not beat directly against the screens, it was generally about 25° warmer inside than out. One still quiet morning the outside temperature was 6°F., while inside it registered 30°F., which is further proof that cloth screens do not radiate or conduct heat. In the home care of cases of tuberculosis I have the windows—two if possible—entirely removed, and cloth screens put in their place, when the sufferers are able to live in practically out of door conditions of air with this advantage, that the air is filtered.

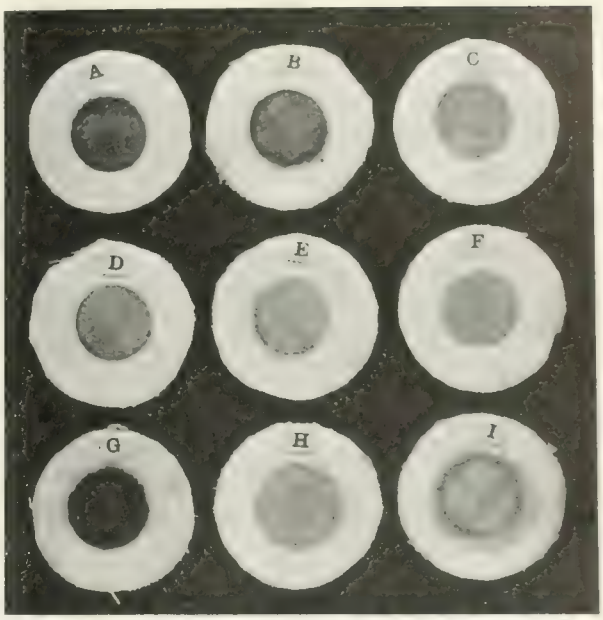


FIG. 5.—These records were made in schools with closed windows and conventional fan ventilation. A. 28 pupils, one teacher, one window up 6", wet day. B. 48 pupils, 2 teachers. C. 45 pupils, 2 teachers, 2 windows up 18". D. 59 pupils, one teacher. E. 35 pupils, one teacher. F. 35 pupils, one teacher. G. 45 pupils, one teacher. This school has 8 hot air furnaces and 2 ventilating stacks. H. 33 pupils, one teacher. I. 42 pupils, one teacher. Two boilers and three hot air fans in ventilating.

The fresh air screens are admirably adapted to improve the air conditions in sickrooms, hospitals, libraries, gymnasiums, factories, and shops, and their universal use would be of the utmost value in the prevention of tuberculosis and the long list of other diseases that have their incidence associated with ill ventilated places.

740 SOUTH BEECH STREET.

[3]Hobler, C. A.: *Transactions Fifteenth International Congress Hygiene and Demography*, v. 3, p. 116.

DIAGNOSIS OF THE MORE COMMON DISEASES OF THE RECTUM AND ANUS.*

BY EMANUEL J. LEAVITT, M. D.,
New York,
Rectal Surgeon, East New York Dispensary.

The laxity of diagnostic zeal by the general practitioner has of late years become the pet target at which the rectal surgeon loves to hurl his pent up sarcasm. One needs only open the covers of any publication on things proctological to note that, without exception, the author's conscience as to the fulfilment of his entire duty does not seem to find satisfaction until he has had his fling at the general practitioner, either for his apparent hyperesthetic sense and repugnance to the rectum or for his diag-

*Presented before the Williamsburg Medical Society, December 3, 1913.

nostic ignorance, in consequence of which the patient is often dismissed with an ointment or a suppository, without any attempt beyond perhaps an ocular inspection to ascertain the true nature of the disease.

This being the opinion of all the authors, it therefore follows that there must be a great deal of truth in their assertions. Admitting this to be so, the question arises whether the omission in learning of this particular branch of surgery is really the fault of the general practitioner himself, or may we perhaps find it at the door of the college or hospital from which he has graduated and where the rectal specialist is still being forced out by the general surgeon? The answer to this important question I shall leave to the reader.

It is my object now to spread the subject of diagnosis of rectal disease before those to whom stant headaches, and facial neuralgia by curing the rectum of a fissure or of hemorrhoids.

It at once becomes apparent, therefore, that it is of paramount importance for the family physician, who is the first to be consulted, to be thoroughly familiar with the reflex symptoms of which a patient may complain, without having the slightest suspicion that the real cause of his or her woes is situated in the rectum.

Complaints such as, 1, digestive disturbance; 2, change in the usual bowel movement; 3, a heavy, constricted feeling about the pelvis; 4, pain in the sacrum shooting down one leg, usually the left; 5, menstrual irregularity or dysmenorrhea; 6, irritability of the bladder; 7, anemia without apparent cause; 8, neurasthenia or melancholia, should always lead to further inquiry as to the condition of the rectum.

TABLE OF DIFFERENTIAL DIAGNOSIS OF THE M

Remarks		Anal Fissure	Rectal Ulcer	Ft. Int. Fistula	Abscess	Foreign Body	Ex. Thromb. Pile (perianal extravagation)	External Hemorrhoids— Second Stage	External Hemorrhoids— Third Stage
Subjective	Pain	Intermittent, burning, commences during or soon after stool, persists [illegible] hours, and slowly ceases	Intermittent, burning, commenced during stool, persists half-hour.	Constant, burning, aggravated by soft stool	Constant, throbbing, worse at night	Sudden, sharp pain during stool, persists until foreign body is removed	Sudden sharp pain, during stool persists	Rarely painful, usually referred to sacrum, etc.	Often pain may be very acute [illegible] sphincter
	Hemorrhage	Streaked stools	Streaked stools	Streaked stools	.....	.....	.....	Variable; often independent of stool; may be profuse	Rarely
	Discharge	.....	Scanty, purulent	May be sudden discharge of pus and simultaneous relief of pain	.....	.....	.....	Mucous	Mucous often profuse
	Protrusion	.....	.....	.....	.....	.....	.....	During defecation; returns after defecation	Constant
	Bowel Movement	Constipation, feces often flat, ribbon and tapelike	Constipation	Constipation	.....	.....	Constipation	Usually constipation, may be painful defecation	Tenesmus, feeling of incomplete evacuation
		May be manifestation of syphilis (secondary)—pain usually independent of stool	Painful when situated in lower 2 inches of rectum only	.....	Constitutional reaction	1-9 days to pass from mouth to rectum (Goodsall and Miles)	.....	*First stage*—No protrusion can be seen with speculum. *Subjective symptoms*—Slight itching during stool; often constipation and referred pain.	
Objective	Palpation	Elongated, narrow triangular ulcer, usually single; syphilitic, usually multiple	.....	.....	Swelling, if superficial	.....	Globular, bluish tumor	Globular tumors, can be seen on bearing down	Globular tumor, lobulated
	Inspection	Very sensitive; spasm of sphincter	Sensitive; roughened surface of irregular ulcer	Sensitive, gumboil-like tumor, pit like internal opening of fistula	Point of greatest tenderness	Foreign body	Very sensitive; consists of mass distended by blood clots	Soft, cannot be palpated, unless greatly thickened (fibrous)	Sensitive, consists of thickened venous structure
	Proctoscopic Ex.	May reveal mucous patches, if syphilitic	Differentiate from specific ulcer, as elsewhere	Exudation of pus through internal opening	.....	.....	.....	Bluish tumors; hypertrophy of over lying mucous membrane	.....
		Characterized chiefly by pain						Characterized chiefly by protr	

the above mentioned accusation may apply, in as simple and easily assimilable form as is consistent with clearness, touching only on the cardinal diagnostic points of the more common diseases.

At the outset, it is to be remembered, 1, that the diseases to which the rectum and anus are subjected are usually progressive. 2. The rectum dwells in sympathy with its neighbors—the prostate, the bladder, the uterus and its annexa, by ties of blood, lymph, and nerve supply. The troubles of one are easily communicated to the other. 3. Impressions originating in the rectum may, as in gynecological or genitourinary diseases, be reflected to parts distant from the source of origin. Thus, J. P. Tuttle related that he has relieved pain in the eye, con-

Inquiry into the diseases of the rectum for the purpose of diagnosis, demands the same orderly routine procedure as elsewhere in the system. For the sake of convenience of description we may classify them under three headings: 1. The family and personal past history; 2, the personal present history; 3, the objective examination.

The family and personal past history should elicit the presence or absence of any predisposition to tuberculous, malignant, syphilitic, or nervous disease. The personal present history is of great value. It should include, *a*, occupation; *b*, general habits; *c*, present state of general health; *d*, present complaint (subjective symptoms). Sedentary occupation, irregular habits in general and irregularity in

time for stool in particular, gorging of rich foods and strong drink, preoccupation with pipe and magazine while at stool, all usually lead to constipation and irritation of the rectum with consequent rectal irritation of one kind or of another. Inquiry into the present state of general health is of great importance. Constitutional disease very often predisposes to rectal disease. I only need mention the relation of, 1, glycosuria to pruritus ani, fissure or fistula; 2, of syphilis or tuberculosis to rectal ulceration and stricture; 3, of portal congestion to passive congestion of the lower rectum, with its consequent disorders, hemorrhoids, hemorrhage, etc.; 4, progressive anemia may be the cause or effect of more or less constant bleeding from the rectum; 5, gynecological and genitourinary disease may be closely related to rectal disease.

In relating the subjective symptoms the patient will usually complain of one or more of the following symptoms: 1, Pain; 2, hemorrhage; 3, discharge; 4, protrusion; 5, change in bowel movement. It will then be necessary for the examiner to inquire in detail into the circumstances attending each particular symptom. A good acquaintance with the cardinal subjective symptoms of the more common diseases of the rectum and anus, as presented herewith in tabulated form, soon enables one justly to differentiate them and form a good opinion of the probable lesion in a great many cases. But, unless the snap diagnosis so formed is verified by an objective examination, one is more often apt to be led astray.

The objective examination. This may frequently be construed to mean, that part of the examination to which the patient objects; without such an examination, however, diagnosis cannot be positive or complete, therefore no proper treatment can be advised.

So far, we have not yet looked at, nor have we touched the much maligned, the supposedly offending organ, the liberator of our systemic poisons, our benefactor, the rectum. For my part, I cannot imagine that there really is a physician whose esthetic sense is so finely developed that he can neither look upon nor palpate a rectum. If such a physician really exists, he is unquestionably in the wrong profession. The rectum, when prepared by the patient by proper ablutions and enemata, before presenting himself or herself for examination, presents to my mind less repugnant features, from an esthetic point of view, than a running nose, an odoriferous ear, a foul odored mouth, a mucopurulent discharge laden vagina, or a pus oozing urethra. If, perchance, some fecal matter may happen to cling to one's delicate finger, it only needs to be remembered, that, "fecal matter can be easily washed off our hands, but the sin of omission, never."

In pursuing the objective examination, calmness and alertness in ourselves, and assurance to our timid patient, should be our watchwords. We should never suddenly appear before the bedside or examining table with the index finger extended, ready to bore into the patient's rectum. It is best to begin our explorations in parts distant from the scene of contention and work our way gradually toward it. We begin, therefore, with the examina-

MON DISEASES OF THE RECTUM AND ANUS.

	Prolapse of the Rectum			Chronic Catarrh, Proctitis, and Colitis			
	Prolapsus mucosæ incomplete	Procidentia, complete, 1st degree	Invagination and discreet complete 2d degree	Hypertrophic	Atrophic	Stricture	Cancer (early signs)
	Burning sensation	Burning pain	Constant burning pain	Intermittent, abdominal griping; local discomfort	Intermittent, abdominal griping; local discomfort	Constant, bearing down, feeling of fullness	.....
	Rarely blood streaked stools	Often, blood streaked stools	Often, blood streaked stools	Rarely, blood streaked stools	Often, blood streaked stools	Variable; may be profuse	. . . .
	Mucous	Mucous	Mucous or muco-purulent	Mucopurulent, often mucous, tapelike	.....	Constant discharge; variable character	. . . .
	During defecation; reducible may be constant	During defecation often constant and irreducible	During defecation often constant, usually reducible	.....	.....	May extrude, if invagination occurred	. . .
	Usually diarrhea	Usually diarrhea, tenesmus	Usually diarrhea; tenesmus	Constipation, alternating with diarrhea; tenesmus	Constipation; hard, dry stools	Diarrhea; tenesmus; tapelike stools if stricture low down	Constipation, attack of
	.....	Symptoms depend on degree of mechanical irritation, strangulation and presence of mass in the rectum		Chronic indigestion; nervous depression, associated with intra-abdominal disorder	Chronic indigestion; nervous depression, associated with atrophic catarrh elsewhere	Usually loss of weight, edema of extremities	
	Protrusion not more than inches; flaplike, smooth, slitlike opening	May be very large; even all around; transvers-striæ oval; patulous opening	May be large; even all around, transv. striated oval opening	Hypertrophied perianal folds; sphincter relaxed	Atrophied perianal folds; sphincter spasmodic	Patulous opening; stricture low=cicatricial narrowing	. . .
	Begins at mucocutaneous junction; parts more freely over each other; consists of mucous membrane only	Begins at mucocutaneous junction; parts thick, not movable over each other; consists of all coats of rectum	Begins above internal sphincter; parts thick, not movable over each other; consists of all coats of rectum.	Mucous membrane soft and doughy; folds hyperthrophied;	Mucous membrane dry and smooth; folds atrophied; ampulla widened	Examining finger with pus and blood; may be	rectal wall
	. . . .	. . . .	. . . .	Mucous membrane pale and	Mucous membrane red and shiny	Cicatricial contraction	Proctoscope to be used with caution
					often ulceration		

Characterized chiefly by

tion of the abdomen, which, by the way, will often amply repay us in the light it may shed on the question at hand. A prolapsed kidney, an abdominal tumor, an enlarged liver or a distended gallbladder, tenderness at McBurney's point, may explain the hypertrophic catarrhal proctitis or colitis; also distention of the colon, thickening of the sigmoid, tenderness over the bladder or corpus uteri, and enlarged inguinal glands may have their obvious relations to rectal complaints.

This accomplished, the patient is now most conveniently turned into the left lateroprone position. 1. The buttocks are widely separated, the condition of the surrounding skin, the presence or absence of any swellings and of external openings of fistulæ are then carefully noted; 2, the patient is requested to bear down as if at stool; the condition of the sphincter, whether relaxed or contracted, the presence or absence of discharges, protrusions of external piles or extrusions of large internal piles, polypoid tumors, or prolapse of the rectum, are observed; 3, perianal folds are carefully smoothed out and search is made for fissures; 4, the finger nail is filled with soap, the finger lubricated, the patient is again requested to bear down, while with gently boring motion the finger is slowly introduced to its fullest extent. Rapid introduction of the finger or pressure against a diseased spot in the anal canal will throw the sphincter into spasms and frustrate our good intentions. The following conditions are then to be determined: 1. Position of uterus, condition of annexa, prostate, seminal vesicles, sacrum, and coccyx; 2, malignant infiltration and stricture; 3, invagination of rectum; 4, roughened surfaces of ulcerations; 5, foreign bodies, polypoid tumors, or adenomatous growths; 6, pitlike opening of internal fistulæ; 7, condition of mucosa, whether dry or moist, whether smooth and thin or thick and in folds, and calibre of ampulla; 8, on withdrawing the finger, the wall of the anal canal is gently pinched between the thumb and examining finger to ascertain the presence or absence of cordlike infiltrations of fistulous tracks. Internal piles, unless greatly thickened, cannot be felt by the examining finger. A gumboil-like feeling is characteristic of a submucous fistula.

The education of the sense of touch is indeed a very valuable asset in the diagnosis of rectal disease. The English surgeons seem to rely upon this alone. Goodsall and Miles make no mention in their book of any other aid to diagnosis. Sir Charles Ball, speaking of specula, says: "Personally, I have little reliance on their aid to diagnosis. It is by the sense of touch rather than by sight that disease of the internal rectum is best recognized." Of tubular specula the same authority says: "I seldom employ them and am somewhat skeptical as to the diagnosis and treatment of high lying disease of the rectum which I hear of being effected by their means."

In this country, however, the rectal surgeons avail themselves extensively of the advantages offered by the tubular specula, known as anoscope, proctoscope, sigmoidoscope, according to their respective lengths; the last named usually measures fourteen inches in length. By their means, palpation can be verified by inspection, the condition of the mucosa and of the rectal valves can be inspected, a far greater extent of the bowel can be examined, and a specimen can be removed for microscopic examination. Two types of tubular specula are at present in vogue, the simple tube and the pneumatic tube. They are provided with obturators. The former depends on atmospheric pressure to balloon up the bowel; the patient must be in the genupectoral posture. The latter depends on a rubber bulb attached to the tube to inflate the rectum; it also carries an electric lamp and a window to look through. The patient may be placed in the lateroprone or in the lithotomy position. The tube is passed in the direction of the anal canal, viz., up and forward toward the neck of the bladder. As soon as the internal sphincter is passed the obturator is withdrawn; the bowel should then be distended, serving as a guide for further direction of the tube, which is then simply carried forward without touching the walls of the intestine. In this manner the sigmoid flexure may be entered with comparative ease. The bowel is examined as the tube is being withdrawn.

To recapitulate, we may state that diagnosis of the diseases of the rectum and anus requires: 1. Inquiry into the family and personal past history; 2, inquiry as to the present state of general health; 3, abdominal examination; 4, local examination by inspection, palpation, and instrumental examination; 5, bacteriological and chemical examination of the feces, and, 6, the x rays are frequently called into service, in certain cases, as further aids to diagnosis. From what has been said, it becomes apparent that proctology is a serious study, and that the sufferer from a proctological disorder has a greater claim on our time and skill than that devoted to the mere writing of a prescription or to offering some consoling advice.

In conclusion, I desire to offer a few proctological truths which are frequently ignored.

Failure in taking a baby's rectal temperature as soon as it is born, frequently leads the nurse to precede the doctor in diagnosing atresia ani.

There is such a thing as edema of the perianal skin; therefore, refrain from asking the surgeon to remove all the piles, pointing to the edema.

The internal opening of all anorectal fistulæ is always between the external and internal sphincters.

An anal fissure may also be syphilitic, therefore highly contagious.

An extrusion from the anus, beside hemorrhoids, may be a polypoid tumor, prolapsus mucosæ recti, procidentia recti, or invagination of the rectum.

Spasm of sphincter indicates irritation within the anal canal.

Relaxation of sphincter is indicative of general systemic exhaustion or of stricture higher up.

Regular bowel movement does not invariably rule out constipation, as it may be proved by the presence of feces in the rectum soon after an evacuation.

Diarrhea may be a manifestation of partial obstruction of the bowel, permitting only the fluid part of the feces to pass.

One may suffer from cancer of the rectum without experiencing pain.

The earliest sign of cancer of the rectum is an attack of constipation; the next symptoms are a slight loss of weight and diarrhea; very soon to be followed by the train of all the horrible sufferings incident to malignant disease of the intestines.

Finally, I most earnestly desire to call attention to the vast difference in the results of the radical cure for carcinoma of the rectum, between the cases operated in, in which the infiltration has not extended beyond the rectum, and those cases in which it has. The difference is from five to ten years of life, of comparative comfort; enough to admonish us of our imperative duty—early diagnosis of cancer. This can be accomplished if we bear in mind this most important fact: "The period of the primary attack of constipation corresponds to that period during which the cancerous infiltration has not yet extended beyond the rectum," and I now repeat it advisedly that, "the earliest sign of cancer of the rectum is constipation." Therefore, when a patient in the fifth decade, complains of an attack of constipation, we are in duty bound to examine his rectum for cancer.

While this article presents nothing original, except in the manner of presentation, it will have fulfilled a great mission, the success of which is to be measured by the increased number of rectal examinations the family physician may be induced to perform in the future.

728 Bushwick Avenue, Brooklyn.

SURGERY IN GOITRE.*

By I. Arthur Stoloff, M. D.,
New York,

Attending Surgeon, People's Hospital; Clinical Assistant, New York Polyclinic Medical School and Hospital.

The subject of goitre is one of the great studies in medicine and surgery today. I hope that this communication will bring us a little nearer toward settling some of the mooted questions.

When we consider that recently, prior to operation, five patients with goitre died from shock at one clinic, we realize the great importance of a thorough study and knowledge of the various methods of anesthesia employed today in operating for goitre. This phase of the question seems to me to be so vital, that, in presenting my cases, I have selected three, each illustrative of a different method.

The first is a case illustrating general anesthesia, a method with which we are all familiar, the patient being unconscious during the entire operation.

Case I. Mrs. T., aged thirty years, Italian; married for two years; no children. Father and mother living and well; two sisters had goitre; one operated upon. *Previous history:* Diseases of childhood, measles; habits regular; had always been in good health until two years before, when patient was married. She then began to get nervous; palpitation of the heart; dryness of the throat; would tire easily at the least exertion. She noticed a tight feeling around the neck as of a constricting band. *Examination* showed enlargement of thyroid; exophthalmos; nervous irritability; difficulty in swallowing; pressure symptoms; tachycardia, pulse 140 to 170; large cystic goitre.

This patient was operated upon in a four room apartment of a five story tenement on the lower west side, with no special preparation, except about the field of operation. Dr. William Seaman Bainbridge, assisted by the author, enucleated the goitre by Kocher's method. The patient was in bed for three days and had no rise in temperature. She was up and about on the fourth day and on the eighth day went to her family physician's office to have the sutures removed. She had absolutely no symptoms of toxic absorption, and the only medication she received was ten grains of sodium bromide three times a day. The patient began to improve immediately; her pulse came down steadily and now ranges between seventy and ninety, and her cardiac murmurs have disappeared. Her nervous condition is very much improved and she now performs her household duties and social functions. She has gained in weight and feels in excellent condition.

The *advantages* of general anesthesia are: 1. The operation can be done more quickly; 2, the patient is relieved of the attendant nervous strain; 3, there is comparatively no strain upon the operator.

The *disadvantages* are: 1. The greater amount of shock and increase of toxic symptoms, which is probably the most important factor in cases of goitre; 2, greater hemorrhage; 3, danger of too much lowering of the blood pressure when the heart action is weak; 4, increased risk of accidental injury to the recurrent nerve; 5, less guarantee of a perfectly aseptic course, for the dressings and with them the wound itself are apt to become contaminated by vomited matter.

The second is a case illustrating anoci association, the method which Doctor Crile[1] brought into such prominence, and on which he recently read a paper at the Clinical Congress of the Surgeons of North America. This is a so called shockless operation. The patient is admitted to the hospital about a week before the scheduled time, and each day, precisely one and a half hour before the time set for operation, he receives a hypodermic injection of water. Each day, at the appointed hour for the performance of the operation, the one who is to administer the anesthetic sees the patient and gives him a whiff of cologne; the mask is put over the patient's face, the room is darkened and the anesthetist talks about the treatment. The surgeon also comes in each day and spends some time talking to the patient who is led to believe that it may not be necessary to have any operation performed if the treatment is satisfactory. On the day of the operation, which is unknown to the patient, he is given a hypodermic of scopolamine, grain 1/300, and morphine, grain 1/8, instead of the water, one and one half hour before the scheduled time. When the anesthetist comes to give the treatment on this day, he secretly induces anesthesia. A general anesthetic is begun with the patient unaware of its administration. Crile uses gas and oxygen to make the patient unconscious and then the neighborhood of the wound is anesthetized locally, and the nerves are blocked by the use of novocaine, one quarter of one per cent. Throughout the operation, each part is insensitized by novocaine until ready to close the wound, when the tissues are infiltrated with quinine and urea hydrochloride, one half of one per cent. This ren-

*Presented at meeting of the People's Hospital Clinical Society, 1913.

[1] See New York Medical Journal [illegible]



FIG. 1.—J. A., of Case III, exophthalmic goitre, before operation under local anæsthesia.

ders the wound and parts insensitive for twenty minutes to one half hour from the time of injection, and they remain so for from twenty-four to thirty-six hours. The patient awakens when everything is over, in the same darkened room with the same people about him.

Since Crile has been conducting the operation on the new principle of anoci association, with recognition of the importance of Kocher's progressive elimination of glandular activity, the mortality has all but disappeared, excepting in those patients who are moribund at the time of operation. Recent statistics of all cases amount to about two deaths in one hundred. Judging from the end results of the operations, no patient died of the disease after leaving the hospital; every case was either benefited or cured. Among the factors which influence these end results were: 1. Environment of patients; 2, freedom from nervous shock; 3, means at hand for diversion; 4, avoidance of strain; 5, elimination of shock at the time of operation.

Whether or not we believe in the extremes of this particular method does not matter. It has its interesting side, and Doctor Crile has reported many excellent results. Perhaps a certain amount of anoci association is necessary in all operating to do full justice to the patient. The importance of personal contact with the patient beforehand cannot be too strongly emphasized, in that it tends to establish a certain degree of confidence between the patient and surgeon.

CASE II. Mrs. M. F., aged twenty-eight years, married; two children; three miscarriages; born in United States; menses regular; occupation, housewife. *Family history:* Father and mother living and well. *Previous history:* Diseases of childhood, measles, scarlet fever, and diphtheria. Habits, regular. Always in good health until the age of twenty-one years. One year after marriage, had uterine hemorrhage and miscarriage, followed by curettage. Subsequently gave birth to a healthy child. Within the next three years had several curettages. Three years ago patient began to complain of palpitation of the heart, tachycardia, extreme nervous disposition, and great disturbances in the sexual centres. Nervous disorders shown in tremors of hands and body; inability to attend to any social duties, even house affairs. Eyes began to bulge, neck became larger, and pressure symptoms began to develop. *Examination* showed enlargement of both lobes of thyroid gland; extremely nervous with no power of concentration; angioneuroedema; tachycardia; palpitation; high tension pulse, ranging from 140 to 180; hemic murmurs; exophthalmos—very prominent glassy stare in eyes; Kocher's and Graefe's signs present; skin very red, with vasomotor nerves of skin very irritable; urticarial rashes and flushes.

The patient consulted me and told me she had been under expert medical attention for months without any apparent result. She would feel well for a week or two, but the least excitement would provoke a return of her chain of symptoms. After careful examination and study of the case, an operation was advised. She refused, urging medical consultations, with the result of careful medical supervision of the case for almost a year. Every possible method of treatment, including serum injections and high frequency electric treatments, was tried. Bromides and digitalis were given for her heart and nervous symptoms, and special attention was directed to the gastrointestinal tract, for we believe it is a great factor in these cases. She would feel better for perhaps a month or so, but any social function, sexual excitement, or overwork would cause a return of her symptoms, much aggravated every time. She was finally prevailed upon to per-



FIG. 2.—Calm attitude after operation shows comparatively no strain on patient.

mit operation and was admitted to the Alston Sanitarium, where Dr. William Seaman Bainbridge and the writer operated upon her before a large audience of the Clinical Congress of Surgeons. The patient left the sanitarium ten days later greatly benefited. She is now practically a cured woman The incision in the neck is almost imperceptible and her pulse is only 100, even when among strangers and excitement. There are no murmurs present, her flushes are gone, and the neurasthenic symptoms are a thing of the past. She has gained thirty pounds, her appetite is good, and she has attended many functions and dances and is practically normal. In December, 1913, the patient had occasion to see me again. Examination at that time showed a gain of forty-five pounds. The patient is doing her house and executive work, enjoys sexual excitement, and has had no recurrence of any symptoms.

The third case illustrates local anesthesia, the method which appeals to me the most, preferred by Kocher and Tinker, and one which is exclusively used by Doctor Bainbridge in his clinic.

Case III. I. A., aged twenty-one years; single; born in United States; menses twenty-eight days regularly; occupation, student. *Family history:* Father living and well; mother suffering from diabetes; one sister died of ulcer of the stomach. *Personal history:* Diseases of childhood, measles; habits regular; no serious illness until four years ago, March, 1909, when she lost her sister. At that time she began to get nervous and irritable; could not concentrate her mind; headaches would come on in the morning and last through part of the day; would tire easily upon the slightest exertion; nervous symptoms increased, tremor of the hands, palpitation of the heart; tachycardia; hot flushes; patient noticed a tight feeling around the neck band; enlargement of the neck; eyes became prominent. *Examination* showed enlargement of the neck, especially right lobe of thyroid; psychic and bodily unrest; irritability; tremor affecting hands, arms, and legs and becoming general at times with headaches; tachycardia; pulse abnormally frequent and high tension, ranging from 140 to 170; palpitation of the heart; exophthalmos—increased width of palpebral fissure, infrequent winking, want of coordination between the movements of the lid and those of the globe; Graefe's sign on looking downward, Kocher's sign on looking upward. Skin red, vasomotor nerves of skin extremely irritable becoming hot, flushes, metabolism; nausea and vomiting at times.

She consulted several physicians and was treated steadily for two years before she came to me, with electric treatments, serum injections of thyroid extracts, etc., without lasting result.

This patient was operated under local anesthesia by Doctor Bainbridge and the author at the New York Polyclinic Hospital, before an audience of fifty physicians. She spoke and joked throughout the operation, but there never was a moment when she was not under the control of the operator. She has since gained fifteen pounds; she is in an excellent frame of mind and is ready to advise all her friends to have local anesthesia for an operation.

The advantages of local anesthesia are: 1. Considerable diminishing of hemorrhage; 2, free survey of the field of operation is provided, and movements of the throat at critical steps prevented; 3, the inferior laryngeal nerve is absolutely protected by the possibility of phonation in the conscious patient; 4, requiring a better control of the technic on the part of the operator, local anesthesia safeguards the patient against all unnecessary brutalizing of the tissues; 5, lessening of the strain on the kidneys; 6, elimination of the dangers of all general anesthesia; 7, avoidance of postoperative vomiting which involves less danger of secondary hemorrhage; 8, possibility of flushing the kidneys through the stomach by the administration of the abundant fluid, when the patient most needs it, after the operation; 9, patients are apt to consider the operation less dangerous and serious under local than under general anesthesia, and in this way the risk of shock is partly eliminated.

The immediate operative risk of goitre is no more than that of appendicitis. I know of no class of patients who are so intensely grateful and who become such militant partisans of operative treatment as those cured of this disease. They certainly have no hesitation in recommending patients for operation, for they seem to regard the procedure as trivial.

314 East Fourth Street.

ROENTGEN DIAGNOSIS.

By Joseph Friedmann, M. D.,
New York.
Visiting Physician, People's Hospital, Roentgen Department

I present a half dozen of a series of pictures that were shown on the screen before the Medical Association of the Greater City of New York at the last November meeting which serve to illustrate the extreme value of medical and surgical Röntgen diagnosis.

It might be well to remark at the outset that the röntgenogram should not be relied upon as a sole method of diagnosis, but should be used to confirm a suspected diagnosis or where other methods of diagnosis fail.

Fig. 1 (717) illustrates a calculus in the right kidney. One will note that the shadow of the outline of the kidney can be seen. The calculus is situated above the twelfth rib. This case was operated in and the calculus removed before the surgical congress held in New York in November, 1912.

The great difficulty in diagnosing these condi-



Fig. 1.—Case [illegible]
Serial number [illegible].



Fig. 2.—Tuberculous dactylitis.



Fig. 4.—Hour glass stomach with gastroenterostomy opening patent. (Serial number 60.)

tions is due to faulty technic. About forty-eight hours before the röntgenograms are taken, give the patient a purge thoroughly to cleanse the colon: one ounce of castor oil at bedtime and another dose the following night and an enema the next morning, the patient being on a liquid diet. The object is to lessen resistance to the penetrating rays. If this procedure is not followed out, and fecal masses are in the colon, the kidney area on the negative will not show the stone which may be present. A kidney picture to be of value should contain the lumbar vertebræ and their transverse processes, the crest of the ilium, the eleventh and twelfth ribs, and the psoas. Many times it may even show the outline of the kidney. The examination should include the entire urinary tract, namely, both kidneys, both ureters, and bladder.

The next picture (Fig. 2) illustrates tuberculous dactylitis involving the second phalanx of the left ring finger, and shows a beginning destruction around a focal area in the interior of the bone. Tuberculous dactylitis should be distinguished from syphilitic dactylitis. In the latter there is periosteal thickening and increased production of bone, giving the finger its swollen appearance. In tuberculous dactylitis the swelling of the finger is due to inflammation of the soft parts. Multiple dactylitis is usually rhachitic or syphilitic, rarely tuberculous.

Fig. 3 (1008) illustrates an extremely rare condition, known as fragilitas ossium. It occurs in infancy and involves mainly the long bones. This röntgenogram shows the lesion in the left femur with the angulation which is characteristic of this condition. This process continues until spontaneous fracture occurs. The prognosis for bony union is very poor, as very little callus is poured out.

The next picture, Fig. 4 (60) shows an hourglass stomach which is found in cases of ulcer and some cases of cancer. This röntgenogram was taken mainly to show if the gastroenterostomy opening was patent. The large dark oval shadow to the left is the cardia, and the smaller shadow to the right is the pyloric end of the stomach, separated from the rest of the visible portion of the stomach by a considerable space, with a narrow strip of bismuth between. This is the ulcer area. From the greater curvature of the stomach it is possible to notice the bismuth passing into the small intestine,



Fig. 3.—Fragilitas ossium. Left femur. (Serial number 1008.)



Fig. 5.—Adhesions between ascending and transverse colon and terminal ileum. (Serial number 982.)

the röntgenogram being taken ten minutes after the bismuth meal. Six hours later, another röntgenogram showed that the bismuth had entirely left the stomach, and the head of the bismuth column was in the ascending colon, showing that the opening was patent.

The next röntgenogram, Fig. 5 (982) is that of a woman who, thirteen years ago, had aborted, and suffered subsequently from peritonitis. The case was treated abroad, by prominent medical men, as gastroenteritis. This fall, while visiting in New York, she came under the care of Dr. H. A. Bernstein, who diagnosed her condition as adhesions be-



FIG. 6.—Tumor of descending colon. (Serial number 876.)

tween the ascending and transverse colon, also adhesions at the terminal ileum. The patient was referred to me for röntgenographic examination, which fully confirmed his diagnosis. The triangular marker is at the umbilicus. The bismuth, twelve hours after being taken by mouth, is seen in the ascending colon and very little in the transverse. A fine streak of bismuth is seen in the descending colon and sigmoid and a narrow strip in the terminal ileum. The marker P denotes the location of the pain, which is at the ileum where it is much constricted.

The last picture, Fig. 6 (876) illustrates a tumor at the middle portion of the descending colon. This diagnosis was confirmed by operation. P denotes the location of the pain, which is at the site of the tumor.

133 WEST SEVENTY-SECOND STREET.

CARBON DISULPHIDE AS A THERAPEUTIC AGENT.

BY HIRAM H. SEELYE, A. M., M. D.,
Daytona, Fla.

Some thirty years ago I began to experiment with carbon disulphide as a counterirritant, and have on many occasions since been glad that I have had such a vigorous analgesic and cerebral excitant instantly available. As I have seen scarcely any mention of its peculiar properties in recent publications, it seems desirable to awaken new interest in its use by the medical fraternity.

Carbon disulphide is a colorless, very volatile liquid with a penetrating, disagreeable odor of rotten eggs, chiefly employed in chemistry. But the quality I now wish to call especial attention to, is brought out only when it is applied directly to the skin and covered by something to exclude the air, such as a coin or piece of glass. Thus, if a small pledget of absorbent cotton is wet with the liquid and at once covered with a silver quarter or dime, in a few seconds, a sharp burning sensation will be felt under the coin, and this fiery irritation will increase momentarily till it becomes in half a minute as unbearable as the flame of a match.

Now the beauty and utility of this experiment lie in the fact that in four or five seconds after the coin and cotton are removed, so as to admit the air to the skin, the burning almost instantly ceases. Only a little redness and hyperemia of the surface remain, for from a few minutes to half an hour, to show where the application was made. No blistering follows, unless a very prolonged treatment, never necessary, is made. It is by reason of these qualities of very quick and very evanescent action, that some peculiar therapeutic effects may be obtained. These are chiefly counterirritant, anodyne, and psychological. To be always available, a small vial of about two drams' capacity should be carried about in the medicine case, partly filled with the agent, and enough absorbent cotton to absorb it all. This may be kept from touching the cork, and so leaking out as a vapor, by inserting into the end of the cork inside the vial, a pin with the head down; or a small glass stoppered vial may be used. When ready to use, the cork may be removed, the cotton drawn up by a wooden toothpick to the orifice, and the bottle then held reversed over the skin till the desired effect is obtained.

Now for its practical uses. Whenever an immediate counterirritant is indicated, as in vomiting, for instance, the same effect will be produced by a quarter minute's application over the epigastrium as by a strong mustard plaster after half an hour's use. The superficial capillaries may be distended almost instantly, to relieve stasis or congestion beneath any part of the skin surface. As an anodyne it often promptly relieves neuralgias, headaches, and nearly all local pains, and at the same time the nerve currents are aroused and focused in a new direction as the patient's attention is concentrated on the lively burning sensation. While his interest is fixed and held by the new pain, the former one is forgotten. The stream of nervous energy that was overcrowding one set of neurons is at once diverted into new channels allowing a period of rest for recuperation of the overirritable cells.

Here we approach the psychological effect induced by carbon disulphide, which is the principal feature I wish to emphasize in this paper. The physician who ignores the power of suggestion in disease, both as a causative and curative factor, fails to get the most out of his therapeutic efforts. The mental effect on the patient, shown by his confidence in the doctor and the measures he uses, goes far toward hastening recovery. To illustrate this, I will relate here a few experiences of my own,

where the remedy we are considering aroused the expectancy of the patient and produced immediate results.

Case I. Mr. A. B., a middle aged farmer, came into my office with head held stiffly and unable to rotate it to the right; a case of typical "wry neck," due to exposure to a draft the day before. Said that he had another such attack some months before, that lasted three weeks. "Could I help him out of this more quickly?" "Yes, at once," I replied. I then held a pledget of cotton, moistened with carbon disulphide and covered, over the affected sterno-cleidomastoid. While his whole attention was now fixed on the intense burning I told him to move his head to the right and back and forth, remarking that as soon as he could rotate it freely I would remove the cotton and the pains would all stop. The result was prompt, and he at once said the lameness was gone, and in two or three minutes he was cured. There was no return of the trouble and he left greatly delighted.

Case II. C. D., boy, aged eighteen years, had had acute rheumatism in arms and legs for about a week. Treated him in the usual manner by salicylates, and as he was then able to get about comfortably, I discontinued visits; supposed he remained well. About a month later, met his mother, and was surprised to learn that he was still confined to the house, going about with the aid of a crutch. Called to find him unable to bear any weight on the right foot without intense pain in ankle. Found no swelling or other evidences of inflammation, and so concluded the pain was due to timidity or fear, and that a persistent impression that the cause was still there, produced a mental image of pain when the act that formerly caused it, to wit, weight on the foot, was repeated. Not letting him suspect my opinion, I informed him that I expected to cure him in a few minutes by means of a powerful remedy. On applying the carbon disulphide to the ankle and calf of the leg, and encouraging him to bear weight on the foot at the same time, telling him the sensitiveness was now gone and he could walk all right, he accepted the powerfully urged suggestion, he believed, and was cured. He ran, jumped, and danced about the room, and said he had no more use for the crutch. His mother was surprised and pleased. The recovery was complete in less than five minutes from the beginning of treatment, and he attended school regularly thereafter with not a twinge of pain.

Case III. Miss E. F., aged eighteen years, shop girl, had taken a "headache powder" on retiring. Slept soundly all night. Next morning a girl friend, finding her fast asleep after her usual hour for waking, shook her and called to her in a startled manner, "Edith, what is the matter with you, wake up, can't you speak?" The subconscious mind is peculiarly susceptible to suggestion at the moment of waking. Hence the first idea forced upon the girl's dawning consciousness was that something was wrong, and she was unable to speak. Then, fearing that might not be all, she tried questioningly to move her hands, arms, and legs. As she feared, she could not. Could move only her eyes and gaze helplessly around; otherwise was totally paralyzed. A physician was summoned, who failed to recognize the peculiar case and only added to the trouble by asserting that the powder had poisoned her and that her condition was serious. He made hourly visits until six o'clock in the evening, with no results. He was then dismissed and I was summoned. Quickly recognizing the probable condition of affairs, I sent from the room the sympathizing crowd of onlookers. Then, addressing myself confidently to the patient, I assured her that her condition was not at all serious and she would quickly be cured. She looked surprised and expectant. After applying the carbon disulphide to the skin over the larynz, with the assertion that now she could speak, in a moment she did so, asking me to remove it as it was burning terribly. Then it was used on the arms, and she found she could move them, next on the legs and they now responded to her aroused will, and as her faith was increased she was made to get out of bed and walk and jump about the room. In less than five minutes after the applications were begun she was laughing and running out into the hall and shouting to the crowd below stairs that she was all right. She was, and remained so, as I had assured her. The startling activity and apparent power of the carbon disulphide had concentrated her attention on the suggestions verbally and repeatedly made, aroused her will power, and overcome the mental paralysis which was all she had. That had been induced by fear, because of her friend's abrupt suggestion before her active mind was completely awake.

Case IV. Mrs. G. H., a young and refined married woman, was to receive at a social gathering the night following the morning she called at my office. She had been exposed to cold and had suddenly lost her voice; could speak only in whispers. Unless promptly relieved she would have to forego the reception that evening. I assured her she would be able to attend all right, as a counter-irritant which I was about to use would immediately relieve the laryngeal congestion which was paralyzing the vocal cords. Then, after a few seconds of the application of the carbon disulphide on the front of the neck, she was encouraged to try to speak. This she did in a low, timid voice. Two more applications aroused her confidence and will power and energized her efforts till she could readily be heard to speak in the next room. She departed, able to talk as loudly as usual, and that evening attended the reception and carried on conversation for hours with no difficulty. Of course, the counterirritation caused a superficial temporary hyperemia, thus somewhat relieving the catarrhal congestion in the larynx, but the converging of the currents of nervous energy to act on the vocal cords and the aroused will power, due to the active suggestions so vigorously emphasized, were the chief elements in the cure.

Case V. Miss J. K., a highly strung society girl of about eighteen years, after some event that had momentarily disturbed her mental equilibrium, went off into a typical attack of hysterics, crying, laughing, and screaming, so as to terrify all about her. They could do nothing to control or quiet her. On being introduced into her presence, I calmly expressed my sympathy for the sufferings but told her I should have temporarily to increase them in order to relieve her. Then, after the carbon disulphide applied to the back of the neck, began to produce such an intense burning that she could think of nothing else, and I assured her that only after she had become calm and quiet could I remove it, she at once succumbed and became as rational as ever. After promising her that the treatment would certainly have to be repeated should any of her symptoms recur, I departed, confident in the permanence of the cure. I have found such an application of carbon disulphide invariably more promptly restorative of the mental equilibrium in these so frequent attacks of nervous collapse or hysteria in young women, than the more disagreeable dashing of cold water or other commonly employed measures to restore sanity.

Case VI. Mr. L. M. was a vigorous young man, aged about thirty years, staying at a summer hotel. Was apparently overcome by heat, the thermometer being in the nineties. Fell unconscious on the lawn and was carried to the hotel veranda, where a crowd gathered around and watched the ineffectual efforts of inexperienced volunteers to restore him. For several hours he alternated between violent convulsions, with delirium, requiring several men to hold him, and deep coma. At last I was summoned from a neighboring hotel. After a careful examination and cool consideration of the symptoms, I was convinced that I had to deal with a purely hysterical condition, aggravated by fear and the sympathetic interest and alarm of the bystanders. So, after dismissing most of them, while the patient was apparently, but not actually in an unconscious condition, I confidently assured the few remaining onlookers that the measures I was about to take would relieve the cerebral congestion, restore him to consciousness, and quickly remove all the symptoms heretofore so violent. On applying the carbon disulphide to his forehead, the burning pain made him wince and open his eyes. I thereupon remarked that he was waking up now and that another application over the larynx would restore his speech. It did so, and he wanted to know what was the matter. Next, making applications to the back of the neck and along his limbs, with positive assurances that he would soon feel easy and calm and be able to walk, his confidence was soon gained, and on my assisting him to rise, he quietly walked the length of the veranda, climbed two flights of stairs, undressed, and went to bed; there I left him, telling him that he would rest easily. He slept naturally all night and awoke feeling as well as ever and needing no further attention. The seemingly wonderful power of the carbon disulphide in accomplishing the pre-

dicted results had progressively increased his confidence, and his mind and will power, thus directed in the right channels, did the rest.

Case VII. N. O., a little girl aged nine years, gradually became paralyzed from the waist down, and finally lost control of the bladder, bowels, and legs. Had been confined to bed for several days before I was called in consultation. Her attending physician feared infantile paralysis or some obscure spinal affection. On my failing to find the typical symptoms or evidences of any such trouble, with his assent, I undertook the application of carbon disulphide, coupled with such suggestive remarks as would serve to arouse her nervous energies and will power. Placing the cotton pellet over her bladder for a moment and then seating her on the chamber, with the assurance that she could now empty her bladder, she did so for the first time in several days. Thus convinced of the power of the remedy, afterward she responded consecutively to applications to the thighs, lower legs, and feet, by getting up, walking across the room, and running out into the adjoining kitchen to her parents, who believed a miracle had been wrought. She then ran a race with her little brother out of doors and kept up with him all the way. After turning the case over again to her regular attendant, who was nearly as much astonished as her parents and friends, and who failed to grasp completely the principles of suggestive treatment, she had a partial relapse, but finally recovered.

Ten years later I was asked by another physician to see in consultation a young lady who was supposed to have an ulcer of the stomach and seemed to be starving to death, as she persistently vomited all food, as well as much mucus, bile, and blood. Anything swallowed came back immediately. I soon recognized the young lady to be the same person as the little girl of nine years whom I had treated ten years before. After promising her that I could relieve her again, as I had so quickly ten years earlier, and I felt I had gained her confidence, I made the usual application over her epigastrium with the vigorous assertion that now she could retain anything. She then drank in turn water and milk and swallowed bread and other solid food, expecting to keep them down as I had promised. After waiting in vain for half an hour to see them rejected, I left her again in the hands of her regular attendant, with instructions for her future management.

It seems a defect in our medical ethics that a consultant is not allowed to carry on a course of treatment where he is sure of results and feels that the lack of experience on the part of the original attendant unfits him to exercise efficiently the most important element in promoting a permanent cure. For so it proved a second time in this same case.

Case VIII. H. P., a woman aged thirty years, was brought to the hospital in a comatose condition, with general symptoms of uremia. She was catheterized, but no albumin was found. After many hours of active treatment by medication, hot packs, etc., consciousness was restored and she seemed convalescent, though still confined to bed. Two days later, after a cursory examination and finding her seemingly comfortable, though inclined to be talkative, I cut her short and passed on to the next bed. A few minutes afterward a nurse came hurriedly to inform me that H. P. seemed to be dying. Turning back, to my surprise I found her in an apparently critical condition, unconscious, with rapid respiration, stertorous, abundant mucous rales, pulmonary edema, feeble heart action, reflexes abolished, and insensitive to pin pricks. All the usual accompaniments of immediate dissolution were present. Having already recognized the emotional character of the patient, I at once concluded that these symptoms had been induced by anger, because of fancied neglect, and resulting autosuggestion. As an offset to this, I determined to use countersuggestion in a most vigorous manner. So, ordering some carbon disulphide to be brought I applied it first over the eyes, the most sensitive part of the body, at the same time remarking to the nurses and onlooking doctors that she would either be dead or completely recovered within five minutes. Hearing me say that the burning sensation would steadily increase till she became conscious and opened her eyes, she at once responded to the indirect suggestion. Then, when I added that in a moment she would be able to speak, she soon cried aloud that I was burning a hole in her at the spot over the larynx where I was then holding the cotton. On my asserting next that not till her breathing should quiet down and the rales disappeared would it be safe to remove the cotton from her chest, she quickly recovered her normal appearance and vitality. A suggestive warning that she could not pull through another such attack, was sufficient to ward off any future repetition of such deviltry. In this case, the patient being supposedly unconscious at the beginning of the treatment, the audible suggestions were made to the bystanders, knowing that the subconscious ego of the woman would hear and respond more readily than if personally addressed.

I might go on to describe numerous other conditions where similar suggestive measures have been followed by equally rapid results, though the measures used, to concentrate the attention were not always the same. But these are enough to illustrate the power of carbon disulphide rapidly to bring a patient into the suggestive state by fixing the attention on the one part which the physician desires to be impressed on the mind. Similar though more tardy results may be obtained by arousing the faith of the subject in homeopathic measures, osteopathic or chiropractic manipulations, amulets, holy water, Christian Science beliefs, magnets, electric appliances, and countless other measures that appeal by their mysterious and startling effects. But I know of nothing that will so quickly converge all the nervous energies or vital force in one direction as the vigorous and confident application of carbon disulphide, backed by the personality of the intelligent physician.

Therapeutic Notes.

Treatment of Lupus by Scarification, Zinc Chloride, and Tincture of Iodine.—J. Nicolas and H. Moutot, in *Semaine médicale* for September 17, 1913, are credited with successful use of the following procedure in lupus: Cross scarifications are first made, down to a depth where a resisting layer of tissue is felt, and over an area somewhat larger than that apparently covered by the lesions. Bleeding is then carefully arrested, tension being meanwhile exerted upon the skin to hold apart the margins of the incisions. At most ten minutes are required to secure complete hemostasis by means of tampons of absorbent cotton. With the skin still on the stretch, the area is then painted over several times with a solution of zinc chloride:

℞ Zinci chloridi, ...gr. xlv (3 grams);
Aquæ destillatæ, ...℥i (30 grams).
M. et ft. solutio.

To favor penetration of the zinc salt the area may even be rubbed with the applicator, which consists of gauze or cotton mounted on a stick of wood. After each application a tampon is used to remove the excess of solution. The caustic action is known to be sufficient when the cross scarifications turn white. After again taking up the excess, the area

is painted over with tincture of iodine. The after-care consists in applying morning and evening tincture of iodine diluted four or six times with eighty per cent. alcohol.

Healing of the scarifications takes place in five to twelve days, and results in the production of a whitish surface with a network of scarlike lines enclosing small islets of lupus tissue. At subsequent treatments these islets are progressively dealt with, the linear scarifications being made each time in different directions, until finally the whole area is transformed into a sheet of whitish cicatricial tissue. The latter is the same as would result from simple scarification, being supple, even, and inconspicuous. From their experience with the combined method in numerous cases of lupus vulgaris the authors conclude that it leads to a much more rapid cure than simple scarification or scarification with iodine alone. Superficial and relatively small lupous areas are cured by four or five treatments, that is, in about two months. The method was also tried in a few cases of lupus erythematosus, but with less satisfactory results; although there was rapid improvement at first, complete recovery was obtained only after a long period, and at times recurrence followed.

Radium Treatment of Uterine Fibromyoma.—H. Chéron, at the London International Medical Congress (*Paris médical*, November 8, 1913), reported that he had secured gratifying results, especially in interstitial fibromyomas, by vigorous intrauterine radium treatment. Pure radium sulphate to the amount of 0.12, 0.15, or 0.2 gram was introduced in the uterus on a suitable holder, care being taken to have the salt evenly distributed around the axis of the latter, so that every part of the uterine cavity would receive radiations of equal intensity. The result was a prompt melting away of the fibromas, together with arrest of menstruation. The radium is used by the author both alone and in conjunction with the x rays (seldom exceeding 30 to 40 H. units).

Treatment of Chronic Nasal Catarrh.—W. Wilson, in the *Practitioner* for October, 1913, states that it is absolutely essential, in the treatment of chronic catarrh, that the general health be perfected. Many patients will recover upon adopting a wholesome open air mode of life, with abstention from tobacco, alcohol, etc. Calomel on alternate evenings, with magnesium sulphate in the morning, should be employed to relieve portal congestion.

Local treatment consists of simple lavage, which, however, must be persisted with. One teaspoonful of the following powder, added to a pint (500 c.c.) of tepid water, forms an efficient preparation for the lavage:

℞ Powdered boric acid,)
Sodium bicarbonate, ... equal parts.
Sodium chloride, ...)

Add a little crystallin menthol, mix well, and grind.

A bulb syringe should be employed in the douching, but great gentleness is necessary. If the head is bent somewhat forward and the patient performs rapid, sharp expirations through the mouth, there will be little danger of the solution entering the sinuses. On no account, however, should a swallowing movement be made.

Where there is a tendency to dryness and crusting, local treatment is best carried out by means of an oily solution sprayed with an atomizer:

℞ Mentholis, ...gr. v (0.3 gram);
Camphoræ, ...gr. ii (0.12 gram);
Olei eucalypti, ...miii (0.2 gram);
Olei amygdalæ dulcis, q. s. ad.....ʒi (30 grams).
M. et ft. solutio.

Where, upon examination, so much nasal obstruction is found that cocaine and epinephrine cause no shrinkage of the tissues, establishing freedom of the respiratory passages by operation is necessary before any treatment of the catarrhal condition can be successful.

Treatment of Furunculosis.—A. Mauté, in *Presse médicale* for September 6, 1913, condemns incision of furuncles, as it does not hasten resolution of the lesion and merely adds the pain of the operation to that already present. When a point of fluctuation appears in the centre of the boil, puncture of this spot with a fine galvanocautery needle will give the same results as wide incision. Even carbuncles, provided they are circumscribed, may be cured without incision by immediate use of staphylococcic vaccine in small doses. In dressing a furuncle the author uses a poultice in preference to any other device. The poultice should be small so that it will not cover any healthy skin and transfer the infection to its follicles, and should be kept in position merely by two or three small strips of zinc oxide plaster. As soon as suppuration has ceased, all dressings should be discarded. Where the furuncle has not been completely evacuated, remaining hard and inflamed for some time, it may be covered for a day or two with an ointment of colloidal silver. This is generally rendered unnecessary when vaccine is administered, free and rapid suppuration then taking place.

In a few cases of large, sluggish furuncles Bier cupping has seemed to the author of benefit. In confluent furunculosis of, e. g., the back, neck, forearm, or lower limbs, it is essential not to apply large occlusive dressings to entire regions of the body; each lesion should be separately covered. As for measures to protect uninvolved areas from infection, the author uses camphorated alcohol ether, or carbon tetrachloride containing one or two per cent. of iodine. After this has been applied and the skin has become quite dry, talcum powder should be dusted over the skin. Full baths, even antiseptic, should be omitted for a week or so after the last furuncle has healed, as they soften the epidermis and thereby favor the entrance of germs. In confluent furunculosis of regional distribution the author has had good results from having the patient make a sachet of trioxymethylene, of such size and shape that it can be applied directly to the region involved. The heat of the body liberates formaldehyde from this compound, and usually in a single day the skin is thus rendered sterile. The sachet should not be applied to actually suppurating areas, as moisture renders it irritating. It should be covered with impervious material. This measure is well borne, though causing in some persons a mild sensation of burning.

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EDITORS

CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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CAMPHOR.

Years of pharmacopeial study will not teach a physician the art of boldly tracing the grand outlines of a new and coordinated system of medication. Doses cannot be divorced from effects, and effects are dependent on doses—this is the keynote of the up to date use of camphor in pneumonia, a masterpiece in the art of handling colossal doses in the sphere of therapeutics and disease. It was urged by Ziemssen that the dose of camphor has no maximum, and his successors, Hirschel and Kolb, have used 300 c. c. of one per cent. oil, and fifty c. c. of ten per cent., which were injected into the peritoneum. Hirschel condemns the use of ten per cent. oil, and Vignard and Armand inform us that 100 and 150 c. c. are large doses. Animals, according to Hoehne, die of fatty embolism of the heart. In pneumonia, however, Certain has given four grams daily, and Cruikshank thirty to forty grains every four to six hours (*New York State Journal of Medicine*, February, 1914). Certainly these doses appear to fit the disease, but not the textbooks and pharmacopeias. In healthy men, says Lemaire (*Gazette hebdomadaire de Bordeaux*, p. 279, 1911), a grain of camphor has little effect; five grains, on the other hand, produce warmth, a quick, full pulse, pleasant excitement, headache, and larger doses, exaltation. At this point, observes Binz, "the volume of respiration increases" (*Arzneimittellehre*, p. 102, 1914). In animals, he adds, "the heart performs a greater amount of work; in man camphor produces an intoxication like that of ether or alcohol." The lethal dose, writes von Jaksch (*Die Vergiftungen*, p. 401, 1910), appears to lie between three and four grams; yet, according to Leube, people have recovered from twenty grams; according to Berkholz (*Therapeutische Monatshefte*, 1898) from thirty. The mortality, Brothers tells us (*Ibidem*, 1888), is eighteen per cent.

What is the reason of this modern use of camphor? Doses equally great have been given before, but the lethal effects, when they occurred, have seldom been subjects of deliberate study. Till such a step is taken, the value of such doses must be allowed the benefit of the doubt, and accepted as an advance. Our opinion that they are unnecessary may have more weight if we cite some cases of fatal poisoning which occurred of late. Happich's case is that of a woman who died after an injection of camphor oil, the official German preparation of ten per cent. Here the lethal dose was supposed to be 0.1 gram to each kilogram of body weight. Eclampsia had something to do with the result; camphor is most toxic when the excretion of glycuronic acid is hindered, where oxygen is wanting, e. g., in diabetes, carbon monoxide poisoning, chloral poisoning, double pneumonia, sepsis, and anemia (*Münchner medizinische Wochenschrift*, 23, 1911; *Zentralblatt für Gynäkologie*, 36, p. 1009, 1912). Another case is that of Rübsamen. The fatal dose was 170 c. c. of the official ten per cent. oil. We have also come across a third case reported by Koppang (*Norsk Magazin for Laegevidenskaben*, 10, p. 1750, 1912). We regret that we have no space for details. Generally speaking, camphor in large doses stimulated the heart until all stimulus failed. The effect of camphor on the heart is for the moment one of those questions that cannot be put aside. There are two particular contentions experimentally dealt with by Muñoz del Olmo (*Revista de Medicina y Cirurgia Prácticas*, December 28, 1913). There is first the contention of Heubner that camphor reduces the number of heart beats, increasing their force. There is the contention of Lewin that camphor diminishes the energy and volume of the heart. The instances were drawn from experiments upon cold blooded animals, and in the interpretation a postulate is necessary, that the effects in warm blooded animals are different. Del Olmo's conclusion is substantially that of Lewin. Camphor reduces the number of heart beats, and diminishes both the force and volume of systole. The difficulty of forming an opinion is obvious.

ROCKY MOUNTAIN FEVER.

This disease was first brought to the attention of the profession at large by the report of the surgeon general of the United States Army for the year 1896. Doctor Wood, who was post surgeon at Boise Barracks, Idaho, reported the prevalence of a "spotted fever" among the civilians in the surrounding regions. He was ordered to investigate the disease and make a report to the office of the surgeon general. The description which he furnished was simply the verbatim reports of many local practising physicians who had had wide experience with the disease. To this day no better clinical description of this disease is to be found anywhere than in this account contained in the surgeon general's report.

The disease as it occurred in Idaho was not particularly alarming, the mortality rate being low, not exceeding two or three per cent. In 1902 it assumed alarming proportions in the low foot hills of the Bitter Root Valley in Montana. The mortality in this region was high, reaching about seventy per cent. Acting upon the request of the Montana State Board of Health, L. B. Wilson and William Channing, of the University of Minnesota, investigated the disease in the Bitter Root Valley in the spring of 1902, and it is to them we owe our first knowledge of the essential nature and probable causation of the affection. They discovered an animal parasite in the blood of persons who were affected. This parasite they named *Pyroplasma hominis*, and it is now universally conceded to be the cause of the disease. Wilson and Channing also advanced the theory that the disease was transmitted by the agency of *Dermacentor occidentalis*, a species of wood tick. The theory was proved to be correct by King, of the Public Health Service, who succeeded in transmitting the disease to guineapigs by the medium of the tick. This was in 1906. Since that time the investigations of the disease have been chiefly confined to efforts to eradicate the tick. While carrying out experiments in this line, McClintic contracted the disease in 1912 and died from it. The work of McClintic seemed to indicate that arsenical dips for infected cattle, and the destruction of all wild mammals which harbor the tick, together with the clearing of the forests and periodical burning of underbrush carried with it the best prospects of eradication. Notwithstanding the efforts in this direction, the disease continues practically unabated. Fricks, in the *Public Health Reports* for August 8, 1913, says that, so far, practically all the efforts to diminish the number of ticks have been unavailing. Acting on the theory that sheep were possibly in some way inimical to the life of the carrier of the disease, this observer has tried to verify his theory in an experimental way. He says that it is known that on the east side of the Bitter Root Valley the ticks have disappeared since the introduction of sheep grazing in 1890. On the west side, where there are practically no sheep, the tick and the disease continue unabated. Therefore he placed fifty-one sheep in the tick infested region and allowed them to roam at will. In a small area entirely free from ticks he placed ten other sheep. On these ten sheep he placed ticks in all amounting to 295. After the lapse of comparatively short intervals the ticks were found to be dead in over eighty-seven per cent. of the cases where they had been experimentally placed. Moreover in the case of the sheep ranging at will in the naturally infested region the majority of the ticks recovered from their wool were also found dead. Beside this evidence there was the additional fact that many of the engorged female ticks recovered from the wool of the sheep appeared not to be fertilized, which would indicate that something had interfered with the natural life history of the insect. Fricks thinks that these findings warrant the continuation of the experiment on a larger scale during the coming spring, when the disease may be expected to break out again with the advent of the breeding season of the tick.

ALCOHOLISM IN ANCIENT GREECE.

Dr. S. Blabianos, of Athens, has given in his book on alcoholism the history of that vice among the ancient Greeks. No author before him seriously and thoroughly consulted the classical writers on this subject. We learn from his researches that legislators of ancient Hellas took measures against the spreading of the evil among the people.

The word, alcoholism, is of Arabian origin, and was first used by a Swedish physician, Magnus Huss, in 1852 (*Der chronische Alcoholismus*); the Greeks called it *oinosis*.

Hippocrates was the first to give, in his writings, scientific observations of alcoholism, among others an exact description of delirium tremens. He gave also very clearly the localization of the effects of alcohol on other organs beside the brain. The other great physician of antiquity, Galen, was likewise an exact observer of the influence of wine on the human system and the often serious consequences of such influence. It appears that he knew as much as the eminent neurologists and indefatigible workers in the laboratories of the present time. Galen found how wine acted injuriously on liver and spleen. It is remarkable that he has not been mentioned as the forerunner of Lanceraux who at a time many centuries after Galen, when others accused only the stronger or distilled liquors, held that

wine is the principal cause of cirrhosis. Erasistratos of Cos demonstrated at a necropsy made before his students, alcoholic cirrhosis of the liver and this was ten centuries before modern physicians, forgetting, or pretending to forget, the works of their brethren of antiquity, named this pathologic condition after Laennec, as being the first who had described it. Soranos described the lesions of the liver and the spleen and gave a picture of alcoholic liver cirrhosis in so exact a way that we have to recognize him as a clinician of the first rank. Speaking on the same subject, he made also a treatise on ascites and its varieties. Although he does not mention the causes, one of his predecessors, Ephesios, his compatriot and teacher, had spoken of alcoholism as the mediate and immediate cause. Aretæus of Cappadocia, next to Hippocrates the most eminent clinician, mentions also in his works the disastrous consequences of alcoholism. Dioscorides speaks of an absinth-wine as a stomachic as we speak of it today.

Having given the result of his researches into the writings of the great physicians of ancient Hellas, Blabianos repeats what has been said on alcoholism by the historians and philosophers. Most interesting accounts on this subject, taken from these writers, have already appeared in the NEW YORK MEDICAL JOURNAL for October 6, 1906, and the *St. Louis Medical Review* for May 25, 1907. Most remarkable were the sayings of Herodotus, of Xenophon, Plutarch, and of several Roman writers.

FLIES AS PROTOZOON CARRIERS.

That the war against the house fly should be neglected at no time is indicated by a communication of Stiles and Keister in a recent number of the *Public Health Reports*. It is a well recognized fact that flies can carry the bacteria of various diseases from fecal matter to food and thus infect it. It may not be appreciated, however, to the same extent that certain protozoa as Entamœba coli, Lamblia, and Trichomonas may also be carried in a similar manner. As there is no other way for these organisms to gain entrance into the body than by the mouth, it follows that if any of the foregoing are found in the feces of a human being that person has eaten excreta. In a certain village investigated by Stiles and Keister, it was not unusual to find that fifty to 100 per cent. of the specimens of feces collected from the families, contained the spores of the protozoa in question. Judging from the work of these men, it appears that the mechanical transmission by flies of the spores from the feces—usually in surface privies—is the chief method of spreading. Consequently, although the danger is greatest to those living close to such privies, yet those further away are still exposed, and it has been shown by Arnold, Hine, Sanders, and others, that the common house fly may be found as far as a mile from its original breeding place. It is evident, therefore, that improved sanitation is the chief method by which contamination of food can be prevented.

MALARIA IN AMERICA.

Several statements in a paper by Dr. Malcolm Watson on the Prevention of Malaria in the *Glasgow Medical Journal* for February are of special interest to American readers. Doctor Watson, who is one of the best known investigators of the mosquito-borne infections, was specially interested in what he saw in Panama. "There the Americans," he says, "have certainly developed the finest sanitary organization the world has ever seen. . . . It is a magnificent work, and I shall always regard it as one of my privileges that I saw the Panama sanitary commission at work, and met the men who composed the department."

Of great importance is Doctor Watson's theory concerning the freedom from malaria in Barbados, unique among the West Indian islands in this respect. Its freedom has been attributed to the presence of "millions," small minnows which are supposed to eat all the larvæ. Doctor Watson states that this supposition is entirely wrong and the real explanation is that Barbados is composed of a coral chalk, so pervious to water that no surface pools exist. The island is therefore subsoil drained and the so called rivers are nothing but dry channels. As the Barbados minnows are being exported in large quantities with the idea of redeeming other countries from malaria, Doctor Watson's explanation demands immediate and wide publicity.

THE DEATH OF GOLDSMITH.

Oliver Goldsmith, as our readers know, was a physician. At a meeting of the section in the history of medicine of the Royal Society of Medicine, held on January 28th last, Sir William Osler presiding, Sir Ernest Clarke, F. S. A., read a paper on the medical education and qualifications of the poet, which is summarized in the *Lancet* for February 7th. Mr. D'Arcy Power, in discussing the paper, added that Goldsmith took sick in March, 1774, and went to a farmhouse to recuperate from an attack of dysuria; in addition to the prescriptions of his medical adviser, he dosed himself with James's powder, a preparation of antimony, in which he had great faith. He died in convulsions early in April. Mr. Power had submitted this history to Dr. Philip Hamil, who returned as a death certificate: "Old pyelitis. Bacillus coli septicemia, complicated by an excess of antimony in the James's powders."

PERMISSIBLE MEDICAL ADVERTISING.

The commercial public has always professed to be greatly puzzled by the attitude of our profession toward advertising; a kind of advertising, which may be called medical, but which elicits our warmest approval, has just been in use in Kansas. According to *Printer's Ink* for February 19th, the health department of Kansas City, Kan., recently resorted to billboards in its fight against smallpox. Hundreds of posters were used, illustrating the disease in its worst form and urging vaccination. The city schools were also placarded. On the Missouri side of the river, street car cards were used for the same purpose owing to similar action by the health board.

ALWAYS A WELCOME PUBLICATION.

We are in receipt of the latest issue of *Medical Gevaalt*, that for February 21, 1914, published by the alumni of Mount Sinai Hospital and edited by Dr. Walter M. Brickner. This sprightly take-off on professional journalism is as clever and amusing as ever, the advertisements being as good as the contributed matter, and the whole being an admirable example of an extraordinarily difficult form of wit and humor, which, in our land, the editor has made almost exclusively his own.

News Items.

Jefferson Hospital Clinical Society.—Dr. E. Q. Thornton has been elected president of this Philadelphia society, Dr. Willis F. Manges, vice-president, Dr. C. D. Smith, treasurer, and Dr. T. A. Shallow, secretary.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, March 2d, Wills Hospital Ophthalmic Society, Academy of Surgery, and the Philadelphia Clinical Association; Tuesday, March 3d, Medical Examiners' Association; Wednesday, March 4th, Physicians' Motor Club, directors, and the College of Physicians; Thursday, March 5th, Obstetrical Society; Friday, March 6th, Kensington Branch of the County Society and the Southeast Branch of the County Society.

Boylan Bill Condemned.—At a meeting of the Medical Society of the County of New York, held on Monday evening, February 23d, resolutions were adopted condemning the Boylan bill which had been introduced into the Senate of the New York State Legislature, and which is designed to restrict the sale of habit forming drugs. The bill is a modification of the Boylan-Kerrigan bill introduced in the legislature last year and which was actively opposed by the medical profession. The bill was drafted by a Mr. Towns, who conducts an establishment for the treatment of persons addicted to the use of drugs, and whose name has been before the public in this connection for some years. The society also adopted resolutions opposing the enactment of Senate bill No. 3 relating to vivisection.

Jefferson Hospital Chest Clinic Social Service.—An important part of the work in the department for diseases of the chest, of Jefferson Hospital, Philadelphia, will consist in the organization of a social service for the study of the home conditions of patients. It will have for its object the promulgation of those methods necessary to prevent the spread of tuberculosis. In the families of patients suffering with the disease, directions will be given to secure the health of those not yet victims. Incipient cases will be studied with the view of arresting the progress of the disease; patients will be instructed in the manner of life to prevent relapses, and advanced cases will be segregated in the hospital to eliminate the constant sources of the spread of the disease. The work of social service, therefore, will constitute a field of activity of the first importance.

New York Neurological Society.—At the annual meeting of this society, held recently, the following officers were elected: President, Dr. Smith Ely Jelliffe; first vice-president, Dr. E. G. Zabriskie; second vice-president, Dr. F. Kennedy; corresponding secretary, Dr. J. Ramsay Hunt; recording secretary and treasurer, Dr. C. E. Atwood; councillors, Dr. L. Pierce Clark, Dr. A. S. Taylor, Dr. F. Tilney, Dr. Charles L. Dana, and Dr. I. Abrahamson.

American Physicians' First Study Tour.—A prospectus has been issued of the first annual tour of the American Society for Physicians' Study Travels, showing that this tour will include the cities and health resorts of and between Philadelphia, Canada, and New England. The party will be limited to 125 persons and will start from Philadelphia on June 26th, directly after the annual meeting of the American Medical Association at Atlantic City, returning to Philadelphia not later than July 16th. Those interested should communicate at once with Dr. Albert Bernheim, secretary, 1225 Spruce Street, Philadelphia.

Mortality Statistics of New York.—During the week ending February 21, 1914, there were reported 1,768 deaths from all causes, corresponding to an annual death rate of 16.52 in a thousand of population, compared with a total of 1,836 deaths and a rate of 17.83 for the corresponding period in 1913. The causes showing a decreased mortality were diphtheria, influenza, lobar pneumonia, bronchopneumonia, and pulmonary tuberculosis; those showing an increased mortality were measles, scarlet fever, diseases of the digestive organs, organic diseases of the heart, and diseases of the nervous system. The death rate in New York for the first eight weeks of 1914 was 14.85, compared with a rate of 15.34 for the corresponding period in 1913.

Personal.—Dr. S. R. Klein, of New York, has been appointed associate editor of *Medical Progress*, of Louisville, Ky.

On the evening of February 19th a dinner was given at the Hotel McAlpin in honor of Dr. Annie S. Daniel, who for thirty-five years has been in charge of the outpatient department of the New York Infirmary for Women. More than two hundred guests attended the dinner, among the guests being Dr. Abraham Jacobi and Dr. Stephen Smith.

Dr. Linsly R. Williams, of New York, has been named first deputy to the New York State Commissioner of Health.

The fourth annual award of the Willard Gibbs Medal will be made by the Chicago Section of the American Chemical Society, to Dr. Ira Remsen, president emeritus of Johns Hopkins University.

The Samuel D. Gross Prize.—The Philadelphia Academy of Surgery announces that essays will be received in competition for the Samuel D. Gross Prize, amounting to $1,500, until January 1, 1915. The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, Philadelphia, on or before January 1, 1915.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

Dr. William J. Taylor, Dr. Richard H. Harte and Dr. John H. Gibbon are the trustees.

Gifts and Bequests to Hospitals.—Funds for the proposed Jeanes Hospital, Philadelphia, may amount to $6,000,000.

The Methodist Hospital, Philadelphia, will receive $10,000 under the terms of the will of Samuel K. Felton.

By the will of William Hood Dunwoody, who died recently in Minneapolis, $1,000,000 is left for the founding and upkeep of the Dunwoody Home for Convalescents at Newtown, near Philadelphia. The home is to be run in connection with the Orthopedic Hospital, of Philadelphia, but all hospitals can take advantage of the new institution.

The will of Mrs. Odile Bornot, filed for probate on February 5th, contained a bequest of $5,000 to the French Benevolent Society to establish a free bed in a hospital in Philadelphia.

By the will of Mr. William Henry Macy the Port Chester, N. Y., Hospital will receive $50,000.

A Hospital for Communicable Diseases Needed in the Bronx.—At a hearing before the Committee on Public Health of the New York Board of Aldermen on Thursday, February 19th, Commissioner Goldwater pointed out that the Bronx had long been in need of a hospital for infectious diseases, and that the project for the construction of such an institution as Seton Falls Park had lain dormant since 1903, when the city purchased the property for this purpose. Doctor Goldwater said that Bronx children in need of hospital care were now either kept in their homes, to the danger of their families and neighbors, or were transported either to Willard Parker Hospital or to Kingston Avenue Hospital, Brooklyn. The diphtheria wards at Willard Parker Hospital were overcrowded, and that the mortality rate from contagious diseases was higher in hospitals where overcrowding existed than in hospitals where ample air space was allotted to each patient; the postponement of the Bronx Hospital project, therefore, meant that avoidable deaths were occurring in the hospitals of the health department.

Congress on Occupational Diseases.—A committee has been organized for the purpose of inviting the attention of the medical profession and all others interested in the prevention of occupational diseases to the Third International Congress on Diseases of Occupation to be held in Vienna in September, 1914. Industrial diseases and accidents are everywhere assuming more and more importance in public estimation and knowledge concerning them should be based upon accurate data. These congresses, begun in 1906, afford an excellent opportunity to scientists, clinicians, and industrial experts to present the results of their research and observations before an international body specially interested in the prevention and treatment of a most important class of diseases. Among the topics which will be considered at the coming congress are: The physiology and pathology of fatigue, with special reference to vocational work and to the effects of night work on the nervous system; work in hot and damp air; occupational anthrax; pneumononiosis; injuries caused by electricity; industrial poisons; injuries of hearing caused by industrial pursuits; miscellaneous communications.

All who are interested are invited to attend. For membership fees, mail postal money order for $5 to the general secretary of the congress, Dr. Ludwig Teleky, No. 23, Türkenstrasse IX, Vienna, Austria. The committee is composed of the following members: Hon. William B. Wilson, Secretary of Labor, of Washington, D. C., chairman; Dr. George M. Kober, of Georgetown University, Washington, D. C., vice-chairman; Dr. Alice Hamilton, of Hull House, Chicago, secretary; Dr. John B. Andrews, of New York; Dr. Bailey K. Ashford, of San Juan, Porto Rico; Dr. Richard C. Cabot, of Boston; Dr. Norman E. Ditman, of New York; Dr. David L. Edsall, of Boston; Professor Henry W. Farnam, of New Haven, Conn.; Dr. Lee K. Frankel, of New York; Josephine Goldmark, of New York; Dr. William C. Hanson, of Boston; Dr. Emery R. Hayhurst, of Columbus, Ohio; Frederick L. Hoffman, LL. D., of Newark, N. J.; Professor C. R. Henderson, of Chicago; Professor Frederick S. Lee, of New York; Dr. George M. Price, of New York; Dr. Theodore B. Sachs, of Chicago; Dr. William C. Thompson, of New York; William H. Tolman, of New York; Charles H. Verrill, of Washington, D. C.; Professor Victor C. Vaughn, of Ann Arbor, Mich, and Honorable Arthur Williams, of New York.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT

December 29, 1913.

Ozena, an Infectious and Contagious Disease.—Fernando Perez defends the etiological relationship of his Coccobacillus fœtidus to ozena. He bases this on animal experiments in which, after intravenous inoculation with bouillon cultures of his organism, the only anatomical lesion demonstrable was an extensive hyperemia of the anterior turbinates. Before death, the animals manifested an acute serous or serohemorrhagic rhinitis. If the animals did not die, they evolved a chronic rhinitis ending in atrophy. The contagious nature is indicated in the number of cases occurring in families, where several relatives are affected. The presence of this bacillus in the nasal secretion of dogs and its proliferation in sick dogs indicate a possible source of infection. Hofer has carried out agglutination experiments with serums of patients affected with ozena and Coccobacillus fœtidus and the positive results obtained point to the specificity of this organism.

Etiology of True Ozena.—Gustav Hofer reports his results in the treatment of thirty cases of true ozena with vaccines prepared from the Coccobacillus fœtidus of Perez. The vaccine was prepared from cultures taken from seven cases of ozena, and injected weekly, subcutaneously, in doses varying from ten to five hundred million germs. In all the cases treated the Wassermann reaction was negative. Usually a marked local reaction occurred after the third injection; immediately after the first injection, an acute coryza developed with an increase of the fetor. The majority of the patients treated showed a marked amelioration of the symptoms after several weeks, followed in several cases by entire relief. Attempts at agglutination with a high dilution were not successful. Hofer explains this on the ground that the increased toxin formation is responsible for most of the symptoms.

Gallbladder and Gastric Secretion.—William Boss disputes the contention of others that the removal of the gallbladder has a deleterious effect on gastric secretion. In several cases examined previous to operation, the anacidity present seems to have been decidedly improved by the operation; in others, no change whatever was observed.

Granular Atrophy of Kidneys in Infancy.—Carl Jacobs reports two cases of contracted kidneys found post mortem in two children, aged seven and nine years respectively. The etiology is to be sought in previous inflammations of the kidney parenchyma, although true granular atrophy of the kidney is, as a rule, bilateral and is a result of a congenital defect of the embryonal uropoietic system. Although syphilis plays a very important part in the etiology of these conditions, the author avers he has been able to rule out any etiological relationship in the cases he reports.

Trauma and Kidney Affections.—Goldscheider discusses the relationship of the different diseases affecting the kidneys to preceding accidental trauma. In acute traumatic injuries of the kidney occa-

ring directly or indirectly, the outcome may be death, healing without sequelæ, or secondary infection. In any event the relationship to the injury is selfevident. In acute or chronic inflammations of the kidney there are few cases in which accidental trauma may be considered the direct cause. From an insurance standpoint nephritis, occurring after the ingestion of arsenic or submersion, may be considered accidental. Tuberculous nephritis occurring after trauma has never been reported. Dislocation of the kidney has been caused by trauma or, if present previous to the trauma, may be intensified. The symptoms and the loss of efficiency make this one of the most important traumatic affections from an insurance point of view. The development of renal calculi after trauma is often due to the consequent hemorrhages, or to the catarrhal pyelitis which not infrequently follows. Hydronephrosis, pseudohydronephrosis, and pyonephrosis are often the direct result of injuries. The relationship of new growths to trauma has never been proved.

Foreign Body in Esophagus with Perforation of Aorta.—H. Chiari calls attention to the fact that these cases must get a guarded prognosis owing to the possibility of associated injury to the wall of the aorta; this may, as a result of a periesophageal inflammation, bring about a rupture with consequent fatal hemorrhage. Heinrich Klose maintains that no case of Basedow's disease occurs without an associated affection of the thymus gland. In the surgical treatment of this condition it is important to treat the thymus as well as the thyroid. To protect the patient from "thymus death," it is necessary first to make a positive diagnosis of an enlarged thymus; the symptoms are myasthenia, increased vagotonus, and lymphocytosis. In doubtful cases the x ray and the Abderhalden reaction, using thymus as substrates, are of value. Thymus death, which occurs after strumectomy, is due to an acute poisoning of the remaining thymus secretion. To obviate this, it is necessary to resect or excise the thymus together with the thyroid. This is best done by an incision continued down to the jugular vein under local anesthesia with a shelling out of a portion of or the entire gland. Before the operation the patient should be prepared by dietetic and medical treatment, with applications of ice to the goitre and over the precordium.

Treatment of Cancer of Uterus with X Rays.—Fritz Heimann reports eighteen cases of cancer of the uterus treated by a combination of mesothorium with Röntgen rays. Of these eight showed remarkable improvement. Seven were still under treatment. The remaining number have not been benefited. He lays great stress on the therapeutic value of the gamma rays. A section excised from the cervix showed complete disappearance of cancer nests.

Primary Intrahepatic Development of Gallstones.—Stefan Siber reports a case of gallstones without a parallel in the literature. The patient at operation showed an abscess in the left lobe of the liver which contained fifty-one cholesterin calcium gallstones. The gallbladder and gallducts were absolutely free of stones.

Acute Erotic Epididymitis.—Julius Heller believes that sexual incontinences may be followed by physical affections. He reports a case of swelling of the scrotum referable to the epididymis, not due to any previous infection or injury. The only history obtainable is that of incontinence after excessive psychosexual excitement.

January 12, 1914.

Traumatic Cortical Epilepsy after S Shaped Bullet Wound.—H. Coenen reports a case of Jacksonian epilepsy resulting from a bullet wound received in the first Balkan war. The course of the bullet was like an S, as it entered at the posterior pole of the parietal lobe and emerged at the base of the brain opposite the inferior surface of the temporal lobe. Three months after the first trephining operation, at which time small fragments of bone and a hematoma were removed, a typical Jacksonian epilepsy developed, beginning in the hand. A second operation performed at this time consisted of removal of a very extensive callous fibrotic mass from over the original bullet wound with transplantation of a piece of the fascia of the thigh. The patient has since been well.

Aviation Injuries.—Marks discusses the different forms of injuries which the aviator may sustain, as well as those occurring in spectators. From a medicolegal aspect the character of the course is of importance, i. e., flying over sea or land. The majority of injuries sustained are fractures of the skull or vertebræ. Other injuries are rupture of the abdominal wall associated with visceral injuries.

Radium Treatment of Malignant Tumors.—Weckowski suggests that in cases of malignant disease which prove refractive to treatment with x rays may often be markedly influenced by radium. To obtain good results, it is necessary carefully to determine the amount of radioactive substance and to measure accurately the distance required between the tissue treated and the source of rays.

Mesothorium in Carcinomata of the Skin and Other Organs.—Kusnitzky reports the result of mesothorium treatment of skin cancers. In seventy-four cases, thirty-three were clinically cured. In deeper lying skin cancers, it is necessary to filter the rays, which is best accomplished through brass and nickel. This absorbs the soft beta rays which are injurious to the skin. Surgical tumors are best operated on and then exposed to the rays. Occasionally the previous injection of thorium x or metallic combinations make it easier for the rays to affect the tumor.

Significance of Contact in the Spread of Cholera in Servia.—Aumann emphasizes the role of contact infection in the spread of cholera in the epidemic of 1913. The two main foci of infection were the one disseminated by the infected water of the Brigalnitza in Macedonia, and the other extending over the boundary line between Bulgaria and Servia. Although the early cases were water infections, the later cases could be traced directly either to returning soldiers from an infected region, or to infections where the danger from water had been entirely done away with. In addition, the comparatively small percentage of those infected, and the number of persons found to be sick or bacilli carriers who were discovered only after a thorough house to house search, indicate that contact infection was the greatest factor in the spread of the disease.

Influence of Diet on Sugar Content in Blood.—L. Wolf and S. Gutman have investigated the influence of dietetic treatment on the sugar content in the blood of diabetics, and have come to the following conclusions. The amount of sugar present in the blood of patients who have been kept on a mixed diet, if determined in the morning on an empty stomach, is not conclusive as to the severity or mildness of the disease. In cases not complicated by nephritis, removal of carbohydrates diminishes the sugar content. In moderate and severe cases, the sugar content was brought down to a certain point beyond which no change in diet was of any value. Patients dying in coma showed a steadily increasing rise of sugar content despite a fast of several days. When chronic nephritis supervenes glycosuria may be diminished, but the sugar content of blood does not seem to be influenced by any dietetic treatment.

Diagnostic Value of Gonococcus Vaccine.—C. Bruhns considers the temperature rise observed after the injection of gonococcus vaccine of little value. In doubtful cases it is of value as a "provocative" agent, and may cause latent gonococci to appear in the secretion. Complement fixation, when present, is of diagnostic value.

ZEITSCHRIFT FÜR UROLOGIE.

September, 1913.

Treatment of Bladder Papilloma with Electrolysis.—R. Oppenheimer reviews the work of Beer and others with the high frequency current and suggests that better results may be obtained with electrolysis. He says that this method is simpler; there is not so much danger of bleeding, either during or after treatment; there is less pain, and not so much danger of perforating the bladder. He also notes that the treatment takes a longer time than when the high frequency current is used.

November, 1913.

Kidney Bleeding in Hemophilia.—Mankiewicz had a hemophiliac with hematuria to which the following treatment was given: Rest in bed, gelatin and calcium chloride by mouth. Bleeding stopped. The patient now got up; his urine was clear. He was cystoscoped and a normal bladder found. He went to work; hematuria again: styptol and calcium chloride were given and Merck's gelatin subcutaneously. Still bleeding; then horse serum subcutaneously, and practically nonfluid diet. More horse serum, bleeding, and finally transfusion. Bleeding gradually stopped, following transfusion. The author recommends in cases of severe hematuria transfusion and dry diet in which gelatin is an important factor.

PARIS MÉDICAL.

January 24, 1914.

Diagnosis of Diabetic Coma.—M. Labbé and A. Gendron point out the utility in cases of coma where no history is obtainable, and where the characteristic acidosis reactions in the urine are only doubtfully positive or no urine can be obtained, of performing lumbar puncture and testing the cerebrospinal fluid for diacetic acid with Gerhardt's test and for acetone with Lieben's and Legal's tests. Glycosuria in such a case is not a positive indication of diabetes, as it may result also from cerebral hemorrhage or an epileptic seizure. In most instances acidosis reactions in cerebrospinal fluid are less intense than those in urine. The authors report a case in which Gerhardt's test was distinctly positive in cerebrospinal fluid and doubtful in the urine, in which diagnosis was based on this observation; certain other symptoms suggesting, on the other hand, meningitis. No diacetic acid is found in the cerebrospinal fluid in any cases not associated with acidosis, as the authors ascertained by repeated trials in hemiplegic, meningitic, and labyrinthine cases.

PRESSE MÉDICALE

January 24, 1914.

Closed Renal Tuberculosis.—Ehrenpreis lays stress on the fact that a tuberculous kidney closed off from the bladder through obliteration of the ureter cannot be regarded as a cured kidney in relation to the rest of the system. It still constitutes a source of danger both for the contralateral kidney and the body as a whole, and should be removed by operation whenever the patient's condition permits.

Laws of Disease Foci in Pulmonary Tuberculosis.—Chirent discusses the propositions advanced by Molle, to the effect that in individuals with relative weakness of the left side of the body—a condition existing in three fourths of all persons—tuberculous infection tends to invade portions of the lungs underlying the left supraclavicular and infraclavicular and the right supraspinous and infraspinous regions, whereas in those with rightsided weakness the seats of involvement are reversed. While the stethoscope does not always reveal the simultaneous invasion on the two sides, firm pressure with the finger on the skin and muscles covering these areas always shows marked hypersensitiveness compared with the opposite—anterior or posterior—regions, even in the first days of tuberculous involvement. Cases in which, with stethoscopically evident lesions on one side, superficial hyperesthesia is noted only on the other, are accounted for in Molle's "laws." It is to be borne in mind that blistering, cauterization, and even the application of iodine, often cause a shifting of hyperesthesia from one side to the other, Molle's rule consequently not always holding good in cases treated by these measures.

Serum Diagnosis of Cancer.—R. Erpicum, reviewing results of tests for cancer other than Abderhalden's, points out that the best of these—the complement deviation reaction—has given only eighty-six per cent. of positive results in cancer cases and, on the other hand, 7.6 per cent. of positive results in noncancer cases. With Abderhalden's serum diagnosis he obtained fifty positive reactions in fifty-one cases of malignant tumor, i. e., ninety-eight per cent. of correct results; two of these cases were sarcoma. He uses the biuret test instead of that with ninhydrin, as now carried out by Abderhalden, preferring the former because of its far greater sensitiveness, any error in technic at once showing itself in the result of the biuret. This test responds to peptone, but Abderhalden himself considers the possibility of the presence of this body in the serum negligible, and Erpicum always washes the cancer tissue until the biuret test, if previously positive, disappears. In using the biuret test in the Abderhalden reaction, the author adds to fluid containing the

dialysate one fourth its volume of potassium or sodium hydroxide, and, after this, one or two drops of a five per cent. copper sulphate solution. If the reaction is positive, a reddish zone appears about the drop of copper solution and spreads throughout the mixture, the blue drop itself being decolorized; if it is negative, the drop sinks to the bottom and forms a light blue deposit. The author reports a case clinically diagnosed as gastric dilatation with cicatricial stenosis, which gave a positive serum reaction and proved cancerous at operation. In another case, the incomplete hysterectomy apparently indicated for uterine fibromyoma was changed to complete hysterectomy because of the positive serum test; microscopic examination of the specimen removed showed cancerous changes. The author describes experiments supporting the view that Abderhalden's reaction is closely related or analogous to the processes of immunity.

January 25, 1913.

Tonsillectomy in the Adult.—H. Luc favors tonsillotomy in children, tonsillectomy in adults. In tonsillectomy he first paints ten per cent. cocaine solution on the fauces, next injects one c. c. of slightly epinephrinized one per cent. novocaine solution in each of the faucial pillars, and then passes a curved hypodermic needle outward and upward between the lower pole of the tonsil and the tongue, to the outer wall of the tonsillar recess, where two c. c. of the novocaine solution are injected to anesthetize the glossopharyngeal fibres. The operation, begun ten minutes later, consists in encircling the tonsil with a wire snare, seizing it with hook forceps (opened vertically), severing the attachments of the tonsil with a curved bistoury while exerting traction on it with the forceps, and finally, when most of the tonsillar tissue has been delivered beyond the pillars, tightening the wire loop around the remaining pedicle. While suture of the pillars is the most effective and logical means of controlling any severe hemorrhage that may take place, it is often extremely difficult to carry out under the circumstances. Luc therefore sutures the pillars prophylactically in every case. Each suture should enter the anterior pillar and leave the posterior at least one cm. from the edge, in order that the cavity shall be closed deeply as well as superficially. Three sutures on either side are sufficient. In three days they are removed, and the pillars separated if found adherent, as it is best that the evacuated tonsillar recess remain widely open.

SEMAINE MÉDICALE.

[illegible]

Thymus and Exophthalmic Goitre.—F. Rose asserts that the thymus gland plays an active role in certain cases of Basedow's disease, especially those with a vagotonic tendency. In operating for exophthalmic goitre it is best, in the present state of knowledge, to remove the thymus along with a portion of the thyroid whenever the former is found not to have undergone atrophy, which normally takes place. Direct palpation for the thymus during operation should be relied on rather than clinical examination and radiography.

Active Hyperemia as a Diagnostic Procedure.—F. Lejars commends the procedure followed by Sandrock in ascertaining at what level to amputate in gangrene of the lower extremity. It consists in rubbing the skin of the limb with alcohol and ether. The portion of the limb still well supplied with blood shows an active hyperemia, while below the skin remains pale. Amputation in the hyperemic area is never followed by secondary gangrene. Moskowicz has employed the same procedure to find out how much skin should be removed in operating for mammary cancer, areas remaining pale after rubbing with soap and water, followed by alcohol and ether, being suspected of cancerous infiltration; pressure on the vessels by the growth resulting in local anemia. The value of this procedure in mammary cancer has not been as well established as in gangrene of the lower extremity.

BRITISH MEDICAL JOURNAL.

February 7, 1913.

Segregation of Kala-Azar.—J. Dodds Price and Leonard Rogers report their experiences of this fatal and persistent disease in India. They have found that everything requisite to stamp out an epidemic is to segregate all new laborers in new quarters, placed not less than 300 yards distant from infected lines. It is possible to move into these new quarters all families from infected lines. The infected lines are allowed to remain, and it is found that ultimately every previously uninfected person will develop the disease. Further studies of epidemiology tell strongly against the transmission of kala-azar by means of flying insects, and investigations point strongly to the bedbug as the intermediate host. It is possible to infect a certain very small proportion of bedbugs with the parasite, and, while the proportion is small, it is to be remembered that the spread of the disease is relatively slow, coinciding exactly with the relative infrequence of insect infection. Destruction of bugs in the infected hut has been tried, but to be sufficiently thorough it must include destruction of everything in the huts save the walls themselves, and it is probable that even these cannot be heated deeply enough to kill all the contained bugs.

Wild Game as a Reservoir for Human Trypanosomes.—H. Lyndhurst Duke adduces much convincing evidence that in its native state a wild antelope harbors a trypanosome which is morphologically indistinguishable from the human *T. gambiense*, and that the wild fly—*glossina palpalis*—found in the same regions harbors a simiar trypanosome, which is undoubtedly obtained from infected antelopes. The only weak link in the chain of evidence that this trypanosome is infective to man, and the same as *Trypanosoma gambiense* is the fact that no experimental human infections have yet been conducted for want of volunteers. The trypanosome found in antelopes does show very slight differences from that isolated from the blood of infected men, but these differences are probably due to its long sojourn in the blood of ruminants. It seems almost certain that the parasite may persist for years in infected game, and flies contain parasites in a very large proportion of cases.

Zeism or Pellagra?—P. A. Nightingale has studied forty cases of a disease which he terms zeism, the alimentary symptoms being closely similar to those of pellagra, as generally described, but

decidedly different in cutaneous phenomena, and in no way similar in nervous symptoms. He comes to the following conclusions: 1. That zeism is due to continued consumption of finely ground corn, from which a large percentage of husk has been removed. 2. That it does not develop in those who eat the same corn when it is coarsely ground so as to retain the outer layers. 3. That there was no other apparent source than finely ground meal, for persons confined to jail for months developed it. 4. That the coarsely ground meal given to those ill with the disease lead to prompt recovery. 5. That its shortest incubation period was forty-two days, much longer than Sambon records for pellagra. 6. That relapses were not seasonal, but solely dependent upon return to the faulty meal diet. 7. Zeism is not infectious nor contagious. He believes that it is distinct from true pellagra, and closely similar to scurvy and beriberi, forming a third type of deficiency disease.

Spread of Cancer in the Large Intestine.—G. Lenthal Cheatle has cut many longitudinal sections of the whole excised portion of the lower part of the large intestine in cases of cancer, and finds, contrary to accepted views, that cancer does not tend to spread widely and diffusely from its original focus. He finds that it is usually closely confined to the submucous layer; its extent is usually not greater in the wall of the intestine than the involvement of the extramural lymphatic structures. This involvement, therefore, gives the surgeon an excellent guide as to the extent of the necessary resection of the gut. A more limited removal than usually practised will probably give good results, and is certainly indicated in cases which are not fit for extensive resection, which is a dangerous operation.

LANCET.

February 7, 1914.

Fractures of the External Malleolus.—John Bland-Sutton says that a true Pott's fracture is an uncommon accident, especially if the term is reserved for the lesion described by Percival Pott, "fracture of the fibula about three inches above the ankle, rupture of the internal lateral ligament, and eversion of the foot." The common bony injury about the ankle is fracture of both malleoli, occurring in nearly half of the cases. The term malleolar fracture should be restricted to fracture at or below the interosseous ligament. Treatment of fractures involving the external malleolus is usually unsatisfactory on account of the great difficulty of putting the fragment correctly in place and maintaining it there, even when wiring is used, for wire often cuts through the thin fragment. Its successful results were obtained by excising small fragments of bone involving articular surfaces in other situations. Bland-Sutton removed the fractured piece of the external malleolus in three cases, and obtained prompt healing of the injured foot with excellent functional results, all three patients being able to use their injured feet without pain or limp within three months after the injury.

Diathermy.—According to H. Lewis Jones, "diathermy is the through and through warming of the tissues, and it is effected by the use of high frequency currents of large magnitude. It provides an efficacious mode of treatment in several morbid conditions, and seems to act particularly by its influence upon the circulation of the parts to which it is applied. In its medical uses the warming effect can be localized upon a joint or limb, or it can be applied over a large area of the body for the production of more generally diffused effects. In surgery the heating can be so concentrated upon a small area as to cause the thermal coagulation of a tumor, if its destruction is desired. . . . In these heating effects we seem to find the sole intelligible action of high frequency currents. At least that appears to be the case if we except the action of the effluves and the spark discharges sometimes used in high frequency treatment, and even with these the effects of the effluves and the sparking may be defined as due to minutely localized thermal effects acting upon the surfaces exposed to them. There remains the possible action of the ozone and of the violet light associated with this spark production, but these can only play a relatively unimportant part." The method employs a modified high frequency apparatus in which the single spark gap is replaced by several very short ones, hence the discharges are much more nearly continuous. From 500 milliamperes to one ampere are used, and the exposure lasts as long as twenty minutes at times. Arterial hypertension, sciatica, many chronic, and some acute joint affections, neuritis, and neuralgia are among the conditions to which this mode of treatment is applicable with beneficial results, often greater than otherwise obtainable.

Operation to Improve the Effect of an Artificial Eye.—N. Bishop Harman observes that the usual unsightliness of an artificial eye is due to a wide palpebral fissure which exposes too large a portion of the white to view. He suggests the following operation as a remedy: Both lids and the external canthus are grasped in a specially designed clamp; the skin and lashes are separated from the conjunctival layer by an incision five or six mm. long; the skin edges are then united by two sutures passed through short lengths of rubber tubing to prevent their cutting out; these sutures are drawn tightly enough to cause eversion of the wound margins; the extent of the union is to be gauged to suit the individual case, and it is well to make it greater rather than less than necessary, for it can be freed before union is complete. On the fourth day the sutures are removed and the artificial eye is inserted. If the union is too extensive the edges are torn apart to the proper distance. The results are excellent from a cosmetic point of view.

Fragility of the Red Cells in Jaundice.—G. Duncan Whyte cites Chaugard's observation, that hemolysis occurred in stronger sodium chloride solutions than those which cause hemolysis in normal blood obtained from cases of acholuric jaundice. Blood from patients with nonhemolytic jaundice showed no similar fragility of red cells, and even showed an abnormal resistance to hemolysis. "This suggested that there might be in the serum of jaundiced patients a substance which tended to cause hemolysis, and that the red cells of such patients having acquired [illegible]

of this hypothetical substance were able also to withstand the tendency to lysis caused by four tenths and three tenths per cent. solutions of sodium chloride." To determine whether bile salts might produce such an effect Whyte made some experiments with sodium taurocholate, and found that a quarter of one per cent. of this salt caused complete lysis even in one per cent. sodium chloride solutions, while six hundredths of one per cent. allowed hemolysis to take place in half per cent. sodium chloride solutions, which do not hemolyze normal cells. This increase in the susceptibility of red cells to hemolysis in the presence of very small amounts of bile salt lends support to the explanation offered previously, namely that there is some protective substance present in the blood of acholuric cases which leads to the development of resistance on the part of the red cells.

PRACTITIONER.

January, 1914.

Stomach Aches Associated with General Infections in Childhood.—H. Tyrrell Gray is convinced that many of the intestinal and dyspeptic troubles of later life owe their origin, in part at least, to intestinal disorders of childhood. These originate not only from the artificial conditions under which we live, with regard to unsuitable food, etc., but, in some instances, from repeated acute, or persistent and untreated chronic general infections. The commonest sources of general infections in childhood are the mouth, teeth, fauces, and nasopharynx, together with secondary infections of the ears and cervical glands; so the writer lays stress on attention to these, as well as to the routine control of the diet, and to the presence of worms, as points in the treatment of chronic abdominal pain.

The Diazo and Russo Reactions in Pulmonary Tuberculosis.—H. Hyslop Thomson says that a persistent diazo reaction, or a combined diazo and and Russo reaction, occurring in pulmonary tuberculosis of recent onset is a sign of serious signification. The disappearance of the diazo reaction is usually associated with general improvement. A positive diazo reaction with a negative Russo reaction is less serious than the combined reaction. The presence of these reactions is an indication of severe systemic intoxication, and contraindicates treatment by induced autoinoculation or by tuberculin.

Practical Points in Sphygmomanometry.—George Oliver says that the mercurial manometer furnishing standard pressure can be made as portable as any other form. The auditory reading of the pressure extends the clinical range of the manometer, for, while practically excluding the personal equation, it not only yields definitely the complete arterial pressure cycle, but also affords useful hints on such aspects of the circulation as the vigor of the ventricle, the degree and duration of the pulse strain on the arterial wall, the tonus and resiliency of the artery. The maximum reading gives the systolic brachial pressure correctly enough when the artery is normally resilient; but when it is thickened the figure yielded is higher, because the pressure of the crest of the aortic wave is better conducted forward into the brachial artery than when the vessel is normally flaccid. Thickening of the arterial wall appears to conduct the pressure of the trough of the aortic wave much less fully than that of the crest.

Massage as a Therapeutic Agent in the Treatment of Neurasthenia.—James B. Mennell first points out how completely different should be the administration of massage in hysteria and in neurasthenia. A hysterical patient will improve the more rapidly in proportion as the treatment is more severe, but this makes the neurasthenic worse. In neurasthenia only the most gentle movements possible are to be performed; any irritating, so called stimulating movements are to be prohibited. Any point that is tender or hypersensitive is the last that should receive attention. The actual nature of the massage movement performed is of minor importance, provided that it is rhythmical.

BOSTON MEDICAL AND SURGICAL JOURNAL.

February 12 1914.

Peptic Ulcers.—Christopher Graham says that in discussing the diagnostic features of duodenal and gastric ulcers we should consider the periodicity of attacks, chronic course, significant symptoms that appear during the period of attack, the more or less ready control of symptoms. When a patient presents himself with a history of gastric disturbance, occurring day after day for several days or weeks, followed by remissions or intermissions of weeks or months of perfect health, an ulcer is to be strongly suspected. These symptoms come and go for years, remaining the same in character, but increasing in duration and intensity. The average duration of symptoms in cases observed was eleven or twelve years; in only a few was it less than a year. This history of prolonged attack, with intermission or remission, was clear in eighty-five per cent. Pain is the most constant symptom and is characteristic. Location of pain, its type, area of radiation are of secondary diagnostic importance. because most pain is described as epigastric regardless of the location of the lesion; it varies from mild distress, or burning, griping, or colic, to a severity requiring opiates. Radiation is not common in uncomplicated ulcers, and if a clear cut radiating pain to the back, or lower abdomen occurs, cholecystitis or appendicitis may be inferred. It is the time of pain, of its appearance, manner of its disappearance, and its control by food, alkalies, position, and rest that are conclusive evidences. Pain appears after meals, or in clear cut duodenal types two hours before meals. It usually comes on half an hour to four hours after eating: the nearer to the gastric outlet the lesions are situated, the longer the period of food ease. Burning, gnawing, painful feeling begins sooner or later, following a definite type in each case, increasing in severity and continuing until the stomach empties, and either ceases before or continues up to the next meal time. Early cessation of pain is noticed most often when the ulcer is above the pylorus. In the purely duodenal types the pain begins later and may continue until vomiting, irrigation, alkalies, or the next meal brings relief. Food relieves pain, gas, and acidity in seventy-six per cent. Relief lessens as the lesion extends, and is

little or absent in the late stages. Hence typical diagnostic symptoms of peptic ulcer are: 1. The period of attacks and perfect intermission or marked remission of attacks; 2, almost exact similarity of symptoms occurring for days during the period; 3, marked relation of symptoms to food intake; 4, the control of symptoms by food, alkalies, lavage, posture, and rest.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

February 14, 1914

Emetine Treatment of Amebic Dysentery.—E. B. Vedder, quoting Douglas, states that in 1817 Magendie and Pelletier recommended the use of emetine in dysentery, and that in 1829 L. Bardsley obtained good results from it. That this very effectual remedy passed from the ken of medicine was most probably due to the fact that the differences between amebic and bacillary dysentery were not diagnosticated. Experiments in 1910, in Manila, by Vedder demonstrated that emetine is a powerful amebicide, and the results obtained were confirmed by subsequent experiments by himself and others, as well as by much practical experience. Vedder's conclusions are as follows: 1. Emetine is a true specific in amebic dysentery and hepatitis. 2. Hypodermic use of the hydrochloride is the best method. 3. Many cases so treated continue to harbor *Entamœba histolytica* in the feces. 4. It is impossible to state at the present time that patients treated by emetine will remain permanently cured, but the prospect of permanent cures is encouraging. 5. Ameba carriers constitute a sanitary menace. 6. It is possible that amebas may be removed by irrigations of quinine or silver nitrate. 7. Experiments have failed to show that emetine possesses any marked therapeutic virtue in bacillary dysentery, syphilis, rabies, or trypanosomiasis.

Neosalvarsan from the French Point of View.—B. B. Beeson gives the following summary: 1. The initial dose of neosalvarsan in most cases should not exceed 0.45 gram. 2. At least seven days should elapse before a second injection is given. 3. If, following several injections, signs of intolerance are noted, the dose should be kept at the same figure, and reduced if the symptoms do not disappear after further treatment. 4. Distilled water is the best solvent. 5. Administration in concentrated solution seems to be the superior method. 6. Distillation should be performed in an apparatus composed wholly of glass. 7. The intravenous method is the one of choice. 8. Continued headache should be regarded as indicating possible involvement of the nervous system. 9. Neosalvarsan has a most efficient ally in mercury.

Lactic Acid Bacilli in Diphtheria.—S. T. Nicholson, Jr., and J. F. Hogan conclude that local use of lactic acid bacillus and sour milk in nine cases are encouraging enough to warrant further study. Under this practice and intravenous injection of antitoxin, patients are kept in the hospital for a shorter period than formerly. Before a definite conclusion can be reached in regard to the effect of these organisms on the Klebs-Loeffler bacillus, many more cases must be studied, extending over a long period of time, in which comparisons can be made with the former methods of treatment.

Precipitation of Colloidal Gold in Spinal Fluid.—D. M. Kaplan and J. E. McClelland report that from their researches they have been unable to corroborate fully the results obtained by others, who have asserted that this reaction can be secured in all cases of syphilis of the nervous system. The most marked reactions and typical curves, they find, are obtained only in cases of general paralysis and tabetoparesis. A positive reaction occurs in most cases of cerebrospinal syphilis, but the curve is not characteristic. In the majority of cases of tabes, either no reaction occurs or only a weak reaction in the 1.10, 1.20, or 1.40 tube.

Etiology of Hodgkin's Disease.—C. H. Bunting and J. L. Yates state that in a preliminary note published in November, 1913, they reported that by repeated injection of the diphtheroid organism, cultivated by them from cases of Hodgkin's disease in monkeys, lesions of the lymph nodes were produced, showing all essential features of early Hodgkin's disease. Up to that time they had been unable to demonstrate that the organism could survive in the monkey for any great length of time, and therefore could not assert they had produced Hodgkin's disease or had even demonstrated any great pathogenicity of the diphtheroid organism for the monkey. Since then, their experimental work has demonstrated fully the pathogenicity of the culture they were using, and has further shown that virulence of the organism to the monkey may easily be increased, even producing death after a relatively acute illness. While the histological picture of the enlarged lymph nodes of the monkey, taken three months after successful inoculation, shows the relation of the lesion to that of human Hodgkin's disease, it seems difficult to secure infection and at the same time avoid virulence so great as to produce extensive necrosis and softening, and even suppuration.

MEDICAL RECORD.

[illegible]

Chronic Diarrhea and Constipation.—Adolf Schmidt says that recently there were only two groups of chronic diarrhea, chronic enteritis and nervous diarrhea. At present there is a new group, chronic intestinal dyspepsia, with several divisions: 1. The independent intestinal or gastrointestinal dyspepsias; 2, dyspepsias dependent upon liver, gallbladder, pancreas, mesenteric lymph glands, or intestinal vessels; 3, upon parasites in the intestines; 4, those connected with disturbances of ductless glands; 5, anaphylactic intestinal disorders. In the first and most important, achylia of the stomach is followed by atony, ptosis, hyperacidity, and other disorders, all based upon insufficient digestion of food and upon development of bacteria of putrefaction in the duodenum and upper part of the ileum. Treatment of gastrogenous dyspepsia is diet. Beside self evident rules, careful mastication, avoidance of raw or insufficiently cooked meat and vegetables, spices, strong alcoholic, sparkling drinks, etc., the feces, which should be examined daily, indicate the dietary. A suitable, well prepared diet is the best treatment. Administration of hydrochloric acid or preparations of pancreas, gastric lavage, with physiological salt solution or salicylic acid so-

[illegible] the duodenal tube for washing out the duodenum or introducing oxygen, hydropathic procedures, massage, and electrical treatment may be needed. Treatment of other forms of intestinal dyspepsia differs only in minor points. As to chronic mucous, or membranous colitis, in which diarrhea alternates with constipation, the author believes that a considerable part arises from unreasonably breaking the original constipation or simple light colitis with irritating enemas, while another part starts from or is maintained by diseases of the female organs or of the kidneys and bladder, by anomalies in the situation of the large intestine from adhesions, by chronic appendicitis. In this condition the best results are obtained from cautious massage, combined with faradization, moderate hydrotherapeutic measures, use of compresses of mud. In regard to constipation, the question today is, Does retarded movement of the large intestine depend on a primary trouble of peristalsis, or is it a secondary symptom depending on the composition of the feces? Schmidt, an advocate of the latter theory, regards physiotherapeutic measures as the best, which are indicated in all conditions except the mere spastic forms. In his experience, massage is the most efficient; in the beginning it should be performed by the physician himself.

Stiff and Painful Shoulders.—H. W. Marshall says that, summarizing treatments for shoulder troubles, medical features should be given attention in every instance. Sometimes physiological defects in blood and tissues correct themselves without supervision, but with medical care the course of trouble should be shortened. Supportive orthopedic measures should also always be considered, for sometimes changes taking place after mechanical injuries, irritations and pullings upon weakened tissues by movements and weight of the arm, delay recovery. In subdeltoid bursal cases surgical interference is, as a rule, indicated after six months, and in adherent bursæ, earlier. In severe shoulder lesions internal medical therapeutic measures are, roughly speaking, just as important as more pretentious, orthopedic, surgical, and physical therapeutic ones.

Bacteriemia, Infections, and Bright's Disease.—W. C. K. Berlin reaches the following conclusions: The transition of an acute nephritis to a chronic is simply a clearing up of inflammatory process, leaving an injured kidney with a beginning degeneration or Bright's disease. The origin of Bright's disease is a true infection. Toxemias are not the cause of Bright's disease. Toxemias or autotoxemias are responsible for blood pressure changes only.

High Frequency Spark in Prostatic Obstruction.—H. G. Bugbee adds reports of four cases of benign obstruction to fourteen previously published, and gives the following summary: 1. Small, fibrous prostates, median bar elevations, and small lobe obstruction, without general enlargements, have been symptomatically cured. 2. Obstruction from a collar of prostatic nodules, without lateral lobes, has been completely relieved where the tone of the bladder was fair, and improved even when the bladder wall was atonic. 3. Cases of general adenoma, where open operation was contraindicated, were greatly improved.

AMERICAN JOURNAL OF TROPICAL DISEASES AND PREVENTIVE MEDICINE.

December, 1913.

Effects of Certain Drugs on the Dysentery Entamebas.—W. M. James asserts that Deeks's method of treating amebic dysentery by the administration of bismuth subnitrate in doses of a heaping teaspoonful (about three drams) every three or four hours gives results far surpassing those obtained by any measure prior to the introduction of the emetine treatment, and advises that, until it has been shown that emetine alone will completely eliminate the infection, bismuth should be given along with this alkaloid. Entamebas very seldom occur in the stools after the second day of exclusive bismuth treatment, but the drug should be continued until the stools are thoroughly formed. James's microscopic studies showed that bismuth acts on the amebas in a manner different from that of emetine. When the bismuth crystals begin to appear in quantity in the stools, the organisms show changes almost precisely like those exhibited when they are placed in a moist chamber for an hour or two before staining, consisting chiefly in vacuolization and a uniform loss of coherency of structure. Bismuth does not act as a direct poison to amebas, but kills them probably indirectly, by combining with some substance in the bowel—perhaps sulphur—which is essential to their food supply. After emetine has been given, the most characteristic changes in the amebas are granular degeneration and disintegration of the nucleus and fibrillar alterations in the cytoplasm—changes suggestive of a specific amebicidal poison. In administering emetine, James begins with one half to one grain, then gives from two to four and a half grains a day hypodermically—in two to three injections per diem—according to individual tolerance. Usually from nine to twelve grains will bring about what is apparently a cure. The author has seen no relapses as yet, but has used emetine for six months only. He considers quinine and thymol bowel irrigations in amebic dysentery quite worthless.

The Way to Vaccinate.—Isadore Dyer maintains that since vaccinia in the heifer is complete enough to be reinoculable from the lymph in a clear vesicle, it is complete in man at the same stage, and the vaccinating physician should see to it that the eruption stops with the vesicle by purposely breaking the latter and treating the site antiseptically. The procedure he advises is: 1. Clean the area with soap and water. Follow with alcohol sponging, and be sure the alcohol dries off well. 2. Vaccinate by any aseptic method. 3. Cover at once with sterile cotton and hold in place with collodion. A shield may be used over this dressing to prevent its removal. 4. Conduct the vaccination as any other surgical case. Have the patient return on the third, fifth, and seventh days. If there is no itching or pain, do not remove the dressing until the fifth or seventh day. If there is then no sign of vesiculation, reapply sterile dressing as before. Do this every two days until the tenth or twelfth, when, if no vesicles show, revaccinate. 5. If the vesicle

shows at any dressing, brush the surface with tincture of iodine or pure alcohol, then carefully clip the top off the vesicle with sterile scissors. Paint the base of the vesicle with a thirty grain to the ounce solution of silver nitrate or with pure phenol followed by alcohol. Put on a sterile or antiseptic dressing, and change it every two days. At the end of four or six days, there is a dry crust, without pustulation. The patient can now take care of the wound with a dressing of ichthyol (twenty grains), phenol (ten grains), and zinc oxide ointment (one ounce), changed night and morning. An experience of twenty years has shown the author that with this procedure the proverbial "sore arm" is prevented and scarring either avoided or reduced to a minimum.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

December, 1913.

The X Ray in Dermatology.—M. K. Fisher contends that every disease of the skin is a law unto itself as regards x ray treatment; even the question of idiosyncrasy is involved. In general, a tube of low vacuum and only one quarter to one milliampère of current should be used. The author never employs a filter to exclude the less penetrating rays, as these are precisely the useful ones in skin disorders. Best results are usually secured by beginning with a brief application of a small amount of current every other day, and then gradually lengthening the exposures and intervals, and in many instances increasing the intensity of current. In rebellious eczema, especially chronic or recurrent, Fisher finds the rays decidedly useful. Itching is overcome frequently after but one or two applications, in both eczema and pruritus. The scaliness in squamous eczema also tends speedily to disappear, and seborrhea requires but a minimal exposure for its eradication. In psoriasis the author does not recommend the x rays unless the lesions are fairly well localized; the more exposed parts, as the hands and wrists, can be kept clear of the eruption, but there is no guarantee against rapid recurrence after cessation of treatment. In lupus, both erythematous and vulgaris, the x ray is the treatment of choice; the author has secured good cosmetic results. In ringworm and epithelioma the effects are brilliant, and barber's itch, sycosis vulgaris, favus, and acne are also amenable. In acne an exposure every month or six weeks after disappearance of the eruption will almost invariably prevent a return of the disease; from three to eight or nine months of treatment is required, however, to remove the affection primarily. In keloid the author has not witnessed the favorable results reported by others. In hypertrichosis he no longer uses the rays, as the depilation is at best temporary, and danger of a burn attends sufficient exposure.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

Removal of a Wire Nail from the Stem Bronchus to the Lower Lobe of the Right Lung.—R. C. Lynch, who reports this case, in a child four years old, states that the trachea was entered through a low tracheotomy wound made in a previous endeavor to extract the nail. He was impressed with the usefulness of the Jackson film in locating this foreign body, with the great help afforded by the conjoined use of the x ray and bronchoscope, and lastly, while a little doubtful as to the part played by a magnet employed in the procedure, he is sure that some change in the position of the nail resulted from its use.

Suprapubic Intraurethral Prostatectomy.—F. C. Walsh says that he is still of the opinion that in the majority of moderate sized enlargements Young's method is the one of election, but in large middle lobe hypertrophies, in very obese subjects, or whenever it is determined that the enlargement is mainly intravesical or pushing well up into the bladder, the greater accessibility offered by the suprapubic route renders it the method of choice. He lays stress on the great advisability of careful preliminary treatment, by which alone, he believes, the best results can be obtained in all prostatic work.

Results of Sanatorium Treatment of Tuberculosis: Advantages, Cost, Etc.—E. L. McGehee sets forth the marked advantages of sanatorium treatment as derived from a great variety of reports. As to some of the objections which have been raised he says: There has been a more or less prevalent opinion among the laity that the treatment of consumptives in sanatoriums was inclined to render them rather unhappy, as these patients were deprived of the pleasures of home. . . . Further, the objection has been made that the presence of sanatoriums was a menace to the city or town in which they were established. Investigations in sanatoriums, and the statistics given, both in the United States and foreign countries, show the fallacy of these beliefs.

Emergency Surgery of the Skull.—R. C. Kemp urges that every physician should be prepared to handle surgically every case of skull trauma where hemorrhage is present, as such cases must generally be operated in at once if life is to be saved. The newborn, he says, are especially liable to cerebral subdural hemorrhage where instrumental delivery has been used.

New Device for the Treatment of Fractures.—This is described by F. W. Parham and E. D. Martin. It is a band made of malleable iron, from three eighths to one inch in width and six inches long, with a slit in one end and a small orifice in the other, and it is passed around the bone by bending to a suitable angle. The free end is then inserted through the slot in the instrument, made fast to the pin on the screw lever, and with it sufficient force is exerted to make it fit snugly around any unevenness of the bones. It is fixed in position by slightly relaxing the screw as the instrument is turned back over the slit, and is cut to any desired length between the blades of a strong pair of scissors or bone cutters, which are worked to and fro several times. The cut end is then pressed down, and the band remains fixed.

OPHTHALMIC RECORD.

Elliot's Operation of Sclerocorneal Trephining for Glaucoma.—Three papers appear on this subject, which are worth study. The first, A Case of Late Infection, by H. Gifford, points out a very

real danger incident to the procedure. The patient contracted a catarrhal conjunctivitis about two weeks after the operation and two days later a line of purulent exudate could be traced from the trephine hole past the coloboma, behind the iris, and out through the pupil into the anterior chamber, which contained a slight amount of pus. In a number of cases late infections have occurred, at times ranging up to three and a half months after the operation. These cases make it clear that fistulizing operations, with all of their various modifications, which depend for their efficacy on the production of a subconjunctival fistula, carry with them the danger of a late infection, and raise the question whether their use is justifiable in all forms of glaucoma. If the event proves that such late infections are common, it may be doubtful whether they should be resorted to until an iridectomy has first been tried.—R. Denig, A Few Remarks on Trephining, also mentions the danger of late infection, and mainly because of this he prefers an iridectomy in cases of acute glaucoma and of subacute glaucoma, giving the preference to trephining only in cases of the hemorrhagic and simple varieties. He considers the operation not as easy from a technical point of view as it is usually pictured.—Luther C. Peter, Sclerocorneal Trephining in Glaucoma, on the contrary considers the technic simple and surgically good. He is enthusiastic, and thinks the operation promises to be the operation of the future in all forms of glaucoma.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Special Meeting in the Borough of Brooklyn December 1, 1913.

Dr. Robert E. Coughlin in the Chair.

(*Continued from page 406.*)

Anterior Polioencephalitis.—Dr. Irving D. Steinhardt said that he had proposed this name for the infectious disease variously known as anterior poliomyelitis, infantile paralysis, atrophic paralysis of the spinal cord, etc. Patients did not get the benefit of as early a diagnosis as they should, while often the physician seemed to think that his whole duty was finished when the acute stage of the attack passed into the chronic stage. The disease was caused by an extremely minute organism which had not yet been isolated or definitely cultivated for accurate study; the nasal cavity was the main entrance of infection, though the buccal cavity was also of importance. While the specific bacillus was to be considered the primary cause of the disease, the secondary or actual exciting causes should be taken into account, as the mere presence of germ life in the system did not constitute disease. These secondary causes did not belong exclusively to this affection, but were common to all diseases caused by bacilli. The speaker referred to the importance of pathological conditions of the gastrointestinal tract, especially constipation. Improper diet was an important matter, as by far the largest number of victims were young children. Accordingly, in the way of prophylaxis, parents should be carefully instructed as to the feeding of their offspring, the proper care of the nose and mouth, including the first teeth as well as the second. As the toxins of this disease had a strong affinity for the nerve cells, it was highly important that the resisting power of this special tissue should be as great as possible. Hence, shocks, overfatigue, excitement, and all else tending to affect the spinal and central nervous system unfavorably were to be avoided. A secondary exciting cause, however, could not always be found, and sometimes an apparently healthy child was suddenly stricken with a violent attack of polioencephalitis. It was during the first three years of life that children seemed most susceptible. Unfortunately, the length of the period of incubation was unknown. Some writers, indeed, had spoken of a prodromal stage, but the manifestations described would, in most cases at least, answer for several diseases or would serve to increase largely the so called abortive cases. The onset was usually abrupt, though the patient might have been suffering from prolonged constipation or diarrhea. Sometimes it came without warning, and a well child at night would be found paralyzed in the morning. The history included some or all of the following symptoms: Constipation or diarrhea, chill followed by sweating, general or localized, fever, vomiting, restlessness, and delirium or apathy. Hyperesthesia of the cutaneous surface, general or localized, was very common, and was an important aid to diagnosis. Joints and muscles might be painful, but the fact that the pain was worse at night was of no diagnostic service. As the disease process traveled upward, symptoms developed which depended upon the centres affected, and Wickman's classification was the one most generally accepted: 1. Ordinary spinal paralysis, or simple anterior poliomyelitis; 2, progressive paralysis, usually ascending, less often descending: Landry's paralysis; 3, bulbar paralysis; polioencephalitis of pons; 4, acute encephalitis, giving spastic monoplegia; 5, ataxic form; 6, polyneuritis: multiple neuritic type; 7, meningitic form; 8, abortive form. As to making a diagnosis before paralysis occurred, the triad of symptoms, irritability, sweating, and hyperesthesia, were suggestive, and by many considered diagnostic. This combination, however, was far from constant, and hyperesthesia was the most significant. Fortunately, the amount of the original paralysis in any given case was not the amount which would be permanent, for the latter depended upon the actual extent of permanent damage to the cord, also upon how well the patient was treated during the stage of recovery. While it was not advisable to put much work on the enfeebled spinal cord too soon, it was never too soon to take steps to prevent contractions and deformities. In the course of an acute case, when the paralysis halted for from twenty-four to thirty hours, it usually indicated that its limit had not been reached. In the treatment, the keynotes to success were care and persistence. Early surgical interference was nothing less than a crime. A certain amount of improvement took place if Nature was allowed to pursue her own course. In the acute stage one should combat the various

symptoms as they arose. As they had no specific remedy, hexamethylenamine might be given with the idea of some antibacterial effect to limit the threatening damage. Free catharsis should be secured by castor oil or calomel in divided doses, and the nasal passages and throat were to be cleaned out. Counterirritation to the spine was often resorted to. He was opposed to the practice of putting up the affected parts in plaster of Paris. He wrapped the parts in cotton, put them in a position of partial overcorrection, and held them with light splints, so that the unaffected muscles could not distort them by working against the paralyzed muscles. Pressure of the bed clothes should be prevented by the use of a cradle. When the patient was ready to leave the bed, the limbs should be supported by proper braces, and, as soon as lack of pain permitted, gentle massage and passive motion should be started. Electrical treatment should not be begun early; it might do much injury. Later on, the braces might be taken off for a limited number of hours every day. At night, if the braces were not kept on, splints should be applied to prevent contracture during sleep. The supervision of the physician should be constant and painstaking, and home cooperation was essential to success.

Dr. WALTER TRUSLOW said that he felt inclined to blame physicians for lack of proper care in the management of these cases. Personally, he met with very few early cases, but he did see a great many children with deformities which might have been prevented if adequate treatment had been employed early. Unfortunately, many physicians were of the opinion that little could be done to stay the disease. There was, first, a general relaxation of muscles controlling joints, then a partial recovery of muscle control of the joints. All joints were complementary to muscle controls. The treatment consisted in, 1, the prevention of deformity; 2, the upbuilding of muscles; and, 3, compensating for residual paralysis. In regard to the first, he believed that the temporary use of plaster of Paris was of decided service; there should be stretching of muscles, and tenotomy should be resorted to if necessary. Holding what they had thus gained, they could go on to the upbuilding of the muscles. As to the use of electricity, he did not regard it as of much value after the first few months. Massage, however, was of the utmost service. Passive exercise should also be employed, and, finally, active exercise. Extreme patience and perseverance were the secret of success. Finally, they had left the residual paralysis. This was a question of eighteen months, and even longer, before active interference was to be made. The paralysis was to be compensated for by tendon transplantation and tendon elongation by means of silk, of especial value where there were flail joints. They did not have to depend upon the silk ligaments alone, for it was found that upon the silk there was gradually formed a fibrous tissue which was quite strong. In the future it was possible that they would also resort to nerve transplantation.

Dr. JACQUES C. RUSHMORE thought that, in the first place, deformities (which were preventable by massage and manipulation) should not be allowed to develop. Secondly, if they did exist, they should be corrected. Plaster of Paris splints, suitable braces, etc., should be employed. As to the later treatment, muscle stretching was of great value. In his hands tendon transplantation had proved a failure; arthrodesis had not been successful. The production of ankylosis was not, as a rule, permissible. One nearly perfect procedure in flail foot was Whitman's astragalus operation, which allowed very satisfactory motion.

Dr. ROBERT G. MOORE thought that if practically all the cases could be cared for in special institutions, where the patients could be under constant supervision, the results would be much better. He did not believe that any bone operation should be done on a child under ten years old. This was a disease which they should be constantly on the lookout for, and it had been very well remarked that every case of gastrointestinal disturbance in a child was a possible case of poliomyelitis.

Doctor STEINHARDT, in closing, could not admit the advisability of the early use of plaster of Paris. He had referred to the general hyperesthesia of the skin as one of the most characteristic features of the disease, and, aside from promoting muscular atrophy, the discomfort to the patient from such an application could readily be imagined. He still believed early surgery to be objectionable and that the galvanic current should be emlopyed for a considerable time. Arthrodesis was sure to give better results than tendon transplantation. As to all cases of gastrointestinal disturbance being possible cases of poliomyelitis, about three weeks ago he was called to see a child in whom the only symptoms were of this character; yet twenty-four hours later the child was paralyzed from head to foot, and in two days death resulted. In Philadelphia there now was a special institution for cases of this disease, and a movement was on foot to establish one here.

Prolapse of the Stomach and Colon.—Dr. CHARLES EUGENE LACK said that Rovsing had coined the word "gastrocoloptosis" for this condition, but it was hardly sufficiently comprehensive, since patients had frequently suffered from dislocations of other viscera. Rovsing divided his cases into two classes, the virginal and the maternal type. The virginal type he ascribed to early corsets and tight lacing, added to habitual constipation, and maternal ptosis to laxity of the abdominal wall from childbearing added to previously acquired constipation. Lane held that posture, constipation, and adhesions or kinking of the movable with the immobile parts of the intestines was the cause of this condition. Coffey seemed to have harmonized the findings of other observers, regarding the following factors as of prime importance: First, congenital defect in peritoneal fusion. This defect might be a deficient rotation with a deficient fusion of the ascending and descending colon to the peritoneum, together with a failure of the omental bursa to coalesce with the transverse colon. Second, a faulty congenital shape of the abdominal cavity. Third, a lack of power in the abdominal wall to keep up intraabdominal pressure, and thereby a failure to hold the abdominal organs on their natural shelf. Fourth, loss of the extraperitoneal fat which assisted in keeping up intraabdominal pressure. At present, one woman in every five and one man in every fifty were of this type. Some defects could not be remedied in the growing child, but, on the other

hand, there were measures which might be of value in the way of prophylaxis. The ideal abdominal binder for the newly born should be applied as a bandage, starting below the anterior superior spines and going well above the umbilicus. Strict attention should be paid to constipation in the young and to general and abdominal exercises. Again, the serious part played by corsets and tight lacing in the etiology should be recognized. Chapelle, quoting Lane, and Coffey, quoting both, stated that the life history of fifty patients had established the symptoms as severe and frequent headache, nausea, often followed by retching or actual vomiting, in some instances with blood, loss of appetite, loss of weight, cold hands and feet, mental apathy or despondency, persistent constipation, abdominal distention, and general muscular pains and a loss of freedom in the action of the joints. Abdominal palpation was attended with tenderness over the fixed areas of the bowels. As a rule, the cecum was a pelvic organ, and in some instances it was found fixed in the right iliac fossa. Rovsing laid great stress upon the cardialgia occurring immediately upon the partaking of food and always to the left of the median line. In the diagnosis of this condition we ran the gamut of our ability. The constipation must be chronic and a positive factor, relieved by rest in bed, as were most of the stomach symptoms. In virginal ptosis leftsided pain must be present, bearing no relation to the quality of food or the time of taking it. Gastric ulcer must be excluded, and hysteria considered as to cause or effect.

Treatment, as had been well said, was causation reversed. Much should be done before resorting to surgical procedures. Once they suspected the condition, the diagnosis could be readily established. The position of the stomach might be mapped out by percussion and inflation, or by x ray examination; the time of the emptying of the viscus being also noted. Test meals did not seem to be of much value, because no finding was pathognomonic. They could do much for the patients by dieting and general hygienic measures, and by medicinal and orthopedic means. If the organs could be replaced and held in position, as shown by the x ray or other method, the symptoms should subside. As to supportive measures, the abdominal belt was of no value, Rose's adhesive plaster bandage was only a temporary aid, and the straight front corset was worn with difficulty by the thin virginal female; but the abdominal *pelote,* or truss, having two elastic bands with attachments for pressure against the lumbar spine, answered well in some cases. A corset, to be of benefit, should be adjusted with the patient on her back, with the shoulders depressed and hips elevated, while the lower abdomen was massaged toward the umbilicus. All other measures having proved inefficient, the patient had the choice of continuing in a state of discomfort with a prospect of increasing trouble, or of submitting to relief by surgery. In simple ptosis of the stomach and colon, Rovsing's method of gastroplication was apparently the most rational. He placed three parallel sutures through the anterior surface of the stomach wall, brought them through, and tied them over a glass plate outside the abdomen; thereby holding a broad surface of the stomach wall against a scarified surface of the parietal peritoneum. It was sometimes necessary also to shorten the gastrocolic ligament. Beyea shortened the lesser omentum by a series of pursestring sutures; but where there was a midline ptosis, this would support only the pylorus, leaving the rest of the stomach and the transverse colon unsupported. Coffey, in cases where it was practicable, employed the Beyea procedure in addition to his hammock operation, which supported the stomach and colon by suturing the great omentum to the anterior stomach wall transversely, midway between the ensiform cartilage and the umbilicus. For enlarging the upper abdominal cavity in virginal cases, to accommodate the replaced stomach and liver, Coffey split the rectus fascia on either side of the median line and left the recti bare of fascia for the greater part of their surface, while Rovsing made a longitudinal cuboidal section of the recti, turned them on themselves, and sutured them.

Dr. RUSSELL S. FOWLER said that about twenty per cent. of the human race, through error in development, was subject to narrowing of the upper abdomen and broadening of the lower abdomen resulting from ptosis of some or all of the abdominal contents. Ptosis of all the abdominal viscera (Glénard's disease) was not a surgical disease. The characteristic physical finding was ptosis of the left kidney, and as a rule such cases were not benefited by operation. Ptosis involving the ascending colon involved also the kidney to a certain extent. In these cases it was interesting to observe that if the kidney were fixed the symptoms from the ptosis of the colon would remain; in fact, where the symptoms seemed to be from the kidney alone other symptoms were added, due to angulation of the colon, after the fixation of the kidney. The colon should be suspended, as well as the kidney fixed, in order to effect a cure. Cæcum mobile, of which he had had a number of cases, could be cured by suspension of the caput and of the ascending colon. Gastrocoloptosis, or ptosis in the midline, if not relieved by medical treatment, could be successfully treated surgically in several different ways. In 1898, Duret sutured the lesser curvature of the stomach to the abdominal wall with good result. In the same year, Rovsing sutured the anterior stomach wall directly to the peritoneum of the abdominal wall, with many good results. Beyea shortened the gastrohepatic omentum, and Coffey sutured the great omentum to the abdominal wall, thus holding up the stomach and making a partition across the abdominal cavity. A great majority of these patients could be cured, or at least be made fairly comfortable, by a proper application of bandages and intelligent feeding to produce fattening. In 1901, Lane removed the greater part of the large intestine; more recently he had been doing implantation of the lower ileum into the sigmoid, thus short-circuiting the colon. As a matter of fact, the surgical indication in these lesions was not as yet well drawn. They should very slowly conclude to operate in a given case, particularly if the operation were of a resection character. So many operations were now performed for the relief of intestinal stasis in gastrointestinal cases without practically complete obstruction that it seemed possible the pendulum might swing too far in this direction, and many inadvisable operations might be done. The risk of

operations involving the resection of the large intestine was such that experienced operators undertook them with misgiving, and it was not uncommon for surgeons of prolonged experience to meet with disaster. Moreover, the alarming variations from the normal shown by the x ray in the twenty per cent. of persons developmentally faulty were such as to lead an inexperienced surgeon to attach undue value to the x ray findings. In the course of several thousand laparotomies for other diseases, he had observed a large number of cases of ptosis of the various parts of the colon and sigmoid. Operation had been done only on those patients having symptoms directly referable to misplacement; others had not presented any functional disturbance of the large intestine. He would emphasize the need of thorough study of each case before deciding to operate. The underlying principle of treatment was proper expansion of the upper abdomen. To effect a cure the upper part of the abdomen must be expanded, and the lower part contracted, and in many cases this could be accomplished by suitable bandaging, apparatus, diet, and exercise. There were certain cases of this type which presented more acute symptoms, in which supportive and mechanical treatment was of no avail; in these operation was distinctly indicated. The condition was to be prevented in childhood by proper feeding, hygiene, and gymnastic exercises. In the postoperative treatment, rest in the Trendelenburg posture for four weeks was of great importance.

Dr. H. BEECKMAN DELATOUR said that if they had radiograms of the existing condition, it by no means followed that they should operate. It was advisable to go slowly. In many instances a displaced kidney caused angulation of the intestine. If they simply paid attention to the intestine they would not relieve the condition; and this would be the case if their efforts were directed solely toward the restoration and fixation of the kidney. He believed the Rovsing operation preferable to any other. At first sight this might interfere with the functions of the stomach, but such was not the case. Personally, he had had experience with it in only four instances, and the results had been excellent. In one case fifteen months had elapsed since the operation. The Lane resection of the large intestine was favored by only a few surgeons, and even Lane had to a great extent abandoned it in favor of ileocolostomy, his "short-circuiting" operation. A procedure involving intestinal anastomosis required great care to avoid causing obstruction to the flow.

Letters to the Editors.

WHOLE RICE AS A TREATMENT FOR POLIOMYELITIS.

SCRANTON, PA. [illegible] 1914.

To the editors:

In your issue for February 7, 1914, I read a most comprehensive article on The Etiology of Oriental Beriberi, by Major Weston P. Chamberlain, M. D., of Plattsburg Barracks, N. Y., read before the Medical Society of Clinton County, N. Y., by permission of the surgeon general of the United States.

Major Chamberlain's experiments on the chicken were exhaustive and proved plainly that the excessive cleansing of rice to make a most pleasing ocular effect on the trade works a great detriment to the pure food qualifications of the article for a wholesome diet; and, with other food products made from cereals, should have a limit placed on them in preparing these cereals whereby they should not be denuded of *all* the necessary substances to the detriment of the human being, just for the sake of elegance to the eye. This holds good for wheat, rye, oats, corn, barley, and buckwheat, in all their different forms of food stuffs.

While I read Major Chamberlain's article it opened up a great line of thought to me. If, as has been proved, the leaving of the pericarp and aleurone layers on the rice cures or prevents neuritis; or, as he also states, the dusting of the powder containing the pericarp, will operate in the same way; or, again, as he states, an alcoholic extract of this powder, or an aqueous infusion, will operate in the same way, have we not found in this dust a substance peculiarly fitted for internal medication in cases of neuritis and its many branches? If these offals of the rice are so efficacious in relieving the conditions of beriberi, does this not open to our minds a *possible* cure for that most illusive of all neuritic diseases which is now causing so much laboratory research—poliomyelitis?

The literature on the treatment, by medication, of poliomyelitis is so scant that practically the general practitioner is without anything to give his suffering patient, to relieve directly the conditions that leave his patient a physical wreck and a burden to himself and his friends if he lives over the acute period of the disease. All the research along this line has been to isolate the true germ; but as far as internal medication is concerned, I have seen little on the therapy of this disease. In certain sections of this State we have had frequent epidemics of it in the last few years and with all my reading I have found nothing to check it. Perhaps Funk's vitamine is *not* it; but if the extract, infusion, or the dried powder could be used, in the first stages of onset where it would be followed step by step, it might prove the "great discovery" of the age in the cure of infantile paralysis, and I know would be the greatest that science has yet discovered. Ergot and belladonna will not do.

The general practitioner has not the facilities for this; but the hospitals, institutions for research, and universities have; and its value in beriberi having been proved, the powder is worthy of a trial in poliomyelitis. It surely cannot harm the sufferer in any way and perhaps it may do untold good. Personally, had I a case in its onset, I would not hesitate to try it, if I could obtain it.

I am taking up the space in your JOURNAL for the purpose of opening up suggestions and possibly experiment on this line by others, and would be more than pleased to hear some one on this line of therapy.

S. HERBERT VOORHEES, M. D.

Book Reviews.

[We publish full lists of book received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those which we think our readers are likely to be interested.]

Sanatoria for the Tuberculous. Including a description of many Existing Institutions, and of Sanatorium Treatment in Pulmonary Tuberculosis. By F. ROLLESTON WALTERS, M. D., M. R. C. P., Fellow of the Royal College of Surgeons, Joint Tuberculosis Officer to the Surrey County Council, Late Physician to the Mount Vernon Hospital for Consumption and Diseases of the Chest, and to the Crooksbury Sanatorium. Fourth Edition. Entirely Rewritten. London: George Allen & Co., Ltd., 1913. Pp. xiii-445. (Price, 12s. 6d.)

In this edition of an interesting volume on the subject of sanatoria for the tuberculous, are enumerated and partially described most of the existing sanatoria and special hospitals in the United States, Great Britain, in the British Colonies, and also those of Europe, Africa, and India. Three quarters of this 445 page book are devoted to the enumeration and descriptions of institutions, associations, and other antituberculosis agencies. With the constantly increasing number of [illegible] civilized countries, it is obviously difficult to bring such a volume up to date, yet the author might have done better

had he availed himself of more recent sources of information, at least for the United States. He speaks most kindly and enthusiastically of the work in the United States, but had he also used the *Supplement* of the Tuberculosis Directory of the National Association for the Study and Prevention of Tuberculosis, issued last year, instead of limiting himself to the information he had obtained up to 1911, our country would have made an even better showing, for in this supplement there have been listed 145 sanatoria, 55 clinics, 119 open air schools, and 611 anti-tuberculosis associations and committees.

The rest of this interesting volume is devoted to short chapters on climatology, on suitable sites for sanatoria, on construction, decoration, and furniture of such institutions, on the hygienic and dietetic treatment and results obtained, on rest and exercise, on the symptomatic treatment, and a short chapter on tuberculin therapy. Nothing is offered in these chapters that is not already known or practised by most sanatorium men, but all in all, the book is a valuable addition to our present day information on the hygienic and dietetic treatment in sanatoria and on sanatorium construction. Its most important function is to serve as a guide where to send patients in any part of the civilized world for whom sanatorium treatment is suitable. The size of the book compared with the previous editions (1899, 1901, and 1905) is inspiring, for it shows how much has been done during the last few years in the combat of the great white plague.

The Dietetic Treatment of Diabetes. By B. D. BASU, Major I. M. S. (Retired). Fourth Edition (Revised and Enlarged). Bahadurganj, Allahabad: The Panini Office Bhuvaneshvari Ashram, 1913. Pp. xvii-52.

This little work is interesting in a way possibly unsuspected by the author. Major Basu, prior to the studies of Lane, had decided that diabetes was due to intestinal stasis from the fermentation of protein-bearing foods, and his therapeutic recommendation is an exclusively vegetarian regimen. He believes, however, that he has found a sort of specific in cocoanut oil; but it is mainly as a nourishing food that he considers this product, and he lays no stress whatever upon its marked laxative properties, which, according to modern western views, are what make the oil useful in diabetes if, indeed, Major Basu's theory that stasis is the cause, is correct. It is superior to mineral oils, as it enters readily and palatably into many articles of food, and is especially valuable, according to the author, as a substitute for *ghee* or melted butter, which, it seems, is becoming increasingly difficult to obtain. The author's familiarity with an enormous population which lives on vegetables for religious reasons, lends a special interest to this book, which we commend to our friends as an unusual sort of medical treatise.

Theorie und Praxis der inneren Medizin. Ein Lehrbuch für Studierende und Aerzte. Von Dr. ERICH KINDBORG in Bonn. Dritter Band: Die Krankheiten der Nieren und der Harnwege; die Blutkrankheiten; die Erkrankungen der Nervensystems; die allgemeinen Infektionskrankheiten; die wichtigsten Vergiftungen. Mit 71 Abbildungen im Text und auf 4 Tafeln. Berlin: S. Karger, 1914. Pp. xii, 751.

In this, the third and concluding volume of Kindborg's practice, are considered the diseases of the kidneys and genitourinary tract, the various blood conditions, affections of the nerves, spinal cord, and brain, and the general infections. It is somewhat unusual to find in a work on general medicine full descriptions of the technic of cystoscopy. There is also appended a chapter on toxicology, dealing not only with mineral and vegetable poisons, but with food intoxications and drug addictions. There is an excellent section on the interpretation of blood examinations, and the practical methods of lumbar and cerebral puncture for diagnosis, the administration of salvarsan, and the serum treatment of epidemic cerebrospinal meningitis are adequately treated. That salvarsan is no exceptional or exclusive specific is sufficiently indicated by the fact that the best dermatologists now generally administer it in connection with mercury and the iodides. Kindborg believes salvarsan to be especially indicated where syphilis and tuberculosis are associated. As in the preceding volumes, the author emphasizes clinical features and shows a fondness for histology and laboratory methods. His interest in botony and pharmacology enliven and stamp with individuality his sections on the drug treatment of disease, and with a freedom which is unusual in this country he does not hesitate to commend such proprietary preparations as he has found useful in his practice. Doctor Kindborg's lively, and at times almost journalistic style imparts interest and novelty to his subject matter, and yet never detracts from the authority or soundness of his teaching.

Die wassermannsche Reaktion mit besonderer Berücksichtigung ihrer klinischen Verwertbarkeit. Von Dr. HARALD BOAS, Privatdozent an der Universität, etc. Mit einem Vorwort von Geh. med. rat Prof. A. WASSERMANN. Zweite, vermehrte und verbesserte Auflage. Berlin: S. Karger, 1914. Pp. 242.

Here is a volume that fully justifies its purpose. No greater praise could be given it. It includes the history; the various technics; the other maladies in which positive Wassermann reactions are obtained; the reaction in congenital and acquired syphilis; the influence of treatment upon the reaction; and a wonderfully sane chapter upon interpretation. The author believes that the Wassermann reaction should be treated as a symptom of syphilis. He states that in the early stages a positive reaction usually precedes the appearance of symptoms, but that a negative reaction does not justify us in desisting from treatment. He denies that repeated negative Wassermann reactions have as yet proved that the patient will not have tabes or paresis. He states that the absence of reaction in the late stages of syphilis has no special prognostic or therapeutic significance. The book closes with a bibliography of almost 2,000 contributions to this subject.

Etude clinique du Sérum anti-tuberculeux de Vallée. Par Le Docteur BOUREILLE, Ex-Interne de la Maison de Nanterre; Directeur du Preventorium anti-tuberculeux du Boulevard Garibaldi. Paris: Maloine, 1913. Pp. 51.

Vallée's serum is obtained from young and strong horses, immunized by intravenous injections of equine tubercle bacilli of low virulence, at intervals of three months, and then with virulent human bacilli in increasing doses, reaching at the end of three years doses of 200 milligrams. The author, who observed methodically a large number of tuberculous cases at the preventorium in Paris, studied in them the action of Vallée's serum. The monograph reviewed, which is very complete from the clinical point of view, forcibly shows the reactions caused by the serum and the results obtained. It contains, beside the usual clinical study, many particulars, observations, temperature charts, weights, etc., noted during two, three, or four years, before, during, and after the treatment.

While praising the remedy, which as the recorded results show, is often remarkably efficient for tuberculosis, the author believes that in the actual state of our knowledge, it is not advisable to give up the classical methods of treatment. Moreover, this serum, by bringing into the body the elements it needs to fight the poisons that exhaust it, affords a clear field for the beneficial action of the customary therapeutics. The observations related show the interesting fact that the serum becomes much more active under continued aeration, rest, tonics, revulsives, etc.

Interclinical Notes.

The *Dial* for February 16th gives a short account of the delightful Franklin Inn Club of Philadelphia, and its quaint colonial home, where are brought almost daily scholars, authors, men of distinction in various fields from all parts of the country, from England, Germany, South Africa, the ends of the earth. These fortunate guests, says the *Dial*, are likely to find no diminishment in the charm of surroundings by the election, on February 7th, of John Bach McMaster as president to succeed the late Dr. S. Weir Mitchell.

* * *

As a part of the bitter discussion of the relations between employers and employees in the western copper mines, a letter appears in the *Outlook* for February 21st from a mine surgeon, Dr. W. C. Gates, of Bucyrus, Ohio, who was for eight years in the copper district of Michigan. Doctor Gates makes a statement to the effect that if

he was to be forced back into manual labor, he would go underground in the Michigan copper district, because conditions of life are better and easier for the laborer there, and he has a far better chance to secure advancement than in any other place of which he—the doctor—has knowledge. The *Outlook* maintains that there will always be trouble as long as the relations in the mines are feudalistic and not democratic, no matter how comfortable the men may be made.

* * *

Elizabeth Washburn writes in the *Outlook* for February 14th on The Passing of the Opium Question, and states that the United States has accomplished the task that she undertook, i. e., the deplorable trade of 150 years has been brought to a close. We should like to know what the scores of thousands of Chinese who are thus supposed to have been abruptly deprived of their daily opium, are doing; when we see the suffering of an individual undergoing a cure of the habit, and note his grievous condition afterward, we are filled with wonder that the great Oriental multitude seems to have thrown away its pipes, as it were at the word of command.

* * *

The reports of the sudden passing of the opium habit in China remind us of the equally amazing story of the passing of prostitution in an Iowa city. A little legislation was all that was required; the brothels were vacated, the unfortunate women vanished into the adjoining States (did the men follow them?), crime ceased, drinking was abandoned, the marriage rate went up with a bound—or didn't it? We forget. At all events—believe the police—the results were such as to put to confusion all those cynical people who used to sneer at our national passion for new laws.

* * *

The successful bedside manner had never developed in Doctor Deming; he had never really tried to acquire it and so had no experience with the easy and frequent and corpulent fees of the popular physician. . . . He was an intimate of that group of bold creative scientists who have been gathered together at Rockefeller Institute. He was the author of that celebrated book, Our Immoral Modesty; he had a deep chested, solidly standing, vital figure. He lives in Chapter XVIII of The Unlighted Way, by Leroy Scott, in *Women's Stories* for March 1st.

Meetings of Local Medical Societies.

MONDAY, *March 2d.*—Clinical Society of New York Throat, Nose, and Lung Hospital; German Medical Society of the City of New York; Utica Medical Library Association; Niagara Falls Academy of Medicine; Brooklyn Hospital Club; Hornell Medical and Surgical Association; Clinical Society of the New York Polyclinic Medical School and Hospital.

TUESDAY, March 3d.—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Amsterdam City, N. Y., Medical Society; Lockport Academy of Medicine; Society of Alumni of Lebanon Hospital, New York; Syracuse Academy of Medicine; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh Medical Association; Oswego Academy of Medicine; Medical Association of Troy and Vicinity; Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Broome County Medical Society; Medical Society of the County of Yates, N. Y.; Medical Society of the County of Tioga, N. Y.

WEDNESDAY, *March 4th.*—New York Urological Society of Anesthetics; Brooklyn Society for Neurology; Society of Alumni of Bellevue Hospital; Harlem Medical Association, New York; Bronx Medical Association; Elmira Academy of Medicine; Psychiatrical Society of New York; Society of Alumni of St. John's Hospital, Brooklyn; Schenectady Academy of Medicine; Long Island Society of Anesthetics.

THURSDAY, *March 5th.*—New York Academy of Medicine (stated meeting); Brooklyn Surgical Society; Practitioners' Club, Buffalo; Geneva Medical Society; Glens Falls Medical and Surgical Society.

FRIDAY, *March 6th.*—New York Academy of Medicine (Section in Surgery); New Utrecht Medical Society; New York Microscopical Society; Gynecological Society, Brooklyn; Manhattan Dermatological Society; Practitioners' Society of New York; Corning Medical Association; Saratoga Springs Medical Society.

SATURDAY, *March 7th.*—Benjamin Rush Medical Society, New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending February 11, 1914:

Anderson, J. F., Surgeon. On request of the State Board of Health of Kentucky, directed to proceed to Richmond, Va., February 10, 1914, for conference with the Commissioner of Health, for the purpose of presenting an address before the Medical College of Virginia on Recent Advances in the Study of the Exanthemata. **Bahrenburg,** L. P. H., Surgeon. Directed to relieve Surgeon G. M. Guiteras, and assume charge of all work of the Service carried on at Galveston, Texas. **Banks,** C. E., Senior Surgeon. Granted four days' leave of absence from February 20, 1914. **Carmelia,** F. A., Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Galveston, Texas, and report to Surgeon L. P. H. Bahrenburg for duty; granted three days' leave en route to station. **deValin,** Hugh, Passed Assistant Surgeon. Directed to proceed to Philadelphia for inspection of unserviceable property in charge of Senior Surgeon Fairfax Irwin. **Gillespie,** J. M., Assistant Surgeon. Directed to proceed from San Francisco, Cal., to Washington, D. C., and report to the Director of the Hygienic Laboratory for duty. **Glennan,** A. H., Assistant Surgeon General. Granted nine days' leave of absence on account of sickness under paragraph 209, Service Regulations. **Guiteras,** G. M., Surgeon. Relieved from duty at Galveston, Texas, and directed to proceed to Key West, Fla., and assume charge of the Marine Hospital at that port; granted one month's leave of absence from date of relief at Galveston, Texas. **Kolb,** L., Passed Assistant Surgeon. Granted four days' leave of absence returning to station at Ellis Island, N. Y. **Manning,** H. M., Passed Assistant Surgeon. When relieved from duty in charge of the Marine Hospital at Key West, Fla., directed to proceed to the Charleston Quarantine Station and assume charge of the Service at that port. **Nydegger,** J. A., Surgeon. Leave of absence for one month from January 8, 1914, on account of sickness, amended to read, twenty-seven days' leave of absence from January 8, 1914, on account of sickness. **Wilson,** R. L., Surgeon. When relieved from duty in charge of the Charleston Quarantine Station by Passed Assistant Surgeon H. M. Manning, directed to proceed to Ellis Island, N. Y., for assignment to duty; granted twenty-one days' leave of absence when relieved by Passed Assistant Surgeon Manning.

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending February 18, 1914:

Cofer, L. E., Assistant Surgeon General. Directed to proceed to New York, N. Y., for the purpose of delivering an address before the Medical Society of the County of New York, at the New York Academy of Medicine on the subject of National Quarantine; also to visit the Marine Hospital, Stapleton, N. Y., to ascertain the necessity for additional attendants. **Cumming,** H. S., Surgeon. Directed to utilize the S. S. Bratton investigations of the pollution of navigable tidal waters of Maryland and Virginia, in so far as possible, for laboratory and investigation purposes; also to proceed overland, or detail assistants for like duty, from Washington to points on the Chesapeake Bay watershed to

make sanitary surveys and obtain needed laboratory supplies. **Frost,** W. H., Passed Assistant Surgeon. On request of the secretary of the State Board of Health of Indiana, detailed to attend the meeting of the Indiana Sanitary and Water Supply Association to be held in Indianapolis, Ind., February 26 and 27, 1914. **Goldberger,** Joseph, Surgeon. Directed to proceed to Savannah and Milledgeville, Ga., and Spartanburg, S. C., to inspect the operations of the Service in respect to pellagra investigations at those points. **McMullen,** John, Surgeon. On request of the secretary of the State Board of Health of Indiana, detailed to attend the meeting of the Indiana Sanitary and Water Supply Association to be held in Indianapolis, Ind., February 26 and 27, 1914. **Schereschewsky,** J. W., Surgeon. Detailed to attend the meeting of the New York State Ventilation Commission, to be held in New York city, February 17 and 18, 1914; also to visit the American Museum of Safety and investigate safety devices intended for protection of those engaged in different occupations. **Slaughter,** W. H., Assistant Surgeon. Directed to report to the commanding officer of the United States Revenue Cutter *Seneca* for duty in connection with the ice patrol in the North Atlantic Ocean. **White,** J. H., Surgeon. Granted five days' leave of absence from February 18, 1914. **Wilson,** R. L., Surgeon. At the request of the president of the Georgia State Industrial College, Savannah, Ga., detailed to attend the farmers' conference to be held at Savannah, Ga., February 18 and 19, 1914, for the purpose of delivering two lectures on tuberculosis. **Woodward,** R. M., Surgeon. Leave of absence for two months from January 19, 1914, on account of sickness, amended to read "two months' leave of absence from January 19, 1914."

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending February 21, 1914:

Bushnell, G. E., Colonel, and **Bruns,** E. H., Captain, Medical Corps. Ordered to proceed to Fort Bliss, Texas., when summoned by the president of the retiring board at that place, for the purpose of testifying before the board. **Clayton,** J. B., Major, Medical Corps. Order to inspect Sanitary Troops, Organized Militia of Oregon, revoked. **Dean,** E. A., Major, Medical Corps. Ordered to Presidio of San Francisco as witness before court martial. **Foucar,** Frederick H., First Lieutenant, Medical Corps. Relieved from duty at the Army and Navy General Hospital, Hot Springs, Ark., effective on expiration of present leave and will repair to Washington, D. C., for course of instruction at the Army Medical School in laboratory work, and on completion of this duty will proceed to San Francisco, Cal., and take transport sailing May 5, 1914, for Honolulu, H. T., and report to the commanding general of that department for assignment to duty. **Gibner,** H. C., Captain, Medical Corps. Designated to inspect Sanitary Troops, Oregon Militia. **Hereford,** John R., First Lieutenant, Medical Reserve Corps. Now at San Francisco, ordered to proceed to Fort Dade, Fla., for duty. **Hopwood,** L. L., Captain, Medical Corps. Ordered to Presidio of San Francisco as witness before court martial. **Tenney,** Elmer S., First Lieutenant, Medical Reserve Corps. Ordered to proceed to Fort Baker, Cal., for duty. **von Schrader,** A., First Lieutenant, Medical Reserve Corps. Leave of absence extended two months and seventeen days. **Wilson,** James S., Major, Medical Corps. Relieved from further duty at Fort Ethan Allen, Vermont, effective on completion of his duty at the Army Field Service and Correspondence School for Medical Officers, Fort Leavenworth, Kansas, and will proceed to Fort George Wright, Washington, for duty, relieving Major J. Edger, Jr., Medical Corps, who on being thus relieved will proceed to Fort Lawton, Washington, for duty.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending February 21, 1914:

Braisted, William C., Medical Inspector. Detached from duty as fleet surgeon of the Atlantic Fleet, and ordered to duty as chief of the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. **Mann,** W. L., Jr., Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the Asiatic Station, via Army Transport leaving San Francisco, Cal., March 5, 1914. **Stone,** E. P. Medical Inspector. Ordered to treatment at the Naval Hospital, New York. **Walker,** J. B., Assistant Surgeon. Commissioned an assistant surgeon in the Medical Reserve Corps, from January 23, 1914. **Wickersham,** W. W., Assistant Surgeon, Medical Reserve Corps. Ordered to Navy Yard, Brooklyn, N. Y.

Births, Marriages, and Deaths.

Married.

Allebach—Blanck.—In Green Lane, Pa., on Tuesday, February 3d, Dr. Newton G. Allebach, of Souderton, Pa., and Miss Lucilla Blanck. **Davis—Lloyd.**—In Camden, N. J., on Saturday, February 14th, Dr. Albert B. Davis and Miss Lea Lloyd. **Denniston—Malleson.**—In New York, on Saturday, January 24th, Dr. Frank Denniston, of Point Pleasant, N. J., and Miss Alice Malleson. **Woodruff—Ogden.**—In New London, Conn., on Saturday, February 7th, Dr. Thomas A. Woodruff, of Chicago, Ill., and Mrs. Carrie M. Ogden.

Died.

Apple.—In Philadelphia, on Sunday, February 15th, Dr. W. Edson Apple, aged thirty-six years. **Bertillon.**—In Paris, France, on Friday, February 13th, Dr. Alphonse Bertillon, aged sixty-one years. **Billingsley.**—In Ocala, Fla., on Thursday, February 5th, Dr. Joseph Henry Billingsley, aged eighty-three years. **Burns.**—In New York, on Thursday, February 19th, Dr. James J. Burns, aged thirty-three years. **Ennis.**—In Pattersonville, N. Y., on Sunday, February 15th Dr. Alexander Ennis, aged eighty-four years. **Evans.**—In Barry's Bay, Ont., on Wednesday, February 11th, Dr. John Humphrey Evans, aged fifty-two years. **Hill.**—In Blackmonton, Miss., on Sunday, February 8th, Dr. R. M. Hill. **Ireland.**—In Springview, Neb., on Sunday, February 8th, Dr. G. L. Ireland, aged forty-four years. **Laibe.**—In Chicago, Ill., on Sunday, February 8th, Dr. Francis J. Laibe, aged forty-eight years. **Lilley.**—In Silver City, N. M., on Wednesday, February 4th, Dr. J. S. Lilley, of Oakland, Cal., aged forty years. **Linklater.**—In Portland, Ore., on Sunday, February 8th, Dr. S. T. Linklater, of Hillsboro. **MacGillvary.**—In New York, on Monday, February 16th, Dr. S. H. MacGillvary, of Brooklyn, N. Y., aged forty-five years. **Markley.**—In Mohawk, N. Y., on Thursday, February 5th, Dr. S. E. Markley, aged sixty-eight years. **Marshall.**—In Lincoln Park, Tenn., on Sunday, February 8th, Dr. Nathan S. Marshall, aged eighty-two years. **McMichael.**—In Eau Claire, Pa., on Friday, February 6th, Dr. R. J. McMichael, aged sixty-three years. **Moon.**—In Lansdowne, Pa., on Friday, February 13th, Dr. Robert C. Moon, aged seventy years. **Park.**—In Buffalo, N. Y., on Sunday, February 15th, Dr. Roswell Park, aged sixty-two years. **Peach.**—In Elizabethtown, Pa., on Thursday, February 12th, Dr. William Peach, aged seventy-six years. **Richardson.**—In Indianapolis, Ind., on Monday, February 9th, Dr. Samuel C. Richardson, formerly of Terre Haute, Ind., aged ninety-three years. **Satterfield.**—In San Diego, Cal., on Monday, February 9th, Dr. L. D. Satterfield, of Nashville, Tenn., aged eighty-two years. **Schmidt.**—In Chicago, Ill., on Friday, February 13th, Dr. Albert H. Schmidt, aged fifty-four years. **Schöney.**—In Coney Island, N. Y., on Tuesday, February 17th, Dr. Lazarus Schöney, aged eighty-six years. **Smith.**—In Chaneysville, Pa., on Saturday, January 31st, Dr. J. Thornton Smith, aged sixty-two years. **Tompkins.**—In Jamaica Plain, Mass., on Saturday, February 14th, Dr. Albert H. Tompkins, aged seventy years. **Watson.**—In Aurora, Ill., on Thursday, February 12th, Dr. J. S. Watson. **Wooten.**—In Davidson, N. C., on Tuesday, February 10th, Dr. W. H. Wooten, aged forty-five years.

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Original Communications.

EROSION OF TISSUES BY ANEURYSMS.

BY ALLEN J. SMITH, M. D.,

Philadelphia,

Professor of Pathology, Medical Department, University of Pennsylvania

(From the McManes Laboratories of Pathology, University of Pennsylvania.)

In the course of many of the saccular aneurysms of arteriosclerotic origin, more frequently in case of the larger examples, as those of the aorta and its important branches, destruction of the neighboring tissues by the enlarging sac is a well known complicating phenomenon, usually spoken of under the name of "aneurysmal erosion." No fixed tissue of the body, parenchymatous or connective, the softest and most yielding, or the densest bone, can permanently withstand this influence of the aneurysm advancing eventually to rupture through some surface, into one of the body cavities, or into some particularly loose structure. There is, it is true, variation in the extent and rapidity of erosion when individual examples are examined, dependent in part upon the particular aneurysm, in part upon characteristics of the tissue under erosion, and in part upon other special features of the individual subject; but the general principles prevail that erosion is a feature to be expected in any of the type of aneurysms indicated, that when once established it is a factor in determining the direction of advancement of the sac and eventually the place of rupture, and that no tissue of the body is capable of indefinitely resisting the process and any will be eventually destroyed by it.

Among the earlier ideas advanced to explain the phenomenon was the supposition that the wall of the aneurysmal sac actively secreted some erosive or digesting fluid into the tissues about it, through the influence of which the destruction was accomplished (Eichhorst: *Handbuch der speciellen Pathologie und Therapie*, 1, p. 252, 1890), an idea which never obtained wide acceptance and long since neglected. Obviously there can be no such thing as actual secretion by the wall of any aneurysm, which neither contains elements conforming with any tissue of known secretory function other, of course, than the autolytic enzymes common to all tissues nor in such vital state that active function of any type can be suspected; but there actually is, in the writer's opinion, a grain of truth in the idea which will be developed in the course of this communication. A much more common belief as to the nature of the erosive process seen in these cases is that it is essentially a pressure atrophy, due either to the general pressure of the aneurysmal mass or to the pulsating pressure of the sac (the common illustration of the wearing away of rock by the drip of water being often cited as in simile in this latter connection). Comparatively little attention has been given to the matter in hand in recent years, title examination of current literature for the past ten years having failed to discover a single article dealing with this precise phase; so, too, an examination of a long list of the standard textbooks upon general and special pathology shows that their authors either ignore the question or vaguely attribute the erosion to the pressure factors just mentioned. Lazarus-Barlow (*Pathological Anatomy and Histology*, p. 301, 1902), Brooks (*General and Special Pathology*, p. 658, 1912), Bériél (*Eléments d'anatomie pathologique*, p. 241, 1910), with several others, however, more or less clearly recognize another factor which in combination with the pressure influences referred to is operative; namely, that of an accompanying inflammation in and about the wall of the aneurysm. It is to this inflammatory influence the writer wishes to direct particular attention, believing it to be the dominant factor in the process. At the same time a relative influence from the general constant pressure exerted by the aneurysmal tumor may be recognized; but the writer believes that without such coincident inflammation true erosion is impossible; and that whatever atrophy is actually attributable to the pressure, is secondary to the tissue changes induced by the inflammation and is at best only minor. To the intermittent pressure exerted by the pulsation of the sac he would assign no atrophying influence whatever. Atrophy as the result of pressure is the result only of continuous pressure. Intermittent pressure, mainly by determining through the alternation of compression and relaxation of the tissues a freer supply of arterial blood, rather induces a growth of the tissue thus influenced. This is well seen in the growth of a corn upon the external and superior surface of the little toe from the alternate pressure and release of pressure upon the toe by the shoe in ambulatory movements; in the growth of the shoulder exostoses in soldiers from the varying pressure of the musket; in the growth of the analogous rider's exostoses of the femur from the intermittent pressure of the thighs upon the saddle in riding.

That there exists an inflammatory process in association with erosion by an aneurysm might almost be assumed by any one reviewing his experience at the autopsy table, from the invariable adhesion of the eroding sac to the part in which erosion is manifest; and this is borne out thoroughly by the his-

tological appearances in such structures and in any part of the vessel wall which may persist in relation to the aneurysm. In the records of the Pathological Laboratory of the University of Pennsylvania, there are descriptions of over sixty aneurysms of the aorta, mainly examples met in our service in the autopsy room of Blockley Hospital in the past ten years (not representing the total number of the aortic aneurysms of the hospital, since the university physicians compose but one third of the annual hospital service). Of these aneurysms a considerable number cannot be included in analysis for the point in question, because of inadequate statements; but of thirty-nine in which the existence or the absence of adhesion and of erosion of the surrounding tissue are definitely taken up, there were but eight which were nonadherent and nonerosive; but six which were adherent but noneroding; and the remaining twenty-five were eroding the surrounding tissues and in every instance adherent to these structures. The nonadherent examples were all either small or merely cylindrical or fusiform dilatations of the aorta, a form of lesion in which the inflammatory and degenerative changes in the coats of the vessel may or may not be manifest, but in which as a more certain feature there is a thinning, notably of the muscularis, from the necessary stretching. If the writer is correct in his interpretation, the group showing adhesions but no definite erosion of the adherent tissues, represent merely an early phase of the ordinary erosive type or are examples in which the progress of the process has been arrested, at least for a time, by some such circumstance as the formation of a massive protective clot in the sac (the spurious "healing" of an aneurysm); and the absence of degenerative and absorptive features in the surrounding tissues is to be looked upon merely as evidence that the usual changes have not yet had sufficient time for their development.

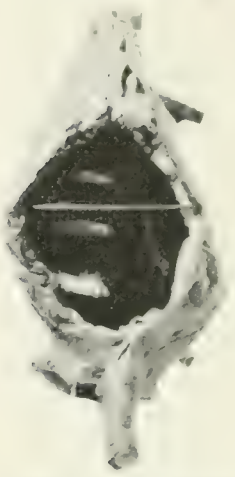


Fig. 1.—Aneurysmal erosion of vertebral column. A saccular aneurysm of the aorta adherent to and eroding the vertebral column; sac laid open anteriorly and showing in the depth destruction of the vertebral bodies. The less influenced intervertebral cartilaginous discs are seen projecting like transverse ledges into the cavity. (From a specimen in the Museum of Philadelphia General Hospital; negative by Dr. R. A. Keilty.)



Fig. 2.—Aneurysmal erosion into bronchus. A saccular aneurysm of aortic arch which has adhered to and perforated the wall of the trachea. Trachea laid open; aneurysm in background. A level of bifurcation of trachea, viewed from inner aspect, large aneurysmal perforation shown with a cartilaginous ring abridging the opening. (From a specimen in the Museum of the University of Pennsylvania; negative by Dr. R. A.

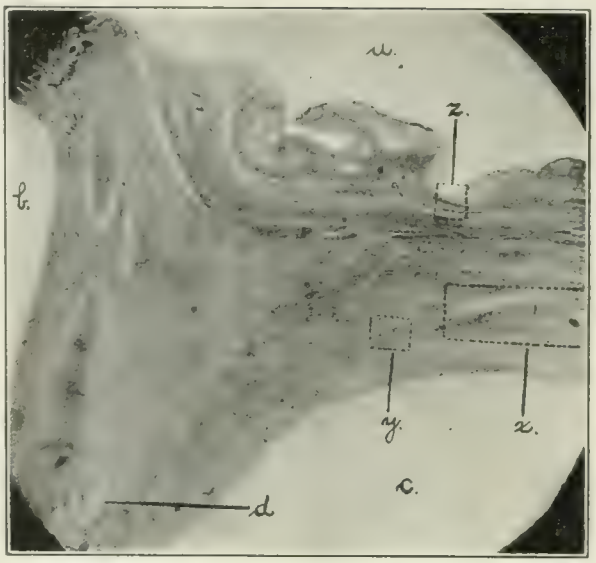


Fig. 3.—Aneurysmal adhesion to bronchus and esophagus: *a*, lumen of esophagus; *b*, lumen of bronchus; *c*, cavity of aneurysm; *x*, *y*, and *z*, sites of changes illustrated at higher magnification in Figs. 4, 5, and 6. Note the dense adhesion of all three walls to each other and loss of all lines of original separation; the proliferative inflammatory changes in the esophageal mucosa producing papillary outgrowths into the lumen, at *d* erosion at outer margin of cartilaginous plate, and the darker central portions of the two larger cartilaginous plates shown in illustration (calcification of cartilage). Erosion of this aneurysm took place into the trachea, bronchus, and esophagus, massive hemorrhage into the last being the immediate cause of death. The section was made from a level close to the site of rupture. (Low power photomicrograph: from specimen in the collection of the University of Pennsylvania.)

How the inflammation which leads to these adhesions and to the eventual destruction of the adherent structures is determined, may be properly held a matter for discussion, to which one or other or both of two factors at least may be ascribed. It has been amply shown that a syphilitic arteriosclerosis, often with the formation of minute gummata, most frequently is the basis for aneurysmal production, particularly of the saccular form; and the organisms of syphilis have been demonstrated in the walls of such lesions. It is in no wise improbable that the extension of the inflammation from the wall of the sac to the adja-

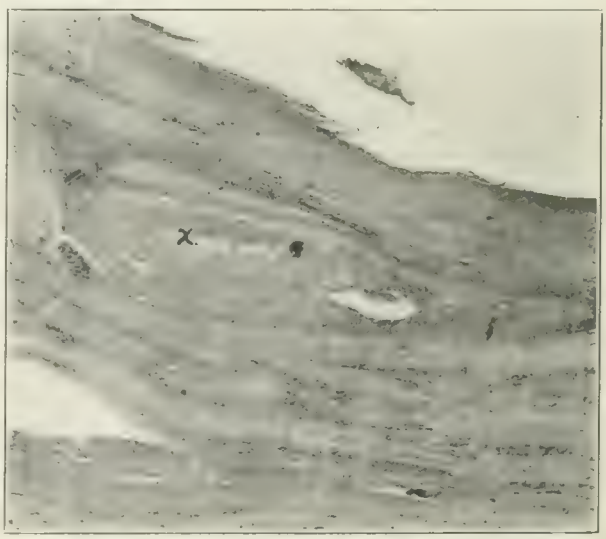


Fig. 4.—Minute cheesy area (x) in the wall of the same aneurysm shown in Fig. 3. (Higher magnification of area marked x in Fig. 3. Regarded by the writer as a minute gumma. Note the general sclerosis and cellular infiltration of the tissues.

cent tissue may be due to the gradual migration of the treponemata through the aneurysmal wall into these tissues, setting up in the latter the same changes as those previously determined in the wall of the vessel. As an example of such a change the photomicrograph shown in Fig. 4 is to the point, a minute cheesy gumma, situated in the adhesive fibrous tissue between an aneurysm of the aorta and the wall of the trachea. Whether such a mode of progression of the process from the aneurysm wall to the surrounding tissue is frequent or occasional, is an open question, which undoubtedly is of importance to the study of aneurysms; but aside from such influence the writer believes that there exists a mechanical factor cooperating in or capable alone of maintaining the progression of the inflammatory process in advance of the expanding wall of the sac. Aneurysms enlarge intermittently, at times when, with the growing weakness of the

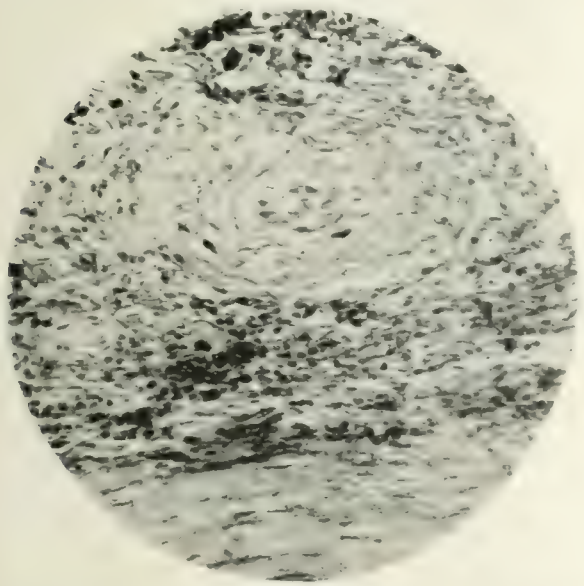


Fig. 5.—Sclerotic thickening of wall and obliteration of lumen by endothelial hyperplasia in an arteriole in wall of aneurysm shown in Fig. 3. (Higher magnification of site marked 3 in Fig. 3.)

wall from degeneration of the tissues, there come periods of special intravascular pressure from any cause. To this fact is to be referred the irregularly periodical occurrence or exaggeration of the pressure symptoms of the aneurysm. It may be reasonably held that with such periodical stretching (not to be confounded with mere pulsation) minute fibrillary tears take place, affecting not only degenerate or dead structures in the weakest part of the wall, but relatively integral parts as well. Thus, if in consequence of an original mesarteritis with sclerosis and degeneration, there is an expansion which has ruptured the area of primary degeneration in the mesarterium and intima, it is likely to tear here a few of the fibres of the adventitia as well. Such torn and thus necrosed elements may be looked upon as equivalent to foreign particles and capable of inducing inflammatory reaction to their own removal and repair, whence in time the sclerosis becomes established in the adventitia itself. Moreover, the formation of new tissue, as it involves the outer part of the adventitia, may readi-

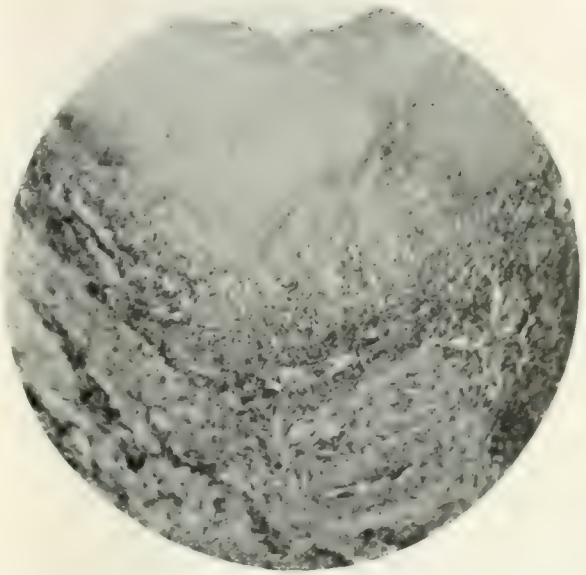
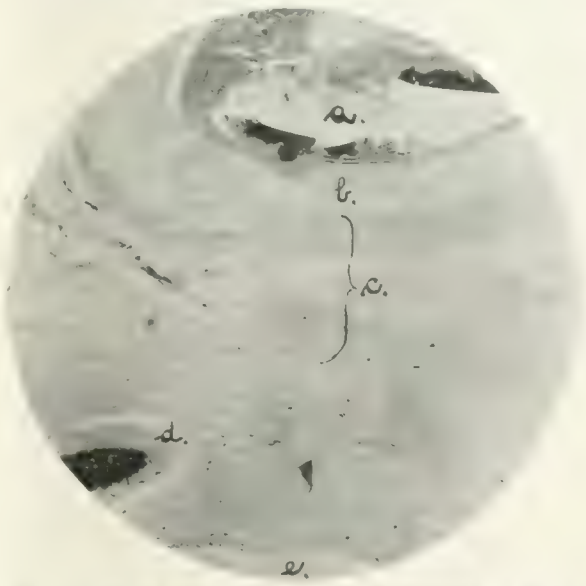
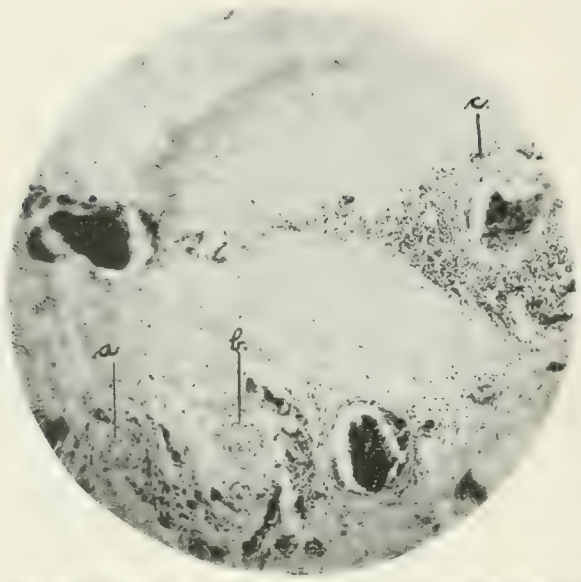


Fig. 6.—Epithelium and subepithelial tissue of esophageal mucosa from same section shown in Fig. 3. Higher magnification of site marked 2 in Fig. 3. Note the marked subepithelial excess of cells (of proliferative and exudative origin).

ly extend into contiguous tissues and thus lead to their adherence and fusion with the aneurysmal wall. This accomplished, the surrounding tissue must of necessity be subject to any subsequent mechanical effects of the periodical expansion of the sac; and because of the fibrillary injuries thus induced within them must themselves become the seat of the same low grade sclerosing inflammation. There may thus be presumed a necessary and constant peripheral and fibrosing inflammation about the enlarging sac, the invariability of which for every eroding aneurysm is a matter of easy proof to any observer. Examples are presented in ac-





[illegible] of wall of saccular aneurysm shown in Fig. 7, from a site near junction of layers *b* and *c* in latter illustration. Shows at *a* and *b* several small arterioles in course of sclerotic obliteration and at *c* an arteriole with perivascular cellular accumulation as an earlier stage of the same process. Several small venules passively distended with blood occur in the same field. The general tissue densely sclerotic, hyaline, and necrotic.

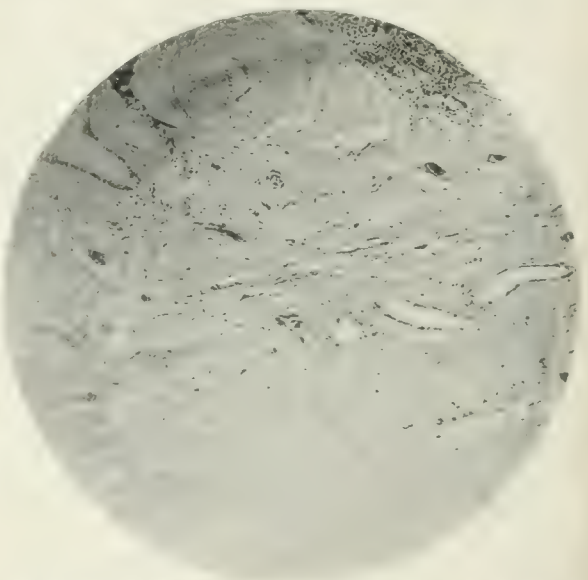
companying illustrations of the sclerosed condition of various structures about the sacs of aneurysms (Figs. 3 and 7).

Following these sclerotic changes and due at least in part to their effects, but possibly also attributable in part to the influence of such factors as syphilitic treponemata, there may be traced the regressive changes which properly constitute the erosive phase of the process. Whatever the effect of the gross pressure of the aneurysmal tumor, one must recognize as one of the combined minute changes of this stage a pressure atrophy involving various elements of the tissue from the presence and the shrinkage of the new fibrous tissue of the sclerosis. (Figs. 12 and 14.) But in addition it might be expected, and is well shown in some of the accompanying illustrations, that an especially marked sclerosis of the small vessels, particularly the arterioles, takes place, proceeding eventually to their obliteration (Figs. 5, 8, and 9); in consequence of which a diminished nutrition to the essential elements of the tissue results, doubtless a further potent factor in determining atrophy, degeneration, and necrosis of all the tissues concerned.

In the removal of the products of degeneration and necrosis (which as long as they remain should be recognized as persisting irritants causing continuation of a reactive inflammation about them, and to which must be referred the progressive weakening of support permitting further expansion of the sac) two possibilities exist, that of liquefaction and of particulate convection by phagocytes. That there are operative, here as anywhere else, substances of proteolytic power can scarcely be doubted when one notes the frequent presence of blood pigment granules, the remnants of blood which has been in the tissues from extravasation from the sac or which has stagnated in the vessels in connection with the vascular changes above referred to, or the presence of black pigment granules in and about cartilage in course of erosion believed to be of ochronotic nature, the more soluble parts of the cartilage having been liquefied and absorbed (Fig. 10). There is no reason to suppose that such enzymes are especially produced by the aneurysmal sac. They probably exist in these locations in no greater amounts than elsewhere in the body, the only special feature being that here there is devitalized material upon which they may act. They probably exist in the general tissue fluids; and perhaps are contributed to from leucocytes which have migrated into the district concerned and probably from some of the fixed cells therein. To this extent the writer would recognize a probable influence of some solvent or digestive fluid as an agency in the erosion, denying it the sense of a special substance or product of any secretory activity on the part of the aneurysmal wall.

In connection with the inflammation, which has been insisted upon as an essential preliminary and concomitant of erosion, there appears in the vicinity of the necrosed part requiring removal, more or less concentration of leucocytes and occasionally of other cells of phagocytic power, through whose agency the necrotic substance is carried away in particulate form. From the nature of the whole process, the low grade of the inflammation and the gradual occurrence of the necrosis, these are not found present in numbers comparable to the leucocytic infiltrations of acute inflammations. Here one often witnesses, however, the participation of the mononuclear leucocytes in phagocytosis, a phenomenon which has often been denied and which does not take place commonly in acute inflammations. Moreover, among cells bearing particles of necrotic substance one may meet, in addition to polynuclear and mononuclear leucocytes, larger mononuclear cells of endothelioid type and doubtless of endothelial origin. (Fig. 11.)

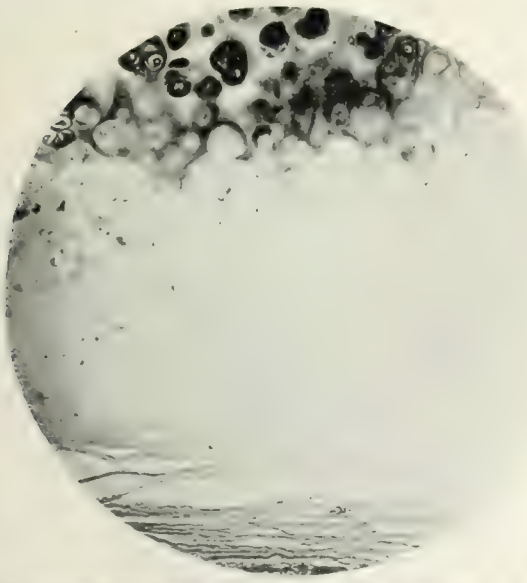
It is through a series of such changes that the whole process goes forward: an inflammation excited by specific organisms or by mechanical results



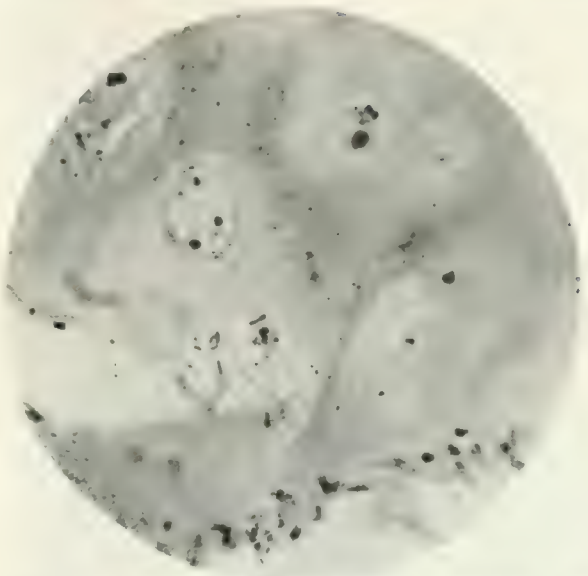
[illegible] Details of tissue from the outer part of [illegible], showing general sclerotic character of tissue and several sclerosed arterioles, but with little or no degeneration or necrosis of the tissue.

of stretching of the aneurysmal wall, leading to fixation of the wall to the neighboring tissue; erosion of these bordering tissues by atrophy due to pressure by the sclerosis thus induced and to reduction of blood supply by the establishment of obliterative sclerosis of the vessels, and by degeneration and necrosis induced by such failure of nutrition, with removal of the necrotic substance by phagocytosis or by absorption after liquefaction. With the loss of tissue in this wise there of necessity exists further weakening of the wall of the sac at the corresponding position, and further dilatation of the aneurysm ensues. Thus with the indefinite continuance of these steps the aneurysm progresses through the tissues as they are destroyed, and eventually, coming to some surface or other structure where further adhesion for support is impossible, ruptures through the remaining degenerate tissues which enclose the blood, and death occurs. Final rupture is likely to be sudden; but the approach to rupture is gradual, marked by periodical accessions. Approaching the skin after erosion through the sternum and ribs, an aneurysmal sac may be seen by the clinician to swell more and more, the skin to become the seat of points of hemorrhage and progressively thinner, the blood to leak slowly in drops to the surface and, finally, with a sudden access of intravascular pressure, called forth perhaps by some bodily movement or emotion, the final tear occurs and life is quickly ended.

Before closing this communication, there are certain points of interest concerning the general process and the changes in certain types of tissues under erosion, to which attention should be called. Thus, in entire conformity with the process above indicated, it might well be added that, as neighboring tissues come to be exposed in the gradual loss of the original coats of the artery, so that they in turn serve as the wall of the sac (change from "true" to "false aneurysm"), about the borders of the area of destruction the attending inflammation is constantly thickening and condensing the ad-



central (upper in illustration) part of plate; fibrillation of peripheral portion (changes common in connection with aneurysmal erosion.



cytes, some containing particles of pigment (ochronotic granules); similar cells within some of the lacunæ.

hesions which have formed. Some erosion is certainly going on in the older (inner) portions of these restraining lateral adhesive walls, but formation on the outside proceeds in full proportion to any destruction in the interior, and the limitation is complete. Where such changes involve bone, lips of new bone as exostoses are produced as margins to the eroding area. Herein lies, to the writer's mind, a real argument against the advancement of an opinion that the erosion is due solely to the inflammation, but not to the view that the inflammation is essential to it and is probably the main direct factor. Other forces undoubtedly take part in this question of the direction of erosion through the adherent tissue. It may well be that special localization of treponemata and their specific degenerative influences may determine the place of greatest weakness or that certain tissues are, under the conditions detailed, more easily necrosed than others; but in addition to any such features the matter of mechanical effect of impact of the current of blood against the inner lining of the aneurysm is important. This may in some instances be sufficient to break through the wall and dissect the less resistant tissues, but such an occurrence is rather an accident than the regular rule. Close attention to the eroded surface of a bone shows that it is not absolutely bared to the blood of the aneurysm; there really extends over the roughened surface a thin layer of fibrous tissue, and the erosion is not the effect of the mechanical wearing of the current. Current impact against a given spot in the lining of an aneurysm is likely to exaggerate and hasten in the corresponding tissues the sclerosing and necrosing changes above described, so that here, rather than about the sides or margins, the destruction is more apparent; while elsewhere the new formation of fibrous tissue (or, in special instances, of bone, cartilage, or other tissues) predominates.

Of the different tissues of the body, so far as the writer's observations extend, cartilage is the most resistant to erosion by aneurysms. In the

perforation of the trachea or a bronchus, the cartilage rings or plates may often be found relatively unchanged as bridges across an otherwise complete perforation; in the erosion of the vertebral column the bodies of the vertebræ may have been destroyed to the extent of exposure of the vertebral canal, with the relatively uninfluenced intervertebral discs projecting like ledges or shelves into the aneurysmal sac. (Figs. 1 and 2.) Cartilage as an avascular tissue is but slowly influenced by the impairment of circulation in the sclerosed zone about the aneurysm. It derives its nutrition from the transudate in the perichondrium, traversing the series of canaliculi into the lacunæ in which the chondroblasts lie; and very evidently may be maintained by a comparatively scant amount of such substance. Naturally the part which is most difficult of access for the nutritive substance, is in the central parts of the cartilage; the peripheral parts receiving the nutrient lymph most easily and in relatively unused



Fig. 12.—Interstitial myositis, with atrophy of muscle fibres, at periphery of an eroding aneurysm. (From specimen in collection of University of Pennsylvania.)

state. With the sclerosis of the perichondrium on one side of a cartilaginous disc or ring or plate, there probably remain other portions of the envelope relatively uninvolved, permitting continued nutrition; but, when affected, one finds first evidence in the form of atrophy of the cells and calcification of the hyaline matrix in the central part of the structure. (Fig. 10.) Later on, peripheral changes beneath the condensed fibrous perichondrium consisting of fibrillation of the matrix, widening of the canaliculi and lacunæ (from liquefaction, partly, and phagocytosis), lead into more and more loss of substance (Fig. 11), the fibrous tissue of the perichondrium slowly growing into the areas of loss and replacing the cartilage, but eventually being also destroyed. Occasionally localized ossification may be met at such sites as a mediate stage of change.

Bone destruction follows the same general steps, in that the periosteum is primarily sclerosed and its vessels are obliterated, with secondary atrophy and necrosis of the osteoblasts and the penetration of

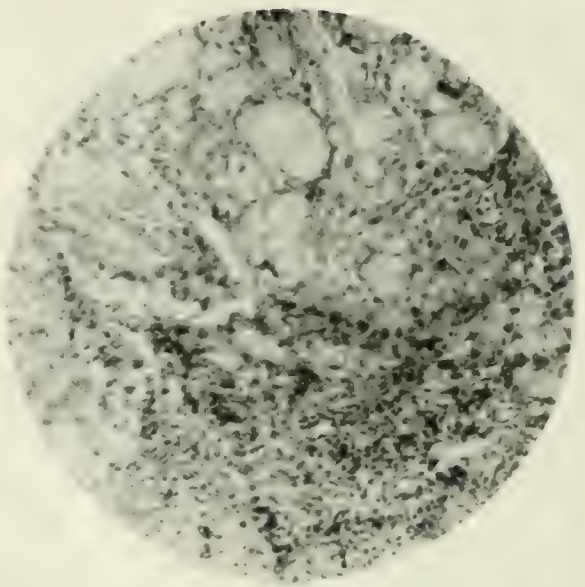


Fig. 13.—Early inflammatory cellular infiltration in a mucous gland of bronchus, from specimen shown in Fig. 3.

leucocytes and young connective tissue cells into the canals and lacunæ. With such invasion occur widening of the lacunæ and a progressive destruction of the necrosed osseous substance, with development of fibrous tissue in the widening spaces. The disappearance of the osseous matrix is probably only in part due to particulate removal by the phagocytic leucocytes; a more probable influence, unproved, is the actual solution of the calcareous material. What the actual solvent may be, is purely a matter of surmise; but the writer has fancied it may be of the nature of an acid, perhaps directly elaborated and given off by the phagocytes themselves in analogy to the production of hydrochloric acid by the cells of the gastric tubules. Whatever may be the case, it is at least true that visible phagocytic removal, here or in any ordinary bone destruction, is not met in such degree that this can

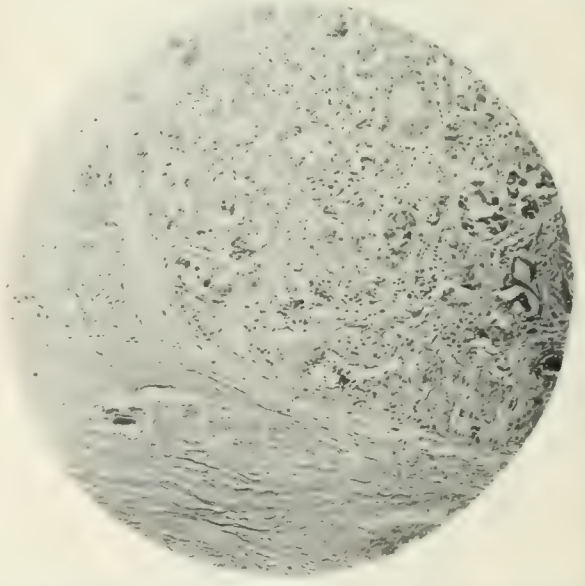


Fig. 14.—Interstitial and capsular sclerosis of mucous gland of [illegible] shown in Fig. 7, showing also atrophic and necrotic changes [illegible] epithelium.

be readily accepted as the sole method of disappearance.

Destruction and removal of the softer fixed tissues, as muscle (Fig. 12), glands (Figs. 13 and 14), areolar and adipose tissue, etc., take place in the lines already indicated and are followed with less difficulty. Reference to the accompanying illustrations and their legends is made for the general evidence without further comment, lest this communication, already too long, be further extended.

LINGUAL TUBERCULOSIS—PRIMARY?*

By William B. Trimble, M. D.,
New York,
Professor of Dermatology and Syphilology, New York University (University and Bellevue), Attending Physician, New York Skin and Cancer Hospital.

In the study of dermatology one can easily be led far afield; this fact proves its intimate relation with internal medicine. The specialty is like the ameba; it reaches out and engulfs things. It has almost taken possession of those mucous membrane lesions, which are in or near the various outlets of the body, and the interest grows apace. This is just and proper, as so many of the dermatoses exhibit themselves by outbreaks on the mucous membrane. It is with such lesions that this paper deals, and the two cases of tongue tuberculosis herein reported are not only rare, but bear some interesting features.

Some time ago, a man presented himself at the outpatient department of the New York Skin and Cancer Hospital with an ulcer on his tongue. Following a careful examination, it was thought by all the clinicians present that the ulcer was probably luetic; and after taking about five c. c. of blood for the complement fixation test, the hospital formula for mercury and potassium iodide was given to him. The case fell to my care, and the following notes were made:

Case I. Man, aged thirty-seven years, born in the United States. *Family history:* Father living and healthy at seventy years. Mother died at twenty-nine from "blood poisoning"; had two brothers, both of whom are dead; one died in infancy; the other was drowned at sixteen. *Previous history:* Patient never had a serious illness except present condition; venereal history absolutely negative.

Present state: Man of medium height, weight about 140 pounds. Somewhat pale, but well nourished; body free from eruption; no scars nor evidence of former disease. On the right side of the tongue, an ulcer about one inch long and three fourths of an inch wide; the long diameter parallel with the long axis of the tongue; the anterior border about one eighth of an inch from the tip; the lesion rested on the free border and underneath the organ, the dorsum being free. The edges were somewhat irregular, sloping, and not undermined; the base was grayish yellow and flecked here and there with punctate, whitish dots. The ulceration was deeper in some places than in others, but might be termed superficial; the patient said, he bit his tongue, and from then to the present time it had slowly but steadily grown larger. The pain was very slight except during meals, when it was uncomfortable.

At this writing the case has been under observation about a year, during which time the ulceration has made its way in a narrow bandlike manner just below the tip to the other side; there it has spread out, producing a similar condition to that on the right side. All this can be seen in the accompanying illustration (Fig. 1). A part of the frenum has also been destroyed, the lower part still remaining.

From the beginning an element of doubt existed in my mind as to the syphilitic diagnosis. This doubt was fostered by the clinical appearance after very careful observation; little attention was paid to his previous history, although the patient emphatically denied anything of a venereal nature. We know that syphilis is a great imitator; broadly speaking, it may be said to manifest itself on the tongue in three varieties; the early lesions which are the well known grayish or yellowish mucous patches; the late, which are generally in the form of gummatous degenerations with much loss of tissue; and the so called smooth atrophy. The lesion in question did not conform to any of these varieties. The superficial character of the ulceration, the sloping edges not undermined, the minute white or yellowish dots scattered over the surface, spoke against lues from a clinical standpoint.



Fig. 1, Case I. Tuberculosis of the tongue.

The Wassermann test was reported doubtful; the inhibition of hemolysis was not complete, and it could not with certainty be called either positive or negative. Former treatment of the case may have

*From the dermatological division of the New York Skin and Cancer Hospital. Read before the Thirty-seventh Annual Meeting of the American Dermatological Association, Washington, D. C., May 6 to 8, 1913.

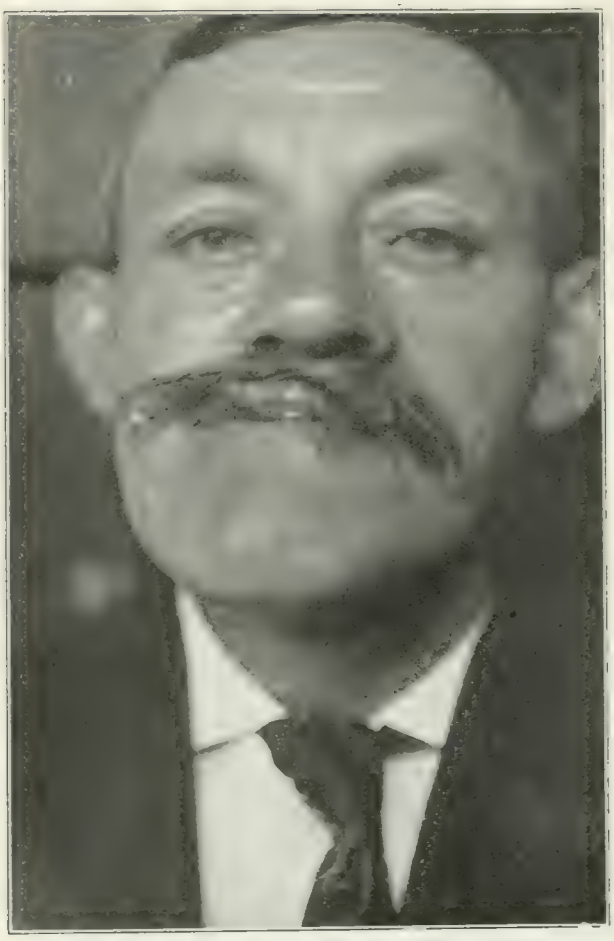


Fig. 2. Case II.—Tuberculous ulcer of the tongue.

accounted for this obscure reaction; however, the result did not exclude syphilis, and neither did it absolutely prove it. The urine examination disclosed nothing abnormal.

At the next interview the examination was pushed farther. The chest revealed some few indefinite rales and a diffuse, slight dullness on the left side; otherwise it was normal. This dullness is sometimes found in luetic individuals, so the case was still obscure. The Moro tuberculin inunction test was then tried, with a negative result; it was afterward discovered that the tuberculin ointment used was old; whether this made any difference is questionable.

The next step was a biopsy; with the cutaneous punch a small piece was removed for microscopical examination, and the laboratory reported the tissue to be tuberculous. This pathological report was not accepted as final, as it is well known that tuberculosis and syphilis under certain conditions greatly resemble each other microscopically, and it is impossible to separate them; the infiltration is supposed to be focal in the former disease and diffuse in the latter; the bloodvessel changes are at times characteristic in lues, but they are both granulomas, both exhibit giant cells, and in many instances they cannot be distinguished one from the other pathologically.

The pathological examination, however, was of great value, since it ruled cancer out of the diagnosis. The histopathological changes were as follows: The section included epithelium, submucosa, and muscle. The epithelium was almost entirely ulcerated, the remaining portion being very much thinned. The stratum corneum was lacking, and the rete mucosa consisted of six to ten rows of cells. The basal layer was moderately infiltrated with small round cells. There could be seen throughout the entire submucosa and extending down through the muscularis an enormous number of typical tubercles, separated here and there by extensive hemorrhage. There was also a diffuse infiltration of small round cells through the whole section.

In practically every tubercle there were central giant cells, sometimes three or four in number; these were in turn surrounded by epithelioid cells, with the usual peripheral layer of small round cells. A mild plasma cell infiltration also occurred in the neighborhood of the tubercles. The centres of many of the tubercles were undergoing caseation necrosis, and the vessels all through the specimen were distinctly dilated.

The muscularis showed hyaline degeneration and was broken up and fragmented by the invasion of the tubercles. In places the round cell infiltration could be seen between the muscle bundles. The microscopical findings pointed very clearly to tuberculosis.

In due time a search was made for the bacilli of tuberculosis in the sputum of the patient; the result was negative. The sputum examination was repeated every week for four or five weeks, each time with the same negative result.

The ulcer was then curetted along one of the borders where the disease seemed active, and smears were made from the scrapings; thirty or forty slides were examined, but the bacilli could not be demonstrated. At all times during this lengthy examination of a month, the patient continued to take the antisyphilitic treatment in gradually increasing doses.

It was increased in strength, until the amount

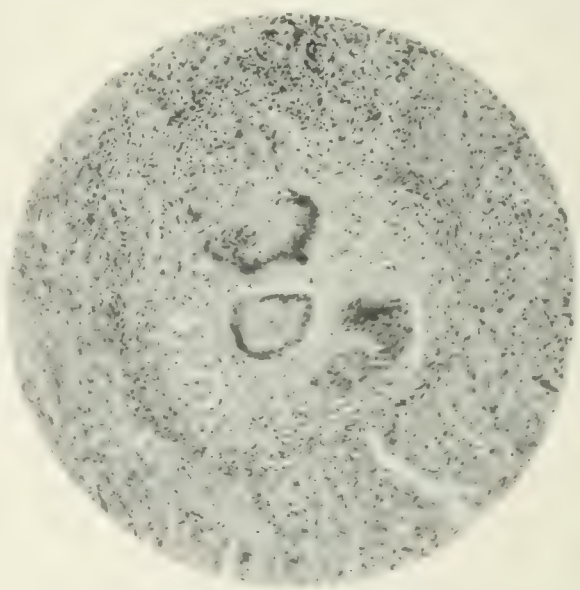


Fig. [illegible]

taken three times daily represented mercury bichloride, grain one tenth, and potassium iodide, twenty grains. After three months of mouth administration the treatment was changed to intramuscular injections. The salicylate of mercury was given; at first in doses of one and a half grain, later increased to two grains every fifth day, the iodide of potassium solution being continued in drop doses.

This plan was followed about two months, until the man began to show signs of salivation. The therapeutic test was then considered complete, and as there was no beneficial change in condition, syphilis was practically ruled out. Tuberculosis was then considered the correct diagnosis, but still not absolutely proved.

The last step consisted in removing another small section for guineapig inoculation; this material was injected subcutaneously into the right inguinal region of the pig, and after a lapse of more than two months, the animal was examined post mortem and tuberculosis was discovered; the inguinal and iliac nodes were enlarged and caseous; both lungs contained small tubercles, the spleen was also enlarged and filled with tubercles. The diagnosis of tuberculosis was then conclusive.

While the study of the case was in progress, another patient with a similar condition came under observation. The second case was referred to me by Dr. J. E. Messenger. Briefly, his history follows:

Case II. Man, aged forty-four years, born in United States; family and past history threw no light on the case; venereal disease absolutely denied.

Present state: An ulcer existed on the free border of the left side of the tongue, three quarters by one half inch, its anterior edge about one half an inch back from the tip. Duration was six months.

At that time he noticed a small bleb on the tongue which ruptured and refused to heal; this gradually increased in size to the present dimensions. The man had also marked laryngitis, his voice being very hoarse; the duration of this was four months. Other than this, his physical condition was very good. There were no clinical evidences of lung tuberculosis. The ulcer was oval in outline, superficial, and the base covered with a yellowish film; two or three of the small whitish dots were apparent, and several of the minute tongue papillæ could be seen peeping through the thin film, showing up brilliantly red about the size of pin points.

The border was sharply defined and not undermined. There was no induration. Mercury and the iodides in large doses had been given to him for several weeks without effect; for this reason it was thought useless to do a Wassermann test.

The treatment was changed to the injection plan, a soluble salt of mercury being used in this instance. The succinimide was chosen, so as to fit in with the suggestion of Wright, that this salt is beneficial in tuberculosis, and at the same time to carry on the therapeutic test. It was a failure from both standpoints. While the treatment was in progress, an examination of the sputum revealed tubercle bacilli. Death intervened before the study could be extended; the patient began to lose strength very rapidly, his laryngeal lesion became worse, his voice dropping to a whisper, and death followed quickly.

My reasons for considering the lesions primary were in the first case: 1. The failure to demonstrate the bacilli in the sputum after repeated trials. 2. The absence of clinical evidence after careful chest examination. 3. The absence of subjective symptoms of the disease. 4. The fact that the tongue ulcer preceded any lung affection for more than a year. 5. The negative tuberculin test, possibly meaning that the bacilli were deeply localized to the lesion. In the second case: 1. The fact that the tongue lesion preceded the laryngitis by more than two months. 2. That clinical evidence of lung tuberculosis was absent up to the time of his death. 3. The absence of subjective symptoms.

I think the original bleb in Case II was caused by slight trauma, which made a suitable soil for development for the germ. The larynx became secondarily affected. The bacilli found in the sputum came from the larynx.

It would be difficult to prove beyond the shadow of a doubt that the two lesions were primary ulcers, since neither case came to autopsy; but even though they had both been brought to autopsy, and tubercles found in the lungs and other organs, it would not be absolute proof that the disease was not primary on the tongue. It would be natural to think that the lungs were affected before death ensued.

So far as can be ascertained, there are extremely few cases of primary tongue tuberculosis on record. In Buttlin and Spencer's work on diseases of the tongue, an indefinite reference is made to Nedopil as having had four cases; but on looking up these cases it was found that only one could be considered primary; one patient had phthisis when first seen, and the examination was by no means complete in the other two. The only other record that could be found was a case of W. Fairlie Clark, reported in the *Transactions of the London Pathological Society*, in 1876.

The literature on the subject reveals very diversified opinions, as to both the subjective and objective symptoms. One writer states that the adjacent glands are enlarged in about fifty per cent. of cases; another says, the absence of adenopathy is one of the diagnostic points. The absence of induration is said by one to be characteristic, and another tells of cases with marked induration.

The main features pointed out, which are common to the majority of cases, and in which my experience coincides, are the following: These lingual ulcers are more common in men than women; they usually occur in middle life, though no age is exempt (no cases in children have been reported); the anterior half of the tongue is the part affected, generally near the tip; they may begin as a bleb, a fissure, or a nodule; the condition is usually fatal in from six months to two and a half years.

In summing up the objective observations made in my two cases, which find corroboration in the reports of many others, it may be said that tuberculous ulcers of the tongue have the following diagnostic points: They usually affect the free border near the tip; the dorsum is generally free; they are, as a rule, superficial; the base is generally a dirty yellow, dotted here and there with minute whitish specks, which probably represent small areas of caseation necrosis; the ulcer may be oval or gyrate, but the borders are generally sharply defined against the healthy tissue, sloping, and not un-

dermined; the lesions are not indurated and the neighboring glands are very slightly affected.

CONCLUSIONS.

1. The diagnosis is extremely difficult.

2. It is almost imposible to demonstrate the bacilli in the ulcer.

3. Although lues and cancer furnish the majority of ulcerations of the tongue and mouth, they are by no means the only cause.

4. In any case of tongue ulceration, tuberculosis must be reckoned with as a factor.

5. The histopathological examination alone is practically useless as a means of diagnosis between syphilis and tuberculosis, but it is of great aid in excluding cancer.

The majority of tuberculous ulcers of the tongue are, in all likelihood, secondary; it is easy to prove that an ulcer is secondary, but to prove that it is primary is quite another matter.

Before closing, I desire to express my sincere thanks to Dr. Egbert Le Fevre for a very careful physical examination of patient No. I and also to Dr. W. C. Thro for great aid in the inoculation experiments.

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24 East Forty-eighth Street.

SOAP AND WATER AND OPTICIANS.*

By Charles H. May, M. D.,
New York.

The brief remarks which I desire to make, which might be referred to as a "note" rather than a formal communication, are intended to call attention to the fact that many opticians are lax regarding the cleanliness of their hands. A certain number of patients have complained and felt uncomfortable on account of the dirty condition of the hands of some opticians, and have asked whether it were not possible to convey infection through the fingers in the fitting and adjusting of spectacles and eyeglasses.

Though the transmission of conjunctival disease by infection in this manner is probably not of frequent occurrence, it must be admitted that it is easily possible; one can readily imagine a route of infection from the eye of one patient to his lenses, to the fingers of the optician, and thence to the frames, lenses, and eyes of a second patient.

Investigation showed that in none of the principal optical establishments of this city were any precautions taken to prevent infection of this sort; there were no facilities for washing the hands in the store proper; washbasins existed only in the basement or cellar. Under such circumstances it was natural to suppose that the optician rarely washed his hands during his work and perhaps never did so in the course of the day.

It is not my desire to accuse the opticians in general of uncleanliness; on the contrary, I think many of them are neat and clean individuals. I believe that the absence of washbasins in their establishments is due to the fact that such a necessity was not thought of.

It is certainly not too much to ask that, in the interest of general cleanliness and the prevention of any possible danger of infection, a washbasin with running water and liquid soap, and a supply of towels to be used once only, be part of the equipment of the store, in plain view of the customer, and that an optician be expected to wash his hands as soon as he has finished fitting a patient, before he commences similar work upon another. Such fixtures are furnished in an attractive form, especially when made of glass and nickel, do not occupy much space, and add to rather than detract from the general good appearance of an establishment.

Incidentally I would say that the towel or piece of chamois which does continuous or lengthy duty for wiping lenses ought to be discarded, and in its place a separate piece of gauze or bibulous paper such as is found in the form of paper napkins, should be used for each pair of glasses and then discarded. Many opticians now employ such materials for wiping lenses.

Though I have mentioned the desirability of installing washbasins close to the fitting table to quite a number of opticians, the suggestion has not been acted upon except in two instances. My object in calling attention to this defect in many otherwise well equipped optical establishments is to enlist the interest of ophthalmologists in general in the demand for this reform; if the attention of opticians were persistently called to its desirability, there is little probability that the present absence of such aids to cleanliness would continue.

698 Madison Avenue.

*Read at the meeting of the ophthalmological section of the New York Academy of Medicine, February 1, 1901.

LOW BLOOD PRESSURE.*

Practical Points in Its Interpretation and Management.

By Edward E. Cornwall, M. D.,
New York,
Attending Physician, William Sloane and Norwegian Hospitals; Consulting Physician, Bethany Deaconesses' Hospital.

Low blood pressure, considered generally, is less definite in its pathological significance than high blood pressure. The latter, if pronounced and persistent, in a large proportion of cases means chronic nephritis, sclerosis of the aorta, or arterial sclerosis

*Read at the annual meeting of the Associated Physicians of Long Island, January 31, 1901.

or spasm; and furthermore, long continued high pressure from any cause can itself bring about, or assist in bringing about, pathological changes in the cardiovascular apparatus that tend to maintain the abnormal pressure; which is not the case with low pressure to nearly the same extent. Low blood pressure, although it frequently points to myocardial degeneration, more often signifies vasomotor relaxation or paralysis due to toxemias or nervous and reflex conditions.

What do we mean by low blood pressure? The variations in blood pressure in different individuals are so great, found both in apparent health and in conditions of compensation of the circulation necessitated by disease, that it is impossible to draw rigid lines and say that pressure below those lines is abnormally low; only a general statement can be made, which must be subject to exceptions. The following may be such a general statement: For a young adult a systolic pressure of 100 mm. Hg. may be low; for a person of middleage, one of 110 may be low; for an elderly person, one of 120 may be low; for a person with sclerosis or spasm of arteries supplying a vital region, one of 140 may be low; for a person with advanced interstitial nephritis, one of 180 may be low.

The records of blood pressure mentioned are systolic records, and the systolic record is the one which has generally been taken as the measure of the blood pressure; but if our observations are confined to that record alone, their clinical value will be comparatively small, and we shall frequently find the inferences drawn from them contradicted by other evidence. From the viewpoint of circulatory efficiency, as well as from the pathological viewpoint, the diastolic pressure is fully as important as the systolic. The measure of circulatory efficiency is the quantity of blood passing through the tissues in a given time, and that depends on a number of factors, chief of which are the quantity and quality of the blood delivered to the heart; the force and frequency of the ventricular contractions; the elasticity of the arteries; and the amount of the peripheral resistance. An exact estimate of the combined, coordinated action of these factors is impossible, but a very useful, though only partial index to the degree of efficiency of the circulation is afforded by the systolic and diastolic records considered together in their numerical relations, that is, the difference between them and their place in in the pressure scale.

The difference between the systolic and diastolic pressures tells us the fall in the circulation between the heart and the arterioles, and is analogous to what is called a "head of water" in hydrostatics. This fall is the pulse pressure. The significance of the pulse pressure as an index to the circulation is conditioned by its place in the pressure scale. A given pulse pressure in one part of the pressure scale may not have the same value as a factor in the circulation as the same pulse pressure placed in another part of the scale. For example, a pulse pressure of 40 mm. Hg. produced by a systolic pressure of 200 and a diastolic pressure of 160, will not naturally be attended with as efficient a circulation as the same pulse pressure when produced by a systolic pressure of 120 and a diastolic pressure of 80. A theoretical conclusion, which receives practical support, is: That there is a particular place in the pressure scale for each individual, and each particular condition where a given pulse pressure, other things being equal, will produce the fullest circulation, and one which at the same time is attended with the greatest circulatory flexibility and reserve power; and that pulse pressures placed above or below this ideal place in the pressure scale, in order to produce an adequate circulation, must ordinarily increase in magnitude, that is, take on an overload; and that such an overload means more or less diminution in the flexibility of the circulation and in the reserve power of the heart. If the diastolic pressure fails to fall in correspondence with a falling systolic pressure, and thereby permits the pulse pressure to become unduly small, clinical symptoms of circulatory insufficiency may appear. For example, if the systolic pressure falls to 100 and the diastolic to 60, there may be an adequate circulation provided the reserve power of the heart is not too largely drawn upon; but if the diastolic pressure falls to only 80, while the systolic pressure is 100, there may be symptoms of circulatory insufficiency; and if the diastolic pressure falls so low relatively, that the pulse pressure takes on a large overload, such symptoms also may appear.

Movements of the diastolic pressure to any considerable distance from its normal place in either direction, regularly cause the pulse pressure to take on an overload, if the circulatory balance, that is, an adequate circulation, is to be preserved. In conditions which considerably raise the diastolic pressure, such as chronic nephritis and arteriosclerosis, the overload may be so great that the pulse pressure exceeds 100; and in conditions of myocardial weakness or irritability or vasomotor dilatation with insufficient filling of the bloodvessels, there may be necessitated an abnormally large pulse pressure: and in simple overaction of the heart the same thing may happen.

In connection with overload of the pulse pressure, the question, what is the normal pulse pressure in conditions of health, naturally comes up. An approximate statement only is possible. In the writer's experience, the pulse pressure range, in conditions of seeming health and in the absence of circulatory strain, has been found to be between 30 and 45; and in his opinion, a pulse pressure as low as 20 is apt to be pathological, and one as high as 60 is also apt to be pathological.

In connection with this subject, it is interesting to note that certain drugs and other agents which lower the blood pressure, may improve the circulation by lowering the diastolic pressure more than they do the systolic, thereby increasing the pulse pressure or, by lowering an excessively high systolic pressure, thereby relieve what may be an unnecessary overload. In the estimation of the systolic pressure, the method by ausculation of the artery is more accurate and not less convenient than the method by palpation; and in the estimation of the diastolic pressure, the superiority of the ausculatory method over the others is even greater.

With these few general remarks on the subject of low blood pressure, the writer asks atten-

tion to some observations which he has made on patients with low pressure, and to a brief discussion of some practical points in the diagnosis and treatment of conditions in which that symptom appears.

In conditions of myocardial degeneration, both acute and chronic, the systolic pressure is often low and the diastolic pressure also, if no conditions exist which naturally raise the diastolic pressure. In cases of uncomplicated myocardial degeneration, an extra demand on the circulation may increase the pulse pressure disproportionately, and the failure of the systolic pressure to rise sufficiently to enable the pulse pressure to assume the requisite overload, may be a measure of the extent of the myocardial degeneration. In cases of myocardial degeneration accompanied by arteriosclerosis or nephritis, which naturally raise the diastolic pressure, there is regularly an increase of the systolic pressure and an overload in the pulse pressure so long as the reserve power of the heart holds out; but when that reserve power, already encroached on by the myocardial degeneration, is no longer sufficient to support the overload, then the circulation fails with the falling systolic pressure, which is apt to fall more than the diastolic. In cases of myocardial degeneration coexisting with conditions that require a compensatory high pressure, the appearance of low pressure is a bad prognostic.

Case I. A physician, aged fifty years, who had previously enjoyed good health and who showed no signs of nephritis, but did show signs of myocarditis and arteriosclerosis, began to manifest mild symptoms of circulatory insufficiency. His blood pressure was 100 systolic and 80 diastolic. Nitroglycerin, grain 1/200, placed under his tongue, in a few minutes raised his systolic pressure to 105 and lowered his diastolic pressure to 75, thus enlarging his pulse pressure by 10 mm. Some restriction of activity, a carefully arranged diet, and moderate heart stimulation were prescribed, and his systolic pressure rose to 115, while his diastolic pressure remained about 80, thus giving him a pulse pressure of 35. He responded as follows to an exercise test: At rest, pulse rate, 76; systolic pressure, 115; diastolic pressure, 80. After running about a room briskly for thirty seconds, pulse rate, 80; systolic pressure, 125; diastolic pressure, 75. Two minutes later, pulse rate, 80; systolic pressure, 100; diastolic pressure, 75. Five and eight minutes later, the same records as those last mentioned. Thirteen minutes later, pulse rate, 72; systolic pressure, 115; diastolic pressure, 80.

It has been denied that tests of the functional power of the heart based on observations of the blood pressure alone, have any value. It is true indeed that it is impossible to prevent many factors which regularly modify blood pressure from more or less obscuring such a test. But it is a not unreasonable supposition that some indication of the state of myocardial efficiency may be derived from study of the blood pressure in its three phases, viz., systolic, diastolic, and pulse pressure, in connection with the pulse rate; using a standard exercise, and comparing the findings of both blood pressure and pulse rate with the findings in healthy subjects; especially noting the times required for the various phases of the blood pressure and the pulse rate to return to their previous state.

Case II. A merchant, aged sixty years, with an apparently uncomplicated chronic myocarditis, was attending to his business, and feeling well with a blood pressure of 100 systolic and 55 diastolic. In this case intestinal toxemia may have been an element in the causation of the low pressure, because, after being put on a nonputrefactive diet, his pressure rose to 120 systolic and 85 diastolic.

Case III. A physician, aged fifty-five years, who suffered for sixteen years from chronic nephritis, and aortic incompetence, showed a systolic pressure of 240 and a diastolic pressure of 100. He was then feeling fairly well and attending to his work. Four months later, he became so weak that he contemplated going out of town for a rest. He then had marked symptoms of myocardial failure, and his systolic pressure had fallen to 150 and his diastolic to 50. He died a few weeks later. In this case, where a compensatory high pressure was required, the marked fall in pressure foretold the end.

Case IV. A publisher, aged fifty years, who had led a sedentary life with much mental strain, and who was habitually constipated, manifested dizziness, insomnia, and mild symptoms of circulatory insufficiency. His blood pressure was 95 systolic and 65 diastolic. Rest in bed, regulation of diet, and a small amount of heart stimulation soon brought up his systolic pressure to 120.

The writer has seen a number of cases in elderly people with obvious myocardial degeneration, but no apparent arteriosclerosis or nephritis, with blood pressure of 100 to 120 systolic and 50 to 75 diastolic, who were comparatively free from circulatory disturbances while they led quiet lives. Some of these cases probably owed the low blood pressure, in part at least, to other causes than the myocardial degeneration; and of those other causes, chronic toxemias of intestinal origin were seemingly among the most important.

Chronic toxemias of intestinal origin are very often associated with conditions which produce high blood pressure, notably chronic nephritis and arteriosclerosis, but they are also frequently attended with low pressure. In the latter class of cases a nonputrefactive diet regularly raises the pressure, while in patients with high pressure and signs of arteriosclerosis or nephritis, as well as in patients in the so called prearteriosclerotic state, also in those with an irritable myocardium, the high pressure is usually lowered by a nonputrefactive diet; in fact, such a diet is our most valuable means for lowering the high pressure in these cases. The writer has published elsewhere case reports illustrating this fact (1), and has also discussed elsewhere the value of the nonputrefactive diet in the differential diagnosis of conditions producing high blood pressure (2).

Case V. A teacher, aged thirty years, with the "poker spine" variety of arthritis deformans, suffered from dizziness, bad taste in the mouth, constipation, and general weakness. His blood pressure was 90 systolic and 70 diastolic. A nonputrefactive diet increased his pulse pressure by 15 mm. in less than a week and his symptoms greatly improved.

Case VI. A merchant, aged fifty years, who was under the writer's observation for more than three years, suffered from a severe type of chronic intestinal toxemia but kept down his toxemic symptoms by means of a rigid nonputrefactive diet, so that they occurred only in paroxysms every ten to fifteen days. He showed signs of thickening of the arterial walls, but not of nephritis. His systolic pressure between his paroxysms was ordinarily between 130 and 150, and during a paroxysm, it was found as high as 170. While in the midst of one of his paroxysms, the writer placed under his tongue a hypodermic tablet, containing nitroglycerin, grain 1/100, and a few minutes later his toxemic symptoms, viz., headache, dizziness, dry cough, pain in back of neck, and feeling of slight air hunger, became very much worse; he became bathed in a cold perspiration, felt faint, and almost lost consciousness; his pulse rate, which previously was 80, fell to 36, and his blood pressure fell so low that it could not be estimated. He recovered in about twenty minutes. In this case was shown a magnified response to the nitroglycerin test (3) with an increase in the toxemic symptoms and an exaggerated vasomotor depression.

In most acute infectious diseases the systolic pressure is low, and the diastolic also, unless there is an obstruction in the periphery. In typhoid fever the writer has found the systolic pressure usually in the neighborhood of 100, with a pulse pressure of 30 to 40. In cases with signs of myocardial degeneration the pulse pressure has usually been large, and in some of these cases the systolic pressure was 120 and more; raised possibly on account of myocardial irritability. In rheumatic fever, diphtheria, and influenza the systolic pressure is regularly low.

Case VII. A man, aged forty-eight years, with a history of what seemed to be intestinal grip, was first seen by the writer during convalescence, when he was walking around. His blood pressure was 90 systolic and 60 diastolic. He complained only of a feeling of weakness and a disinclination to exert himself. A week later, his blood pressure was still lower, viz., 87 systolic and 50 diastolic, and he still felt weak, but otherwise comfortable. After three days' rest in bed, his blood pressure rose to 105 systolic and 60 diastolic.

In lobar pneumonia, lowering of the blood pressure to any considerable degree, occurs less regularly than in most acute infectious diseases. It is usually lowered somewhat at the beginning of the disease, and again at the time of the crisis. In cases of apparent primary vasomotor paralysis, which occur occasionally, and in cases with pronounced myocardial failure, which are not uncommon, the blood pressure may be very low. In thirty cases of lobar pneumonia seen by the writer during the past year, which ended in recovery and also in which the blood pressure was observed, the lowest systolic pressures noted were as follows: Between 90 and 100, in eleven cases; between 100 and 110, in nine cases; between 110 and 120, in seven cases; between 120 and 130, in three cases. In twenty-seven of these thirty cases the systolic pressure fell below the pulse rate, thus contradicting the assertion of Gibson and Hare, that in cases of pneumonia in which the systolic pressure falls below the pulse rate the prognosis is bad. Beside the twenty-seven cases above mentioned, in which the blood pressure was estimated by the sphygmomanometer, the writer has seen twelve other cases of lobar pneumonia during the past year which terminated favorably, and also in which the blood pressure, as estimated by the finger, was evidently below the pulse rate. He has discussed elsewhere the weakness of this contention of Gibson and Hare (4).

Persistent low blood pressure in pneumonia, which appeared to be largely from myocardial weakness, was observed in the two following cases, both of which ended fatally.

Case VIII. A man, aged forty-nine years, had a grip pneumonia, with which he walked around three days before coming into the Norwegian Hospital. On admission, his right ventricle was much dilated and his chest was full of moist rales; there was consolidation of the right lower lobe; his systolic blood pressure was 84. The right heart dilatation did not improve, and his systolic blood pressure remained between 80 and 90 most of the time during the next four days. On the fifth day, shortly before he died, his systolic pressure rose to 120, probably from partial asphyxiation.

The writer once saw the systolic pressure in a low pressure case of pneumonia rise to 150 shortly before death.

Case IX. A man, aged fifty-eight years, walked around for three days after his initial chill, and entered the Norwegian Hospital in the fourth day of the disease. On admission he had a much dilated right ventricle, and pulmonary edema, and his blood pressure was 70 systolic and 50 diastolic. This patient lived for nearly two days in the hospital, and at no time was his systolic pressure found above 70, and much of the time it was so low that it could not be estimated.

In pericarditis, as in myocarditis, there is regularly diminution of the systolic force and a lowered systolic pressure. A man, twenty-two years old, with a chronic pericarditis and mediastinitis, possibly tuberculous, of three years' standing, who was able to walk around and who felt generally comfortable, though not strong, showed a systolic pressure of 100 and a diastolic pressure of 50.

In compensated valvular disease the blood pressure is usually normal, except in aortic incompetence, in which condition the diastolic pressure is regularly low and the systolic regularly high. When there is pronounced loss of compensation in valvular disease the blood pressure falls. For example, a boy, eleven years old, with valvular disease, lost compensation, and a greatly dilated heart, showed a blood pressure of 65 systolic and 35 diastolic; and the systolic pressure was not found above 70 during a period of four weeks; then it began to rise with partial recovery of compensation.

Chronic wasting diseases are usually attended with low blood pressure. In chronic phthisis, although considerable variations in pressure may be observed, on the whole the pressure is apt to be low. The writer has observed low blood pressure in excessive smokers of tobacco. A physician, twenty-five years old, who was an excessive smoker of cigarettes, awoke one morning, feeling so weak that he did not care to get out of bed. His heart action was feeble, and his blood pressure, estimated by the finger, was very low, and his pulse rate was about 60. After two days' rest in bed with abstention from tobacco, his heart action came back to its normal. An active business man, fifty-three years old, who was an excessive smoker of cigars, awoke one morning with symptoms similar to those of the patient last mentioned, and a pulse rate of 52. After three days' rest in bed with abstention from tobacco, he recovered.

Case X. A journalist, aged thirty-five years, with good general health and no previous morbid history of significance, but who had been a more or less heavy smoker for thirteen years, manifested mild anginoid symptoms and some shortness of breath, after more than usually heavy smoking and after severe physical exertion. His systolic blood pressure observed during a period of two months ranged between 85 and 110, and his pulse pressure between 20 and 50, being most of the time between 30 and 40; and his pulse rate ranged most of the time between 50 and 70. He reduced very much his smoking, and, after three months, his systolic pressure was found to be 125 and his diastolic to be 85. A single pipeful of tobacco was found to raise his diastolic pressure 10 mm., but to have no effect on his systolic pressure. Three times this observation of the effect of a single pipeful of tobacco was made on this patient. The exercise test previously referred to, made by causing him to run around a room briskly for 30 seconds, resulted in a fall of 10 mm. in both systolic and diastolic pressure. In the study of this patient's blood pressure the following observations were made: The systolic pressure was usually lowest when the subjective cardiac symptoms of chronic tobacco poisoning were most pronounced; the pulse pressure was generally smaller when those symptoms were pronounced than when they

were not; a single smoke raised the diastolic pressure but did not raise the systolic pressure; brisk exercise caused a fall in both systolic and diastolic pressures.

It is interesting to compare with these last observations the following observations:

Case XI. A physician, aged forty-one years, who had been an excessive smoker for many years, but who experienced no subjective cardiac symptoms at any time, showed a low blood pressure with a large pulse pressure, viz., 105 systolic and 55 diastolic; and a pulse rate of 80. A single smoke caused a rise of 15 mm. in both his systolic and diastolic pressure, but did not increase his pulse rate. The same exercise test which was given in the preceding case caused a rise of 5 mm. in both his systolic and diastolic pressures, and increased his pulse rate by 8 beats.

Case XII. A physician, aged thirty-seven years, who was fond of tobacco, but used it very sparingly because he was so susceptible to its effects that even moderate indulgence produced mild anginoid symptoms, after taking a few whiffs of a cigar, showed a systolic pressure of 100 and a diastolic pressure of 55. After he had smoked one half of the cigar, his systolic pressure was the same, but his diastolic pressure was 10 mm. higher. The exercise test caused his systolic pressure to rise 15 mm., while his diastolic pressure remained unchanged, and increased his pulse rate by 28 beats.

The last three subjects mentioned, viz., the excessive smoker who had anginoid symptoms, the excessive smoker who did not have anginoid symptoms, and the very moderate smoker with the unusual susceptibility to the poisonous effects of tobacco who had anginoid symptoms, all agreed in showing low blood pressure. In both those showing anginoid symptoms the pulse pressure was made smaller by a single smoke, but this did not happen in the case without anginoid symptoms. In the case of the excessive smoker with anginoid symptoms, the exercise test lowered both systolic and diastolic pressures. In the other two cases it raised the systolic pressure and either did not affect at all, or slightly raised the diastolic pressure.

Surgical shock is an effective cause of low blood pressure. Striking illustrations of this fact are shown in the following cases.

Case XIII. A physician, aged forty-two years, was operated on twice for a tumor of the brain, with an interval of five days between the operations. The writer examined his blood pressure every few minutes while the operations were going on. Shortly before the anesthetic for the first operation was begun, his blood pressure was 150 systolic and 90 diastolic, and his pulse rate was 100. Immediately after the first incision of the scalp and consequent hemorrhage, it fell to 65 systolic; but five minutes later it rose to 85 systolic, and, twenty-five minutes later, it was 125 systolic and 75 diastolic. It stayed between 100 and 125 systolic until the close of the operation, and fell to 60 systolic as the patient emerged from the anesthetic, at which low point it was found five hours later; but soon after that it rose to 120 systolic. Shortly before the anesthetic for the second operation was begun, his blood pressure was 145 systolic and 95 diastolic. During the first stage of the anesthetic, it rose to 170 systolic. Immediately after the first incision and consequent hemorrhage, it fell to 60 systolic. During the remainder of the operation, which lasted one and one half hour, his systolic pressure was not found above 60, and during three quarters of an hour it was not found above 50, being some of the time so low that it could not be estimated by the sphygmomanometer. At the close of the operation it rose to 60. His pulse rate during the operation, when it could be made out, was about 90. He remained in a state of shock for about seven hours, and then died apparently of cerebral hemorrhage.

Case XIV. A woman, aged fifty-three years, in fairly good general condition, had a complete hysterectomy done for carcinoma uteri. Her blood pressure, taken by the writer shortly after she was completely anesthetized, was 80 systolic and 60 diastolic. Fifteen minutes later, when the abdomen was opened, it was the same. Ten minutes still later it was 62 systolic and 40 diastolic. Ten minutes still later, it was 90 systolic and 75 diastolic. Ten minutes still later, it was 75 systolic and 60 diastolic (pulse pressure only 15). Forty-five minutes still later, and fifteen minutes after she had been taken from the operating table, it was found by another observer to be 75 systolic and 60 diastolic. Fifty minutes still later, it was 85 systolic and 70 diastolic. One and a half hour still later, it was 90 systolic and 65 diastolic. Fourteen hours still later, it was found by the writer to be 135 systolic and 70 diastolic, and the patient's condition was generally good.

It is interesting to compare with these observations on low pressures in surgical operations, the following observations on ten patients operated on at the Williamsburgh Hospital, which were selected as being in fairly good general condition, for study of the effects of ether anesthesia on the blood pressure. These observations were made by Doctor Feiner, the house surgeon, under the writer's direction. In all the cases it was found that the ether caused a rise of about 10 to 20 mm. in the systolic pressure, while there was in most cases very little change in the diastolic pressure; and that this rise in the systolic pressure lasted four days.

CONCLUSIONS.

From the foregoing observations on low blood pressure, and others not reported for lack of space, it is possible to draw a few conclusions, positive or tentative, as follows:

1. A low systolic pressure, provided the diastolic pressure is correspondingly low, does not necessarily mean poor circulation, although it does imply a diminished reserve power of the circulation.

2. A low systolic pressure with a comparatively high diastolic pressure, and a consequently small pulse pressure, usually means myocardial weakness with chronic nephritis, arteriosclerosis, or arterial spasm, and may be bad prognostically.

3. A low diastolic pressure with a comparatively high systolic pressure, and consequently an excessively large pulse pressure, may mean several things, e. g., a purely functional condition, a compensated aortic regurgitation, myocardial degeneration without arteriosclerosis or nephritis, toxemic irritability of the myocardium, or vasomotor dilatation from any cause.

4. The diastolic pressure seems to be more stable than the systolic, and to show, less often than the systolic, marked variations from its normal without definite pathological cause; and the systolic pressure seems to accommodate itself to the diastolic more easily than the diastolic to the systolic. The diastolic pressure indicates the peripheral resistance, which in many cases is determined by permanent pathological conditions. Movements of the diastolic presurse beyond the normal health range cause the pulse pressure to take on an overload if an adequate circulation is kept up.

5. Vasodilator drugs may improve the circulation by increasing the pulse pressure.

6. Cardiac depressant drugs may lower the diastolic pressure by diminishing the systolic force and calling for a pulse pressure overload.

7. Toxemias, both acute and chronic, can produce low blood pressure by dilating the bloodvessels and by weakening the myocardium, but the greater part of their effect in the larger number of cases is probably produced by vascular dilatation, either through the vasomotor centre or locally.

8. Chronic tobacco poisoning is a very common cause of persistent low blood pressure.

9. It is possible for a patient to live for several hours with a systolic pressure below 60, and for several days with a systolic pressure below 70, and to walk around without particular symptoms of circulatory distress with a systolic pressure of 90, provided the pulse pressure is sufficiently large.

10. The pulse pressure in health usually ranges between 30 and 45; and pulse pressures as small as 20 or as large as 60, if persistent, may be considered pathological.

11. A systolic pressure of 100 or lower in an adult usually calls for treatment.

12. Shortly before death partial asphyxiation may cause a sudden, transient rise in the blood pressure.

13. A fall in the systolic pressure in response to an exercise test, immediately, or after a short preliminary rise, and a delay in its return to the normal, while lacking positive significance, suggest the existence of myocardial weakness, as does also a failure of the pulse pressure to show a substantial increase in size in response to such a test.

14. The neurotic factor in the patient and the personal factor in the observer, may require a considerable allowance to be made for them in the interpretation of blood pressure findings; and the clinician must constantly guard against being misled by blood pressure findings, and especially against ascribing too much importance to them when not supported by other evidences of disease.

In the treatment of low blood pressure, concerning which only a few words will be said here, removal of the cause is, of course, the first duty. If the cause is a chronic toxemia it can very often be removed or lessened; and this is particularly true of intestinal toxemia. The removal of chronic tobacco toxemia is possible but often difficult.

An essential element in the treatment of low blood pressure is rest. To what extent physical, mental, and emotional activity should be restricted depends on the effectiveness of the existing circulation and the amount of reserve power which the heart possesses. Patients with chronic myocardial degeneration, whose blood pressure is comparatively low and who have symptoms of circulatory insufficiency on slight exertion, may require to be kept very quiet, though many of them may be permitted to walk around, avoiding stairs and speed. In persistent low blood pressure following typhoid fever or any of the acute infections, prolonged rest in bed is necessary.

If there are definite signs of circulatory insufficiency, heart stimulant drugs may be called for, and the drugs of this class which the writer has found most generally useful, are strychnine, strophanthus, and caffeine. Digitalis may be of great service in cases with low diastolic pressure and a fairly healthy myocardium, but that drug is contraindicated in cases with myocardial degeneration and a relatively high diastolic pressure.

In cases with severe, sudden falling of the diastolic pressure due to toxemic vasomotor dilatation, adrenaline and pitruitrin seem suitable agents to use. The writer has had little experience and not much success with those agents.

In cases of low blood pressure due to severe hemorrhage, the rapid introduction of a normal saline solution into the circulation is called for, and also elevation of the lower part of the body.

In some cases with a relatively high diastolic pressure and a small pulse pressure, nitroglycerin may prove useful by enlarging the pulse pressure; but nitroglycerin is absolutely contraindicated in cases in which the diastolic pressure is low.

The clinical study of blood pressure, in spite of the seeming inconsistencies and contradictions which it discovers, promises much for internal medicine; and the sphygmomanometer is a clinical tool which seems destined to be accepted on terms of equality with the thermometer and the stethescope. Especially fruitful is likely to be the study of the diastolic and pulse pressures; for in the absolute and relative variations of the diastolic and pulse pressures the clinical significance of blood pressure findings is chiefly revealed.

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1218 Pacific Street, Brooklyn.

FOOD TOXEMIA OR AMERICAN GOUT.*

By Robert N. Willson, M. D.,
Philadelphia.

Under one name and another, there has been accumulating an increasing number of descriptions of the results of food poisoning in the human being, until at length the average patient and the average doctor are bewildered by the diagnostic maze, more scientific than rational, and by all odds more complicated than is warranted by the premises in the case. Though experiencing identical clinical pictures, the forlorn individuals are told that they are now suffering from gout, now from rheumatism, again from arthritis deformans, which one consultant affirms is a streptococcus infection, while the next asserts with equal positiveness that it is due to faulty metabolism, whatever that term actually may mean! Before consulting the medical adviser, the patient has realized of his own intelligence, and perhaps by virtue of that most effective of all teachers, personal experience, two cardinal principles that have been influencing his comfort and well being. The first principle comprises an indictment which you and I will readily admit to be true, the fact that we all eat, and some drink, in greater quantity and frequency than balance the needs of the individual economy; and, second, that in some way the body and the bodily functions suffer from the excess, and often from the nature of the food ingested. The physician may add to this duo of fundamentals a third fact, namely, that few or no adults cleanse their gastrointestinal tracts from end to end at more than very infrequent intervals, while many may have been so slovenly as to retain in old age (figuratively speaking) in their cecal pouches

*Read before the Section on Medicine, College of Physicians [illegible]

a trace of the meconium which they brought into the world as babes. In December, 1909 (*Journal of the A. M. A.*), I reported a series of four instances of seemingly hereditary tendency to malassimilation of ordinary quantities and certain kinds of food. As the series included four generations of a family with which I have had rather intimate personal association, it afforded me an unusual field for constant, and in a measure, intelligent observation and investigation.

The first patient was a grandmother who had for years been in my medical care. I had watched her through many minor, as well as severe attacks of typical acute, inflammatory rheumatism, with suddenness of onset, acid sweats, fever, and all the additional features of true infectious rheumatism (plus urticaria), but invariably relieved and cured by a vigorous intestinal housecleaning and housekeeping, and by starvation. Patient No. 2 furnished a long series of indefinite toxemic symptoms, now of simple malaise, again of gastrointestinal irritation, or, less frequently, of typically gouty joint attacks. He also became and remained well, just as promptly and just so long as he proved willing (fleshly speaking) to maintain a rigid dietary regime.

The third patient was myself, and of the possibilities and disadvantages involved in self study more hereafter. Suffice it to say, that I have found myself able, by running up and down the scale of food quantity and variety, deliberately to produce, and by intestinal hygiene promptly to relieve, many clinical pictures that are masquerading under very different characterizations from those of food excess or improper supply. I have produced by deliberate experiment, at different times, coryza, bronchitis, apparent influenza, pulmonary congestion, general myositis, intercostal neuralgia, lumbago, sciatica, coccygitis, heartburn (so called), palpitation, hypertension, gouty swelling of the joints, including the instep and the great toe, arthritis deformans (so called) of the fingers, of the malar joints, and of the cervical spine; and, finally, a series of symptoms indicating a general toxemia, that included heaviness and sleepiness, loss of initiative, general muscular and skin tenderness and soreness, and loss of weight almost to the point of incapacity for work. Meats have seemed to exert very little influence, if used sparingly once daily. As soon as this limit has been exceeded, there has occurred an invariable and swift exaggeration of symptoms. The proteids seemed to act in a manner identical with, only a little less promptly, in this respect, than an orange, or a lemon, or an apple. First coryza, then a cough, then general body pains (muscular and nerve), and, finally, any one or other group of phenomena might appear, following as readily the protein excess as the acid of the apple.

As already stated, all of these pictures I have deliberately produced in myself more than once by the administration of food quantities too large for individual me, though nothing in comparison with the daily amounts ingested by other perfectly average individuals. I have found that the same pictures can be developed as the result of ingesting articles of diet poisonous to me, such as fresh fruit of any and every kind, tomatoes, cranberries,—and that when using these food stuffs, the total quantity of food taken need not be equal to or approach the amount recognized as excessive, when free from the acid element. I have also found that the entire swarm of afflictions begins to disappear within an hour of a thorough evacuation, not of the rectum, but of the entire intestinal canal.

Patient No. 4, in the person of my little child (then four to five years old), formed a sorry, but almost laughably accurate reproduction of my own personal experience. Until I was sure of my ground, I repeatedly brought on in her a severe acute bronchitis, and the complete picture of an influenzal attack, simply by the administration over a period of from one to three days of a (for her) excess of food. More than once she has of her own accord and unwittingly carried out the same experiment, and twice has developed from the bronchitis a typical area of bronchopneumonia.

My object in referring to this striking series is purely and simply to direct attention anew to the fact that the cure for many otherwise serious states is easy, if their real nature is recognized, though it involves often a loss of popularity and pride on the part of both patient and physician. I desire also to bring to the notice of the medical profession the fact that on every side we, as well as our patients, are furnishing similar instances for clinical and laboratory investigation and study. Cases such as I am describing are by no means rare. Thus, my former communication had no sooner appeared than a prominent laryngologist in this city said to me, "I have just seen such a series in my practice, evidently due to intestinal toxemia." Very recently in a discussion of lumbago before the College of Physicians, not a reference was made by either internists or surgeons to the most frequent of all causes of that distressing condition, namely, pressure from gas or fecal matter in a chronically inflamed and tired intestine. On the way home, however, a surgeon, after hearing my comment on the (to me) strange omission, said, "there is one other cause just as frequent and certain in my own case—and that is—fresh fruit of any description." Both of these observations, this and my own, had grown out of a long, personal, unnecessary experience with a type of lumbago that is always based upon the etiological reflection that "the spirit is willing, but the flesh is weak."

In the foregoing recital, I have already accomplished my main purpose, to remind the reader that we are often calling conditions by wrong names, when we talk of many of the arthritides, and of the colds, and of the influenzas by such designations, and when we look solely to the adrenal bodies and the kidneys for the cause of vascular hypertension and cardiac hypertrophy and degeneration. I go still farther, in thinking that we shall take surer, and more conservative ground if we refuse to accept without many reservations the infectious theory for acute inflammatory rheumatism, gout, arthritis deformans, for many inflammations of the respiratory tract, also of the eye, unless indeed the causal toxemia be due to the colon bacillus and its chemical derivatives.

Following are the case histories, briefly outlined, of a few patients who have furnished me an opportunity for verifying facts, first suspected and then

demonstrated in my own family circle. None resembles in all particulars any other; though all show a definite relationship, at least with respect to the method of their certain and speedy cure.

Case I. Boy, aged seven years, of healthy parentage. A vigorous home attempt to stuff and fatten him resulted in constant coryza, frequent colds, repeated attacks of inflammation of hypertrophied tonsils, swollen and aching joints, and finally a low grade catarrhal involvement of one pulmonary apex. Rational feeding and intestinal care eliminated the nasal, tonsillar, and joint symptoms, though the parents have persistently refused tonsillectomy. The pulmonary apex has also entirely cleared. No other treatment has been employed.

Case II. Boy, aged fourteen years, with a racking cough of weeks standing, with mucopurulent sputum. Chest practically negative, except for moist bronchial rales heard in all directions. Generous dosing with castor oil and starvation in bed for two days effected a complete cure. No other treatment was employed.

Case III. Young woman, otherwise healthy and well; organs all appeared normal. A slight excess of food produced general aching of the joints, eczema of the skin, itching and puffiness of the eyelids. If the excess, however slight, was persisted in, there appeared all the symptoms of an influenzal cold with coryza, bronchitis, soreness of the muscles and joints, and general prostration. No treatment affected the symptoms, except gastrointestinal sweeping and starvation.

Case IV. Old lady, recently convalescent from a pneumonia, ate a few large grapes, and manifested within a few hours a profuse coryza and an obstinate series of sneezings. She was exceedingly skeptical of the influence of the grapes, until the experiment was repeated, with like result.

Case V. Middle aged physician could not eat an apple, peach, pear, or any fresh or cooked fruit without experiencing the inevitable lumbago which appeared only under such provocation. This case was similar in many features to my own.

Case VI. Young man, aged thirty years, with a long-standing painful involvement of the hip, thigh, and knee. For weeks he had experienced constant aching and pain. Often the course of the sciatic nerve had been so sensitive as to tolerate only the gentlest touch. After consulting many specialists, and wasting nearly all his substance, the regulation of his food supply, and hygiene of the bowel accomplished a seemingly permanent cure.

Case VII. Woman, aged forty-three years, chronically an invalid, with muddy complexion, dragging gait, mental depression, and little interest in life; pains everywhere over musculature of the body. Had for many months experienced a tendency to liquid stools, with occasional mucus. Regulation of the dietary and castor oil (used weekly) gave her health for the first time since childhood.

Case VIII. Young man, aged thirty-five years, teacher, had just convalesced for the second time from a severe inflammation of the cornea, and the uveal tract. His attack began with an intestinal disturbance, offensive breath, flatulence, and diarrhea. His ophthalmologist gave him an unfavorable prognosis for sight in one eye. Laxatives, starvation, then an extremely simple diet, together with intestinal lavage (and of course a continuance of local treatment of the eye) on two occasions effected a complete cure. The second attack followed immediately upon his return to careless methods of eating and the relinquishing of gastrointestinal hygiene.

Case IX. Young woman, aged twenty-three years, also a teacher, recently presented a history and neuritis almost identical with the preceding. From November to the middle of January, her left eye had been practically useless. Within a week cartharsis and minimal feeding had, with local treatment, enabled her to go back to work with an eye that showed few traces of inflammation. When told our suspicion as to the cause of the trouble, she replied, "I know you are right; I eat all day long."[1]

Case X. Physician, of middle age, ate moderately, and practically never between meals. The slightest excess in quantity, especially at night, produced soreness in one hip, sometimes in the knee, and foot; occasionally a typical lumbago and sciatica. At the same time there was a general muscular soreness, amounting to exquisite pain in the intercostal muscles and diaphragm upon coughing or sneezing. The morning following an evening indulgence in food he suffered from coryza, lacrymation, hoarseness, and cough. Thorough purgation and abstention from food for twenty-four hours relieved him completely of these symptoms.

Case XI. Young working man, aged twenty-one years, ate immoderately; constipated; joints ached, skin was dry, fingers cracked open. Patient has been gradually developing ozena, the odor from which had nearly cost him his friends. Practically the entire picture changed as the result of dietary hygiene and the simplest local treatment of the nose.

In conclusion, I would direct attention to the absence in very many instances of food toxemia of the usual symptoms of indigestion. Pain, gas, constipation, diarrhea, mucus, and even bloody stools, may appear, but do so rarely, and then only serve to accentuate the causal influences. I have found in my own case that two meals a day, and only one of these a full meal, is my limit of tolerance, if health and vigor, and activity, and interest, and, curiously enough, if body weight, are to be maintained. As long as I adhere strictly to this regime, of "nothing to eat between meals or after midday; no fruit; no highly acid vegetable; two quarts of drinking water daily; and exercise in the fresh air to the point of healthy tire," I remain able to rise at 6.30 o'clock and retire at one, and to enjoy every moment of work and play. As soon as I overstep these bounds—even to the extent of a light evening meal, a banquet, an apple—I pay dearly for the extravagance and the weakness. I have many times awakened in the morning, an old man, though having retired a young one the night before. The pain in the loin, especially along the line of the ascending colon where the latter is superficial, has been so exquisite that I have had to roll out, because unable to rise from bed; my right hip, and often the knee, would ache and the leg would hardly bear my weight; the throat red and sore, the nose and pharynx full of mucopus, and my whole self useless and out of commission until an hour or two later! Even the sitting posture is uncomfortable at such times, the coccyx usually being tender and sore. With the morning evacuation of the intestines, there is a prompt lightening of the distress in both the loin and hip. The pain does not disappear, however, until the intestine is swept clear. Within twenty-four hours every vestige of old age has been removed. Thus, on retiring after a banquet or evening meal at which I have been indiscreet enough to eat, I dread the morning for its inevitable retribution. Needless to say, I seldom transgress.

As the past ten years have flown by I have noticed an increasing tendency to, and ease in the production of one or other of the foregoing clinical pictures as the result of trifling wanderings from my recognized pasture limits. I have also noticed that there is an increasing tendency to their ready appearance when I am under special nervous tension, as in the attempt to hurry through a delayed important task; yet I have ever at hand the knowledge and satisfaction—and they constitute a considerable recompense—first, that the old method of cure has lost none of its certainty or

[1] Cases VIII and IX are especially interesting and illuminating in the light of such studies as those of Dr George E. De Schweinitz, reported before the Seventeenth International Congress of Medicine, p. 45.

efficacy; and second the conviction that if I had not long since determined my distressing inability to keep pace with the ingestive and assimilative abilities of my average brother man, I should altogether unnecessarily have been laid aside a physical cripple, and labeled by someone or other, or perhaps by the agreement of a generous half dozen of my medical friends in consultation assembled, "an interesting, but sad, instance of arthritis deformans," for such I take my particular case to be. I believe that every condition mentioned in this paper is preventable and curable, if recognized in time. I sometimes think the old country doctor, with his bottle of castor oil, and his knowledge of the efficacy of occasional starvation, and now and again of a generous "sweat," struck nearer the causation and treatment of man's physical ills, than does many a laboratory worker who twists first this and then that bacterium out of relationship with its own and its ancestor's environment, and inoculates animal after animal, until he finally produces a picture in a patient little laboratory subject which conforms somewhat with that which he desired to see. It is a diagnostic aid to remember that in these conditions medicines (other than carthartics and intestinal antiseptics) usually aggravate the symptoms, whether they be a cough, a lumbago, a uveitis, or a swelling of the great toe. A generous dose of some vigorous laxative, repeated more than once, and aided perhaps by an epsom salt or bicarbonate of soda enema (also repeated), together with starvation until relief comes, and rest in bed if the symptoms demand the measure,—these form an unfailing treatment of that series of protean symptoms which, for want of a better name, I term food toxemia or American gout.

Once the cure has been attained it will behoove both the physician and the patient to see to it that the gastrointestinal tract of the latter is swept from end to end, once weekly, or once each fortnight, as the case may demand. Each individual will present a separate problem, as to the number of calories of food he can tolerate with benefit. The variation has in my experience ranged from 2,000 to 3,000 calories. Never does the food supply required in such an afflicted individual total 4,000 or 5,000. The permanency of the cure will depend upon the rigidity of the patient's adherence to the schedule prescribed. As with one's eyeglasses, the regimen may require adjusting as time goes on. Improvement or depravity of the physical state, the environment, alterations in the nervous tension, climate, and atmosphere, may all affect the direction of the treatment in the given patient. In this knowledge, I think the next generation will find us handling many of our lung, and joint and cardiovascular patients quite differently. Possibly the names gout, rheumatism, and arthritis deformans will have even fallen into disuse.

Fewer instances of food toxemia will of very necessity be diagnosed as incipient tuberculosis merely on the basis of the long continued presence of cough and sputum; and we shall not then hesitate to admit that there may grow from too ample a supply of food even such entities as bronchitis and bronchocatarrhal pneumonia.

1827 Spruce Street

SERUM DIAGNOSIS.*

A Brief History and Its Present Status.

By J. Diner, Ph. G., M. D.,

Assistant Professor, Pathology and Bacteriology, Fordham University Medical School; Visiting Pathologist, St. Mary's Hospital, Hoboken, N. J.

The first case on record in which blood serum was used for diagnostic purpose, is that of Dr. A. S. Gruenbaum. While working in Gruber's laboratory at Vienna, in 1896, he tried the agglutination test in several typhoid fever cases from Nothnagel's clinic and obtained positive results. Announcement of this was made by Gruber at a medical congress in Vienna about a month later, but Gruenbaum's name was not mentioned at that time, because he felt that he had not sufficient data to go before the medical profession and desired to carry out further tests on the serum diagnosis of typhoid fever. Shortly after this F. Widal gave a description of several successful agglutination tests carried out by him, in a paper read before the Société médicale des Hôpitaux, and subsequently several more papers by Widal appeared on the same subject, thus gaining for him, inadvertently, the reputation of the discovery of the phenomenon of agglutination and causing this test to be known as the Widal test. We see therefore that, while the first paper on serum diagnosis of typhoid fever appeared under the name of Widal, nevertheless the honor of the discovery of this test actually belongs to Gruenbaum.

In 1897, Professor Max Gruber wrote (*Münchener medizinische Wochenschrift*, 17 and 18) as follows: "At my suggestion Dr. Albert S. Gruenbaum began, during the month of March last year, a series of agglutination tests with the blood of persons who were ill with typhoid fever and of those who had recovered from an attack of this disease, in comparison with the blood of normal individuals, and he soon discovered that the blood of human beings suffering from a typhoid infection has 'specific' agglutinating action on Bacillus typhosus and that this specific action is capable of demonstration early in the disease (on the eleventh day of the attack)." Further on in the same article Gruber states: "Just as soon as the serum of an actively immunized animal begins to manifest resistance power, just so soon does its agglutinating power begin, and the agglutinins remain in the blood of such an animal just as long as such immunity lasts . . . and I do not doubt that the conditions existing in the experimental animal equally hold good in the human being." In the same year, Gruenbaum points out the importance of "proper dilution" of the serum and of "the time limit" in the employment of the agglutination test, and calls attention to what he calls the "inherent agglutination power of many normal serums in concentrated solution" (what we now term normal agglutinins).

In the same article, Gruenbaum takes exception to Widal's statement that the phenomenon of agglutination is "a reaction of infection" and maintains, as has been proved correct since, that "the agglu-

*Read before the Bronx (N. Y.) Medical Society, January 7, 1914.

tinating power of the serum stands in direct proportion to its immunizing power and is a result of the immunizing process," basing his views on the fact that "the word infection is usually reserved for the action of living materies morbi, but that the agglutinative action can be produced both in man and in animals by the injection of dead bacilli . . . and the long duration of the agglutinative reaction after defervescence of the disease is perhaps the strongest reason for considering it to be a reaction of immunity . . . a reaction of infection should, to justify its name, disappear with the cessation of the infection." Thus does Gruenbaum not only establish the fact of the agglutination phenomenon, but also argues wisely and well in favor of the now established fact that the agglutinins are a factor in immunity. Later on in the same article he refers to the possibility of applying the principle of serum diagnosis to other diseases, mentioning that it had already been used in the diagnosis of cholera, Malta fever, and glanders, and regretting the inability, thus far, of using it in the diagnosis of tuberculosis and diphtheria, pointing out that "motility of the organism causing the disease is not an essential factor in this method of diagnosis, since dead bacilli will also clump under action of the specific serum." Further on, he forecasts the possibility of utilizing specific serums for the recognition and discovery "of specific microorganisms as yet unknown."

Notwithstanding the fact, however, that Gruenbaum was the first to apply serum diagnosis to human beings, he was by no means the first to recognize the effect of immune serums on their bacterial antigens. In 1889, Charin and Roger found that serum from animals injected with Bacillus pyocyaneus, living or dead, caused macroscopical precipitation (agglutination) of the bacillus. This observation was confirmed by Issaeff and Ivanoff, in 1894, on the cholera vibrio and by Pfeiffer's now classic experiment with the same microorganism and later on with Bacillus typhosus, while Metchnikoff and Bordet, a little later in the same year, showed that the phenomenon observed by Pfeiffer in the living animal could be seen in the hanging drop preparation under the microscope. Troisier and Sicard report a case, which when first seen, showed no fever, but had evidence of nephritis, also retraction of the head and headaches. The agglutination test was positive, and on autopsy the case was found to have been a meningitis due to Bacillus typhosus. McFadyen, in 1896, observed the phenomenon of agglutination of Bacillus mallei with serum obtained from horses suffering with glanders, and this observation was confirmed by Fullerton, who applied the test to the serum obtained from a stable boy affected with this disease (glanders). Paltauf found the agglutinative reaction present in the blood of a guineapig killed by inoculation with dead plague bacilli, and Wissakowitch and Zobobati, as well as Zabolotmy, found that the agglutination with Bacillus pestis was obtainable with specific serum at the end of the second week in dilutions of one to ten and in dilutions of one to fifty during the convalescence in the third and fourth week. Besançon and Griffon were the first to observe that the blood of mice and rabbits killed by pneumococci injections would agglutinate the pneumococci. In 1898, Spronck, of Utrecht, clearly demonstrated the agglutinative power of leprous serum on Bacillus lepræ, obtaining the reaction in one case in dilution of one to 1,000 and in several others in dilutions above one to 200.

Nicolas, in 1897, obtained agglutination with antidiphtheritic serum and diphtheria bacilli in dilution of one to 50,000. Rostoski, in the same year, points out that "there is a difference between bacterial origin of disease in so far as some, for instance the tetanus and diphtheria bacilli, do not swarm over the entire animal organism, but gain a foothold at the portal of entry into the body and there elaborate a poison which gains entrance into the blood circulation and thus damages the host . . . whereas others, Bacillus typhosus and the cholera vibrio, do not give off any poisons in their immediate surroundings, but overflow the body and are capable of settling most anywhere. These liberate their poisons, which eventually cause the death of the individual, only after they, the bacteria, die off." Thus we have first our modern classification of exotoxins and endotoxins and, secondly, he points out that a knowledge of these differences in toxins is valuable, not only from the standpoint of serum diagnosis, but also from that of serum therapy. He also points to Pfeiffer's classic experiment demonstrating bacteriolysins and to "the agglutinins which were discovered by Gruber and Durham." Further on, in the same article, he refers to Schotmueller's "recently introduced method" whereby twenty c. c. of blood are taken from the basilic vein and a blood culture is made for the purpose of "proving by cultural means the bacterial etiological factor of disease, especially in the case of typhoid fever." Rostoski also points out that the spirillum of relapsing fever is demonstrable directly in the blood, in the unstained specimen, and that the plasmodia maleriæ may be thus demonstrated within the body of the red blood corpuscles.

Meinhardt Pfaundler was perhaps the first to call particular attention to and explain the phenomenon of group agglutinins and the consequent necessity of proper dilution of the immune serum. But, on account of the continuance in the blood of agglutinins long after the recovery from an attack of typhoid fever, Rostoski states "that the Gruber-Widal reaction points neither for nor against typhus abdominalis with absolute certainty . . . it is an important link in the chain of symptoms . . . but we must not forget that it is by no means of the same value as *the direct proof of the presence of Bacillus typhosus in the circulating blood by smears or by blood culture.*"

Robert Koch used the serum of tuberculous patients for agglutination tests, not so much for purposes of diagnosis as to establish the amount of antibodies present and the corresponding increase of these antibodies in response to tuberculin treatment. Kolle and Gottschlich utilized the agglutinative phenomenon for the recognition of cholera vibrio and Dieudonné finds "that the serum of plague patients will agglutinate Bacillus pestis." Besançon and Griffon, Huber, Neufeld and Jehle made, in 1903, extensive studies on the serum diagnosis and agglutination of the pneumococcus, while Jaegeron, the same year, made equally extensive

studies on the agglutinative properties of the meningococcus.

Thus we see that the door for serum diagnosis was opened by the phenomenon and the recognition of agglutination, and I may therefore perhaps be forgiven for dwelling at such great length on this phase of serum diagnosis.

It is hardly necessary to enter here into the details of the technic of the agglutination test, but a few remarks as to methods of obtaining the serum and a general view of the interpretation of results may not be out of place. While the matter of convenience for transportation has made the dried-drop-on-slide method the usual mode of gathering the specimen, too much cannot be said against it and in favor of obtaining the specimen in Wright tubes. If for no other reason, the fact of inaccuracy of dilution should be sufficient to condemn the slide method, not to mention the admixture of particles of dust and other organic matter from the air, carried over into the hanging drop and there, either mechanically or chemically, modifying or interfering with accuracy of the reaction. The process of dilution should, like all other laboratory work, be carried out with sterile instruments and with the greatest possible accuracy. This can readily be done by using a Wright pipette, marking off with glass pencil a point about one inch from the end, and allowing this to be one unit. The centrifugated and corpuscle-free serum is drawn up to the unit mark in the capillary pipette by the aid of a rubber teat, a bubble of air is now admitted, a unit of normal salt solution is drawn up, another bubble of air followed by a unit of the saline solution, and so on until nineteen units of saline in addition to the one unit of serum have been drawn up in the pipette. The contents of the pipette are now thoroughly mixed by alternately discharging them into a sterile watch crystal or depression into a painter's porcelain plate and sucking them up again, carefully avoiding air bubbles. One unit of this dilution, which is one in twenty, is now placed in another watch crystal or depression, and one unit of an eight hour broth culture of Bacillus typhosus grown at room temperature is added, well mixed, timed, and a hanging drop preparation is made. This gives a dilution of one in forty. While different authors give different time standards, it is generally conceded that complete agglutination in dilution of one in forty within one hour is to be considered a positive Gruenbaum-Gruber-Widal reaction. The collection of the blood by means of Wright pipette becomes still more important, in fact indispensable, when the macroscopic agglutination test is to be made, either for diagnostic purposes or to ascertain the amount of agglutinins elaborated in response to vaccination. Here the main steps are similar to those described, but dilution of serum is carried out to one in 1,000 or even higher (in a series of inoculations made by Dr. C. Z. Garside and myself some time ago we obtained agglutination in one in 15,000 and the army reports speak of results in dilution of one in 20,000), and, instead of making hanging drop preparation, each dilution is sucked up in a separate Wright pipette, sealed off, marked for identification, and incubated at 37.5°C. At the end of one hour the pipettes are examined and that highest dilution showing definite agglutination, if any, is taken as the index of agglutinins in that particular person or animal.

We now come to a phase of serum diagnosis, not for the purpose of recognizing disease, but for medicolegal work—I refer to the precipitin reaction. Von Tchistovitch, Bordet and Nolf, and Wassermann first studied the precipitin reaction, and Uhlenhut, Wassermann and Schuetze, and Stern called attention to its possible importance in forensic medicine. For a rabbit inoculated with gradually increased doses of human serum will manifest certain antibodies within its blood, and the serum of such an immunized rabbit, when brought in contact with human blood in solution, will cause the formation of a precipitate, thus establishing the identity and origin of a given specimen of blood. From all that I have said thus far, we see that the most important diagnostic value of blood serum is the recognition of, or rather the presumptive test for typhoid infection.

In 1906, a further step in the advancement of serum diagnosis was made by Wassermann, who applied the phenomenon of complement fixation to the diagnosis of syphilis, thus bringing a most valuable aid to the often difficult diagnosis of this dread disease and removing syphilology from mere guess work and empirical treatment into the realm of exact science. Briefly stated, the basis of the Wassermann reaction is as follows: Normal rabbit serum, when brought in contact with sheep blood corpuscles, will not affect these, but if we take a rabbit and immunize it by frequent and gradually increasing doses (injections) of washed sheep corpuscles, then the rabbit's serum acquires the property of dissolving sheep's blood corpuscles when brought in contact with them. It is also found that if we take this immune rabbit serum and heat it and then bring it into contact with sheep blood corpuscles no such action (hemolysis) takes place, the heat having destroyed some substance necessary to bring about that reaction. But, if to this inactivated rabbit serum a certain quantity of serum from a normal, nonimmunized rabbit is added, it again resumes its lytic properties toward sheep blood corpuscles. Thus it was established by numerous and very ingenious experiments that in order to produce hemolysis three factors are essential: 1. The blood corpuscles of the same species which were used for immunization, called *antigen;* 2, the specific immune bodies created or elaborated by the immunized animal in response to frequent and increasing injection of that particular antigen, called *amboceptor;* 3, the substance destroyed by heating the immune serum (thermolabile) and restored by the addition of normal, nonimmune serum, from an animal of the same species, called *complement.*

It was also found that: 1. Amboceptor will act only in the presence of its own specific antigen; 2, complement will not act on antigen except in the presence of specific amboceptor; 3, antigen, amboceptor, and complement must be present in definite proportions to produce hemolysis. We must remember that complement is nonspecific—that is, it will act on any amboceptor-antigen combination. If we understand these fundamental requirements and the

specificity of the amboceptor-antigen union, we can readily understand the rationale of the Wassermann reaction. In this reaction or test, syphilitic antigen is mixed with the patient's blood serum in definite proportions, and to this is added *just enough complement* to complete one lytic system. If the patient is suffering from a syphilitic infection, then his blood serum will contain syphilitic immune bodies (amboceptor), which will unite with the syphilitic antigen, and having done this it will be ready to unite and hold in fixed union the complement added. If we now add to this triumvirate of antigen-amboceptor-complement a definite amount of amboceptor which has specific affinity for sheep's blood corpuscles, so called antisheep amboceptor, and to this add the required amount of sheep's corpuscles (as antigen), no hemolysis of the latter will take place, because the complement having been bound previously by the syphilitic antigen-amboceptor radical, is no longer free to unite with and act upon the sheep's corpuscles by way of the antisheep amboceptor. But if the patient is not suffering from a syphilitic infection, then his serum does not contain the syphilitic amboceptor, hence cannot unite with the syphilitic antigen to bind the complement. The complement remaining unbound is therefore free to enter into union with the subsequently added antisheep amboceptor and sheep's corpuscles, and to exert its lytic action upon these corpuscles, producing hemolysis. In the first instance we have no hemolysis, indicating the presence of luetic amboceptor in the patient's blood serum, and we call this a positive Wassermann reaction, or a positive complement fixation. In the second instance we have hemolysis of the sheep corpuscles, indicating an absence of luetic amboceptor in the patient's blood—a negative Wassermann.

This principle of complement fixation by union or sensitization of amboceptor by antigen was further elaborated by M'Donagh and Klein in their application to the diagnosis of gonococcus infection. They write: "The great advance in the diagnosis and treatment of syphilis from the use of Wassermann's reaction led us to make investigations to see whether similar application of the complement fixation method could be made to gonorrhea." Their work, as we know, was crowned with deserved success.

Another chapter was recently added to serum diagnosis by Abderhalden. He advanced the theory that digestion consists of a disintegration process of food of a foreign species into many kinds of *Bausteine*, thus preventing substances foreign to the blood from entering the general circulation, while those native to the blood do enter. When, however, substances normally foreign to the blood do enter the general circulation, then anaphylaxis occurs and these substances are reduced by the blood, that is, they are split up by ferments which were manufactured or elaborated by the blood in response to the stimulation by these blood-foreign substances—as it were, antibodies to the antigenic activity of these blood-foreign substances. If, then, as was proved by Schmorl, Veit, and Weichardt, the chorionic epithelium enters the circulation during pregnancy, thus bringing into the circulating blood a species of foreign substance, and if chorionic villi are present in the fertilized ovum during the first month of pregnancy, as was proved by Peters, Strahl and Beneke, and Brice and Teacher, then it was reasonable to assume that the blood of the pregnant woman would show the presence of ferments which are capable of exerting their specific proteolytic action upon placental tissue during the first month of pregnancy or soon thereafter.

Abderhalden's experiments carried out with that point in view eventually led him to the following conclusions: 1. If serum from a pregnant woman is mixed with placental peptone in 0.9 per cent. saline solution and placed in a polariscope, and the readings taken then and again at intervals of two and four hours for a period of forty-eight hours, then a change in the angle of rotation is noticed, indicating that the pregnant serum contained certain ferments having a specific action on placental peptone. 2. Coagulated placental albumin, entirely freed from blood and soluble proteins, is not dialyzable, that means, it will not pass through an animal membrane. If, however, this nondialyzable coagulated placental albumin is brought in contact for a sufficient length of time (eighteen hours) at the proper temperature (37°C.) with hemoglobin-free serum from a pregnant woman, then the placental albumin is acted upon by ferments contained in that serum, it is digested, broken down into less complex molecules, and becomes dialyzable. This can be proved by applying the biuret test to the dialysate, or better still the so called ninhydrin test. Ninhydrin is triketohydrindenehydrate, occurring in the form of colorless crystals. It reacts to peptones as well as to alpha aminoacids, and is therefore more delicate than and preferable to the biuret test, which reacts only to peptone, because, as dialyzation proceeds, the newly formed peptones are rapidly converted into alpha aminoacids, in which case the biuret test would be negative with a positive serum.

The technic of the test is as follows: One gram of properly prepared coagulated placental albumen, tested for nondialyzable products, is placed in a dialyzer with 1.5 grams of the suspected serum. The dialyzer is set in container having exactly twenty c. c. freshly distilled water. Toluol is added to dialyzer and container to prevent putrefaction. The container is then plugged with cotton and incubated at 37°C. for eighteen hours. At the end of that period, exactly ten c. c. of dialyzate is mixed with one c. c. of a 0.2 per cent. aqueous solution of ninhydrin, quickly boiled for exactly one minute from the time bubbling begins, and then set aside. If, after thirty minutes there is no change in color to a pale blue or purple, then the reaction is considered negative; if a change takes place, then we have a case of pregnancy to deal with. Proper controls must be made, as in all serum tests.

Jellinghaus and Losee report what is perhaps the largest number of cases tested by the Abderhalden method, those of 563 different individuals, with most remarkably uniform results. Working on the principle of specific enzymes in the blood, Fauser, of Stuttgart, has applied this test in certain diseased conditions of the central nervous system and recently reported the following results. Sixteen tests were

made. In no case did the investigator know the patient's history or the clinical diagnosis.

Case	Sex		Cortex	Testicle	Thyroid	Ovary	Kidney
1	M.	Progressive paralysis	—	-			-
2	M.	Hypomania					
3	M.	Dementia præcox		-			
4	M.	Dementia præcox		-	-		
5	M.	Dementia præcox		-	-		
6	M.	Dementia præcox		-			
7	F.	Dementia præcox				+	
8	F.	Dementia præcox				+	
9	F.	Manic depressive insanity				- -	
10	F.	Manic depressive insanity					
11	F.	Fear psychosis				- -	
12	F.	Dementia præcox			-	-	—
13	F.	Manic depressive insanity				-	
14	F.	Simple depression					
15	F.	Dementia præcox				-	
16	F.	Manic depressive insanity.					-

We see from this report that in manic depressive insanity no reaction took place. In the cases of dementia præcox, however, Abderhalden obtained practically in all cases positive results with cortical antigens, and positive results with testicular antigen in the male and with ovarian antigen in the female. Some attempts have been made to utilize this test in the diagnosis of malignant neoplasms, and while the results thus far are by no means conclusive, still we are justified in expressing the hope that ere long carcinoma will not only prove itself amenable to early diagnosis, but, what is more, that such early diagnosis will lead to timely interference and the saving of human life.

Based on the work of Schmorl, Veit, and Weichardt and others as to absorption of chorionic villi and epithelia, and on Abderhalden's work on the presence in the blood of specific enzymes under these circumstances, I argued as follows with regards to vomiting of pregnancy: 1. This vomiting appears usually about the fourth week, or about the time when absorption of chorionic epithelia begins, and is due to the inability of the blood to assimilate this species of foreign substance. 2. The vomiting generally terminates spontaneously between the second and third month of pregnancy, or about the time the best and most positive Abderhalden reaction is obtained with the serum from a pregnant woman, when a large amount of proteolytic specific enzymes have been elaborated to break down the complex protein of the chorionic epithelia into simple blood-assimilable proteins or into aminoacids. 3. Occasionally this vomiting does not cease spontaneously or reappears and, persisting, produces what we term the pernicious vomiting of pregnancy. This then may be due to either excessive absorption of chorionic epithelia, or to failure on the part of the woman's protective mechanism to elaborate a sufficient amount of proteolytic enzymes to break down these complex protein molecules, or to a combination of these two factors, overabsorption and underproduction. If then, I could prove first that chorionic epithelium, injected into a suitable animal, produces a condition similar to that of the toxemia of pregnancy, secondly if I could protect that animal or a similar animal by introduction of pregnant (immune) serums, and, lastly, if I could immunize a suitable animal by gradually increased doses of chorionic epithelia, with or without combination with specific serums, then I should have established my contention and we could possibly utilize this in the treatment, prophylactic and therapeutic, of the pernicious vomiting (toxemic) of pregnancy. Experiments with that end in view have been made by me, and while my results are by no means definitely conclusive, still I feel justified, from the data obtained, in proceeding with this work, and hope at some future time to be able to report more in detail on this part of my work.

In conclusion, I wish to express my sincere thanks to my friend and teacher, Dr. C. Z. Garside, whose kindly advice has been of great assistance to me in the preparation of this paper and to whose patient and thorough teaching I owe what little I know about bacteriology and serology.

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202 WEST 107TH STREET.

HEREDITY IN EXOPHTHALMIC GOITRE.*

Its Influence as a Predisposing Factor in the Etiology.

By MORRIS I. MOSS, M. D.,

Philadelphia,

Chief Assistant, Outpatient Medical Department, Mt. Sinai Hospital.

In presenting this subject of hereditary influence in the causation of exophthalmic goitre, it is not my purpose to review such facts as have already been studied and are known to the profession. I merely wish to indicate a few points which deserve consideration in order to throw some light on the etiology of this important disease.

Heredity is a rare factor, but its influence cannot be denied. Observers have cited numerous cases where several members of the same family

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have been affected; and the disease has even been observed in three successive generations. Curtin, in the *International Clinics*, VI, 4, relates a case of exophthalmic goitre where the paternal grandfather, when thirty-five years of age, was overworked at a fire and experienced severe shock which was followed by the development of a goitre, rapid and intermittent pulse, and exophthalmos. The father of this patient had a slight enlargement of the right lobe of the thyroid, and a maternal aunt, when aged twenty-seven years, also manifested an exophthalmos of both eyes, rapid pulse, and other symptoms of the disease.

A second case reported by Curtin is that of a physician who was permanently invalided before the birth of his two daughters, having contracted tuberculosis, and both girls had Graves's disease; one died at the age of twenty years and the other at thirteen.

Oesterreicher (*Thèse Déjérine*, 1886) reported a case of a mother suffering with hysteria who had ten children; eight had Graves's disease, and of five grandchildren, three had the same, one had hysteria, and one epilepsy. Being regarded as a pure neurosis by many authors, and, on account of its special frequency among neurotic families, it is obvious that, as in many other nervous diseases, heredity plays a great part in its etiology.

Dr. Charles Dana, in his extensive work upon the subject, states that Basedow's disease is not hereditary except in certain families where there is a tendency to goitre. He also asserted that several members of a family may show different symptoms of increased thyroid secretion, with but one of them, perhaps, evolving an actual Graves's disease.

It has been shown experimentally that thyroidism may manifest itself in the production of any chracteristic symptom or group of symptoms of Basedow's disease, namely, exophthalmos, goitre, marked emaciation, sweating, rapid pulse, tremors, etc. Curtin thought that heredity was a prime factor; the case that I wish to report, well illustrates this:

CASE. A. C., aged eleven years, of Russian birth, residing in Sheffield, Pa., was referred to my clinic December 29, 1913, where he sought treatment for an inguinal hernia and also gave the following symptoms: Occipital headache, abdominal pains, occasional rise of temperature, difficulty of mental concentration, extreme irritability of temper, constipation, dry and unproductive cough, flushing of body and face, attacks of vertigo, and twitching of the voluntary muscles during sleep. His mother gave a history that four years before, for a period of one year, he lost entire control of his sphincters and would empty his bowels and bladder involuntarily.

Family history. Father, thirty-seven years of age, in good health until recently when he sustained a Pott's fracture. Mother, thirty-four years of age, suffering with a tachycardia, 124 a minute when accompanying patient, tremors of both hands, and exophthalmos, but no enlargement of thyroid. Two sisters, one five years old in good health, the other four years old suffering with a slight exophthalmos and a diarrhea since birth; otherwise, family history negative. Child had been going to school for almost six years, but made no progress, and was still in the first grade; mentally deficient, extremely irritable, inclined to be active but very careless, and had a tendency to drop objects held in hand.

Physical examination revealed a normal size head. Eyes showed exophthalmos; Graefe's sign, lagging behind of upper eyelid, and Stellwag's sign, increase in the width of the palpebral fissure, were both present. Face flushed, otherwise normal, conjunctivæ and other mucous membranes normal, enlarged adenoids in nose, mouth normal, slight caries of teeth, gums normal, tongue heavily furred, tonsils hypertrophied, but not inflamed. Enlargement of both lobes of thyroid. Chest, slightly emaciated, but symmetrical. Expansion equal on both sides. Lungs showed area of impaired resonance with few crepitant and subcrepitant rales over the upper lobe of the right lung, posteriorly, with prolonged expiration particularly over that area. Few small moist rales scattered over bases of both lungs. Heart normal as to position and size, sounds rapid but strong, no thrills or murmurs could be detected. Abdomen slightly distended with gas. Liver enlarged to one finger's breadth below costal margin. No tenderness or rigidity could be elicited anywhere. Spleen and kidneys not palpable. Extremities normal. No edema present. Patellar reflex slightly exaggerated. Other reflexes normal. Weight, 72 pounds; height, 4 feet, 6 inches; temperature, 99.4° F.; pulse, 118; respiration, 20 a minute. Urine negative. No sputum could be obtained for examination. Von Pirquet tuberculin test negative.

Considering the history given by the patient plus the physical findings, it resolves itself to an undoubted case of Graves's disease of hereditary origin. It is an admitted fact that the rapid pulse, exophthalmos, and nervous symptoms precede the development of the goitre. The mother of this patient suffers with all of these symptoms and the younger sister with a few of them.

The so called prethyroid period, described by many authors, consisting of palpitation, headaches, tendency to perspire, etc., is well illustrated in the history given by the little patient. The slow and progressive characteristics of the disease, together with the nervous, mental, and gastrointestinal disturbances, and finally the appearance of the cardinal symptoms of goitre, exophthalmos, tachycardia, and tremors—all emphasize the importance of its early recognition.

The modern view is that exophthalmic goitre is a form of toxemia. This toxemia is due to some nervous affection which brings about some glandular disturbance. In Graves's disease, as in the many other nervous diseases, heredity plays an important role, for the disease can be traced from generation to generation.

1304 SOUTH FIFTH STREET.

A SPECIAL BURETTE FOR USE IN THE RIDEAL-WALKER TEST.

BY HERMANN W. MAHR, B. A.,
New York.

In carrying out the Rideal-Walker test for disinfectants in accordance with the approved directions of its authors,[1] one of the pieces of apparatus required is a special dropping pipette. This pipette is standardized to deliver drops of 0.1 c. c. each and employed to measure out 0.5 c. c. of Bacillus typhosus test culture into each of five medication tubes.

The pipette has been found to give good results, and can be manipulated with great success by workers experienced in handling poisonous and dangerous fluids in pipettes. To those who are somewhat inexperienced, however, in the management of dangerous liquids, it may appear that thirty seconds is not sufficient time in which to fill the pipette and inoculate a tube, or that the former operation is liable to result in the drawing of some

[1] Rideal and Walker, [illegible]

of the culture into the mouth. Beginners will find the use of a small special burette a decided aid in expediting the carrying out of the test and of avoiding the possible danger of drawing the culture into the mouth.

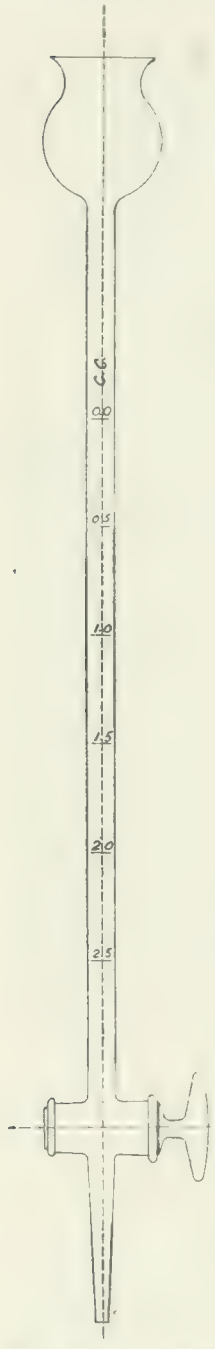


Fig. Burette for Rideal-Walker test.

This form of burette shown in the figure, differs from the ordinary burette in having a thistle top to facilitate the transfer of the test culture. It has a capacity of 2.5 c. c. and is calibrated in 0.5 c. c. The hole through the stopcock is made quite large so that the flow of the culture from the burette may not be unduly retarded by the action of capillarity and the friction arising from the narrow bore of the apparatus.

To prepare for sterilization, the thistle tube of the burette is stopped with cotton wool and its lower end pushed through the plug of a small, tightly plugged test tube. When used in the test, the apparatus is supported so that the end is a convenient distance above the table. A shallow dish filled with a good disinfectant should be placed beneath it to catch possible droppings of the culture. The burette is filled nearly to the thistle top with the test culture, and drops of the latter adhering to the mouth of the culture tube are caught on the end of the cotton plug. The stopcock is then opened and broth culture run into the plugged test tube until the culture stands at the zero mark and the air in the lower part of the burette is displaced by liquid. The test tube is then removed and placed in a receptacle for sterilization. Everything is now in readiness for the inoculation of the medication tubes, which may be safely, exactly, and quickly accomplished.

As suggested by the authors of the test, "to insure even distribution of the bacilli in the broth culture, and to avoid the necessity of filtration, the culture tube should be shaken and allowed to rest for half an hour before it is finally removed from the incubator."

Dr. Ainslie Walker, joint author of the Rideal-Walker test, recommends the use of this burette where any difficulty is experienced in manipulating the dropping pipette.

Laboratory, Board of Estimate and Apportionment, New York.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXLIII.—How do you treat gallstone colic? (Closed.)

CXLIV.—How do you treat diphtheria? (Answers due not later than March 16, 1914.)

CXLV.—How do you treat alcoholic cirrhosis of the liver? (Answers due not later than April 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED) *that the answers be short, if practicable no answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The Prize of $25 for the best essay submitted in answer to Question CXLII was awarded to Dr. E. S. McIlvain, of Nashville, Tenn., whose article appears below:

PRIZE QUESTION NO. CXLII.

THE TREATMENT OF CONSTIPATION.

By E. S. McIlvain, M. D.,
Nashville, Tenn.

The treatment of chronic constipation should consist of: 1. The abandonment of all sedentary habits, a moderate amount of exercise in the open air and the establishment of the habit or daily attempt of normal bowel evacuation. 2. The selection of a proper diet. 3. The judicious use of a few drugs.

For those who lead sedentary lives and are engaged in indoor occupations, special open air exercises, morning and evening, sufficient to secure full oxygenation and decarbonization of the blood, such as walking, riding on horseback, rowing, swimming, etc., should be prescribed; also in obesity, and in women after frequent pregnancies, special exercises and daily massage, especially over the course of the large intestine, from right to left, beginning at the cecum and following up the ascending colon, the transverse colon, and the descending colon, in the order named. This massage can be accomplished by kneading with the fingers, or by rolling a five or six pound weight, such as a cannon ball, along the course mentioned, the patient being in the recumbent posture. Electricity applied over the same area, in some cases does good in toning up the weak and lax abdominal muscles.

A common cause of constipation is dilatation of the large intestine, with atony. The lower part of this organ, known as the sigmoid flexure, is especially intended as a receptacle for the feces; the rectum, for the most part, being empty during the intervals of defecation. The passage of a small amount of dejecta from the sigmoid into the rectum, in the vicinity of the sphincter, sets up a slight irritation, which by reflex action produces the phe-

nomenon of defecation. Now, if this call of nature is not heeded, or is habitually neglected, the sensibility of the part is blunted so that a great amount of fecal matter accumulates in the bowel, dilating it, and further obtunding the sensibility so that a vicious circle is established, increasing the evil.

From the atony, just described, we find various degrees up to paralysis of the peripheral nerve endings in the intestine, and of the centres in the cord controlling peristalsis and defecation. This condition of atony may be confined to the unstriped muscle of the intestine, or may affect the voluntary muscles of the abdomen as well, which play an important part in the function of bowel evacuation.

Now, in treating most cases of constipation, especially those in which the foregoing conditions obtain, patients should be instructed to select a definite hour each day (preferably in the morning, right after breakfast) in which they can devote at least fifteen minutes to securing a proper evacuation; the attempt to be made daily, whether the desire is felt or not. The closet should be made as comfortable as possible, especially as concerns temperature and accessibility. The seat should not be too high, so patients can as nearly as possible assume a squatting posture, thus flexing the thighs on the abdomen and securing a mechanical aid to the abdominal muscles in the part they perform in the act. They should also be instructed to wait a few minutes after a stool has occurred to see that no further amount of fecal matter finds its way into the rectum, to be left there, as this will obtund the sensibility of the mucous membrane, and help to produce the condition which we are trying to eliminate. The call to defecate, no matter when it occurs, should never for a moment be neglected.

Habitual constipation is a condition very often associated with general neurasthenia, and in these cases, as a rule, neurasthenia is the primary disease and the sluggish bowel is a secondary condition; however, in many instances the two states act in a vicious circle, each sustaining and aggravating the other. A very essential factor is the hypochondriacal tendency of the patient. He ascribes an excessive importance to irregularities of the bowel, and regards every slight disturbance as one of extreme gravity. Even when the movements are sufficient, he cannot free himself from the apprehension that they are not really adequate. He fears to eat hearty food and takes little nourishment, except of a bland character, consequently the excreta are scanty. In cases of this type the first rule is to treat the patient's mental condition, and try to divert his thoughts from himself, and convince him that his apprehensions are unfounded.

Diet in all classes of constipation is an important factor in its treatment. However, as a rule, that most suited for each individual case is determined only by repeated trials. It should not be too bland or concentrated, as the residue will not be of sufficient quantity for the intestine to act upon and promote its own peristalsis. A coarse diet is not always the most suitable, for in those with susceptible stomachs and for those in whom spastic conditions of the intestines exist, a light diet is indicated.

Fruits, as a rule, should be prescribed; apples, oranges, pears, etc., eaten raw are relished, and are beneficial; an orange or pear taken immediately on rising will, in some instances, act as a laxative, also apples eaten at bedtime. Fruits with small seeds, as raisins, figs, tomatoes, berries, etc., will, in many cases, act as a laxative by increasing peristalsis. Stewed berries, apples, and prunes are also good. Green vegetables, in most cases, should be freely eaten, as they leave considerable residue. Of the different breads, brown bread, corn bread, rye bread, and breads made from unbolted flower are the best. Biscuit, unless made from graham flour, should not, as a rule, be allowed. Large quantities of meats, especially of the lean variety, should be prohibited. Steaks, if taken at all, should not be fried, but broiled and served rare. The taking of considerable quantities of water should be encouraged, especially a glassful taken on an empty stomach before breakfast; sometimes a glass of hot water, sipped while dressing in the morning, is better than the same taken cold. The taking of too much liquids during a meal should be avoided.

The medicinal treatment of constipation requires caution. Probably one of the most frequent causes of constipation is the indiscriminate use of cathartics. Through a mistaken notion of what is needed enormous quantities of this class of drugs are consumed, chiefly of the proprietary order, and no small proportion of the patients soon arrive at that state, where nothing but a repetition of these drastic purges will procure an evacuation. The use of cathartics should be avoided as far as possible. Purgatives promote increased secretion and excite excessive peristalsis, by which the intestine is evacuated, but leave the natural function of the gut in an exhausted condition, consequently they afford only temporary relief; then, too, in most cases, the efficiency of the drug gradually fails and the patient is forced to take a more powerful remedy or increase the dose in order to get any effect. If this class of drugs is used, it should be at the beginning of treatment or from time to time until the regime of daily exercise, diet, and habit can be established.

The drugs most used should be the milder, saline laxatives, as senna, the compound licorice powder, magnesium citrate, magnesium sulphate, etc. Probably one of the best drugs for the treatment of constipation is aloes, as it acts specially on the lower bowel and very little upon the secretions; then, too, it does not have to be increased in dose to maintain its effect. It should be given in small doses (gr. ⅙ to ⅓) in pill, two pills to be taken two or three times daily. When the desired effect is obtained, one pill can be dropped at a time till the actions are natural. The constipation of hypochondriasis and melancholia is very often overcome by the use of this agent. Congestion of the pelvic viscera and hemorrhoids are contraindications to the use of aloes. Another drug of this class is cascara sagrada, the solid extract and the fluid extract of which are both useful in the treatment of chronic constipation of the functional order. In cases caused by atony, the restoration of peristalsis can often be accomplished by a pill or capsule, each night, containing one third grain of extract of nux vomica and one grain each of the extracts of cascara sagrada. Another good agent in the treatment of constipation of

the atonic type, is a pill containing a combination of aloin, belladonna, and strychnine.

The saline cathartics, chief of which are magnesium sulphate, magnesium carbonate, magnesium citrate, sodium sulphate, etc., are indicated at times, but the too frequent use of them tends to leave both the muscular and glandular elements of the bowel in an exhausted condition. Also, under this class of cathartics come all the mineral waters, which contain, in different proportions, these same ingredients. Another agent which is recently being used in the treatment of chronic constipation, but one in which the writer has had but very little experience, is mineral oil, given in tablespoonful doses. The advocates of this remedy are claiming a great deal for it. It is supposed to act mechanically by lubricating the intestine and softening hard masses of feces; it is said that there is absolutely no absorption of the agent and that the full dose may be recovered from the stool.

Enemata of plain water, and those containing different ingredients, as soap, common table salt, castor oil, olive oil, glycerin, etc., are frequently used and are beneficial. The disadvantages are that ultimately small quantities do not suffice, and when larger amounts are continually used the bowel may become overdistended and more harm than good done; also, a catarrh of the mucous membrane of the rectum may be produced.

For the constipation due to spastic contraction of the colon, hydrotherapy, belladonna, and other sedatives are indicated. Hot compresses applied to the abdomen and changed frequently are often of value.

The constipation of infants is best overcome by giving plenty of fresh air, sunshine, and proper food. A rectal enema of warm water containing a little table salt or glycerin, given at the same time each day, will relieve the bowel and help to train to regular habits. The introduction into the rectum of a piece of soap, whittled into a conical shape, will have the same effect. It is the duty of the physician frequently to break up and inspect the stools of infants, and even sometimes to subject them to chemical analysis, to ascertain just what elements are being assimilated. In the case of nursing infants, too low a proteid percentage tends to constipation, and a too high one to looseness of the bowels and colic. These conditions can best be met by regulating the diet of the mother. Good results often follow in the case of breast fed infants who are constipated by giving them a little cream before each nursing. Artificially fed children, especially those fed on condensed milk, are often constipated, and the addition of a teaspoonful of cream to each teaspoonful of condensed milk will frequently obviate the condition. Massage to the abdomen is another valuable adjunct to other forms of treatment.

Finally, to sum up the treatment of chronic constipation, it is difficult and demands patience and professional tact. In the treatment, each individual patient is more or less a problem within himself, and in few other maladies does the personal equation play a more important part. It goes without saying, that the first step in the treatment of this condition should be a careful examination to discover the causal factors and remove them, and then place the patient upon a strict regimen as to habit, exercise, and diet. Probably the physician who has the most success in relieving this condition will be the one who can best train his patient to help himself.

Dr. John P. Chapman, of Philadelphia, writes:

The great majority of cases of chronic constipation which confront the ordinary practitioner will be found to be due to

1. Bad habits; 2, neurasthenia; 3, prolonged use of laxatives; 4, the primary abnormality of the intestines; 5, secondary to some other pathological condition. Of these, the most important and the most common is the first.

Success requires the intelligent cooperation of physician and patient. A few simple instructions on the part of the former to a patient who knows little of the function of the bowel, or, in fact, what characterizes the normal stool, will often bring about the greatest results.

The following outline is based on a combination of the psychic method advocated by Dubois, and the dietetic, hygienic, and medical measures at our disposal. Treatment begins in the early hours of the morning, as that is the time most convenient to our patients and because normally during the night the slow movement of the intestines has brought to the rectum all the waste products of our food. This constitutes the first of a series of stimuli to defecation. The act of waking itself constitutes the second stimulus. The patient is directed to concentrate his mind on the act, voluntary muscular movements are brought into play by stretching, deep breathing exercises, and certain gymnastics, such as leg movements, trunk movements, and head and leg exercises by which the muscles of the abdominal walls are brought into play. The act of getting up with the movements of the body which are caused by one's toilet are utilized. Depending upon the disposition and constitution of the patient, baths of various forms are advised, a cold plunge to the robust, the cold sponge or the cold sitz bath. The water should be at a temperature of 54° or 57° F. and the patient is directed to stay in five or ten minutes with a cold compress to the head, and to rub the abdomen with his hands; a glass of cold water, or in some cases a glass of warm water, is taken as soon as the patient comes out of a bath. Entering a stomach which has been empty since the evening before, the water stimulates the movement of the stomach and the contraction extends throughout the intestines. This constitutes a fourth stimulus. Next comes a short walk in the open air, followed by breakfast. This should be hearty and consist of bread and butter, particularly of whole wheat or graham bread, orange or grape fruit, oatmeal or cereal of some kind, and eggs or chops. If the patient is a smoker who has felt the good effects of a cigarette, he is permitted to use it. At this point, one must establish the formation of the habit of going at a fixed hour, by prescribing regular training. Let the patient go to the toilet one hour after the beginning of his breakfast, and you will thus have caused six successive invitations to act upon the intestines, any one of which would have been enough for a subject who is not constipated; but a regular succession can alone overcome the intes-

tinal apathy of your patient. If it becomes necessary to resort to colonic irrigation, it is at this time it should be used. Vinegar enemata (water and vinegar in equal parts), soap enemata, five drams of green soap dissolved in six ounces of water; salt solutions; glycerin in small doses one to five grams, or a glycerin suppository may be used.

Oil enemata are highly recommended; 400 or 500 c. c. of pure olive or cottonseed oil are injected under low pressure by means of an irrigator connected by a rubber tube with a hard rubber cannula. As it generally takes an entire day for such enemata to be entirely eliminated, they should not be used oftener than once a week.

Rectal faradization may be used, or in cases of feces impacted in the rectum, removal may be brought about manually or by the Ebstein method.

We now come to the active daily life of the patient. During the morning hours, walking and horseback riding are advised; deep breathing exercises while at business, with the drinking of plenty of water, six or eight glasses daily. The diet of two principal meals must forbid all foods which delay intestinal activity and supply those that hasten it. Foods that leave a considerable residue in the intestines, such as cabbage, cucumbers, green salad, potatoes, peas, string beans, turnips, mushrooms, dumplings, and fruit, tend to stimulate intestinal peristalsis.

Cold or carbonated drinks are taken in the morning on an empty stomach, also raw and cooked fruits, sugar in the form of honey, marmalade and jellies, melons, plums, apples and figs. Oil, butter, and cream, owing to their fat content, act by lubricating the intestinal walls and facilitating intestinal movement. All foods which decrease the activity of the intestines, such as tea, cocoa, and chocolate, some cereal foods, such as sago and rice, must be forbidden.

Finally we come to the use of cathartics. It is necessary to find a cathartic most suitable to the patient, remembering that it should not be used oftener than necessary and in decreasing doses. Cascara sagrada in the form of fluid extract taken alone, five to thirty drops before each meal, or at night with the syrup of orange peel, one dram of each, is efficacious. Dry extract of cascara sagrada with rhubarb will also be found useful:

℞ Fluidextract cascara sagrada..... ℥ss
Mist. Rhei et sodæ..... ℥j.
M. Sig.: One teaspoonful three times a day before meals.

Podophyllin in doses up to three quarters of a grain, is useful; it usually takes about twelve hours to produce an effect. Castor oil stands half way between those cathartics which can be used every day and those that cannot. It may be given in the form of gelatin capsules, or as an emulsion. The simple aloes, strychnine, and belladonna pills will find many advocates. Saline cathartics, mineral waters, or small doses of calomel may also be used.

Such treatment will usually suffice in overcoming cases of chronic constipation ordinarily seen in daily practice. In certain forms, due to spastic contraction of the intestines, seen in lead poisoning, diseases of the brain and cord, a movement may be induced by the use of opium or belladonna. When neurasthenia or hysteria is the etiological factor, rest, change, seashore and mountain air, hydrotherapy, such as tepid douches on the abdomen, sitz baths or hot applications will be found useful. It is in this conjunction that simple spraying of the anterior of the abdominal wall with ether has brought about some wonderful results in cases of long standing.

In cases of ptosis of the colon, the treatment is to bring about fattening of the patient in order to bring the ptosed colon to its proper position, or in case this fails, operation is advised.

(*To be continued.*)

Therapeutic Notes.

Emetine in the Treatment of Intestinal Hemorrhage.—Edlhem, in *Bulletins et mémoires de la Société médicale des Hôpitaux de Paris*, for June 20, 1913, reports two cases of intestinal hemorrhage in which the ability of emetine was distinctly shown. The first was that of a man suffering from hyperchlorhydria and mucomembranous enterocolitis, and presenting no signs of intestinal neoplasm or tuberculosis, who had had repeated attacks of pronounced hemorrhage, preceded by colicky pain, but unaccompanied by diarrhea. The last attack continued two months, without relief from a diet of milk and vegetables and the administration of calcium chloride, ergot, and opiates. After an initial injection of 0.04 gram, two thirds of a grain, of emetine, however, the hemorrhage at once began to lessen. Injections were repeated every two or three days, and although a particularly copious hemorrhage followed the fourth injection, the fifth injection, which proved to be the last, overcame the hemorrhage completely and permanently, notwithstanding the fact that in the succeeding six weeks the patient's dyspepsia continued.

In the second case, very similar to the first, hemorrhage ceased after a single injection of emetine. Two more injections were given in order to be certain that the result would be maintained.

Treatment of Acute Opium Poisoning.—Oppenheim, in *Progrès médical* for July 12, 1913, mentions, as the first measure to be employed in acute poisoning by opiates, the washing out of the stomach with water, or better, if it can be quickly obtained, a one to 2,000 solution of potassium permanganate. Emetics are useful only where lavage is not practicable:

I.

℞ Cupri sulphatis, ...gr. iij (0.2 gram);
Syrupi aurantii florum, ... ℥j (30 grams);
Aquæ destillatæ, q. s. ad..... ℥v (125 c. c.).
M. Sig.: One tablespoonful every ten minutes until emesis occurs.

II.

℞ Zinci sulphatis, ... gr. viss (0.5 gram);
Syrupi aurantii florum, ... ℥j (30 grams);
Aquæ destillatæ, q. s. ad.....℥v (150 c. c.).
M. Sig.: As in I.

Apomorphine and ipecac are to be avoided in this form of poisoning.

A purgative enema should be given immediately after the lavage, in order to insure rapid evacuation

of that part of the poison which has already passed into the intestine.

As an antidote, one half of a solution of 15 grains (one gram) of potassium (or sodium) permanganate in one pint (500 c.c.) of water may be given at once and the remainder half an hour later.

For purposes of stimulation atropine should no longer be used in opium poisoning, for in small doses it augments the cerebral hyperemia caused by opium and in large doses adds a fresh, prejudicial form of intoxication to that previously present. On the other hand, hypodermic injections of caffeine sufficient in number to introduce 6 to 12 grains (0.4 to 0.8 gm.) of the drug into the system are of great value:

℞ Caffeinæ, ...gr. xxxviii (2.5 grams);
Sodii benzoatis, ...gr. xliv (3.5 grams);
Aquæ destillatæ et sterilisatæ, q. s.ad..ʒiiss (10 c. c.).
M. Sig.: Inject 32 to 48 minims (2 to 3 c. c.) in divided doses.

Injections of camphor and ether in oil also constitute a valuable measure:

℞ Camphoræ, ...ʒi (4 grams);
Ætheris, ...ʒiv (12 grams);
Olei olivæ sterilisatæ, q. s. ad.....ʒv (20 c. c.).
M. Sig.: Inject 32 minims (2 c. c.) every hour.

Other measures of paramount importance in opium poisoning are: Keeping the patient awake; administration of coffee, with or without the addition of brandy, by mouth or rectum (supplementing the caffeine already referred to); repeated copious inhalations—or subcutaneous injections—of oxygen. Diuretic drinks may with advantage be given. Above all, the patient should be watched for some time after he has been aroused from his somnolent state, as coma may at any moment supervene.

Treatment of Hematogenous Infections of the Urinary Tract.—Thorkild Rovsing, at the International Medical Congress in London (*Revue clinique d'urologie*, November, 1913), stated that while nephrectomy is indicated in unilateral hematogenous renal tuberculosis, he considers operative intervention unnecessary in all other forms of hematogenous nephritis, except in rare instances. He never operates in colon bacillus infections of the kidney, unless they are complicated by calculous pyelonephritis, or pyelonephritis with hydronephrosis. His routine treatment in simple colon bacillus infections is to give four 15 grain (one gram) cachets of phenyl salicylate daily, have the patient drink 3 to 4 quarts (litres) of distilled water a day, and establish permanent bladder drainage with a retention catheter, to prevent all accumulation of urine in the bladder—with the opportunity consequently given for bacterial pullulation. These measures eradicate the bacilli completely in 50 per cent. of the cases, and would probably do so in more if the patients could be induced to remain in bed a longer time. The cases in which they fail are those with a tendency to chronicity of the nephritis and those in which there is a cause of constant reinfection of the kidney, e. g., cholecystitis, appendicitis, etc.

The retention catheter used should have sterilized in a formaldehyde solution, as this hardens it and permits of its being left in for 3 or 4 weeks without removal. As soon as the bacilli disappear from the urine the catheter should be removed, about one and two thirds ounce (50 grams) of a one per cent. solution of silver nitrate being left in the bladder to destroy any organisms hidden in the mucous folds.

In the cases in which the above mentioned measures fail Rovsing strongly recommends the use of an autogenous vaccine. From a culture of the organisms in the patient's urine he has prepared two emulsions containing, respectively, 100 and 500 million dead bacilli to the c. c. In adults he gives at two or three day intervals, first, a subcutaneous injection of 25 millions, next a second of 50 millions, then three or four of 100 millions, and finally 500 millions to the end of the treatment. In a few grave cases the dose was carried up to one billion. In children the initial dose is 10 millions, which the author only very cautiously increases later. Opsonic control is quite superfluous if the early doses are made small. In twenty grave cases, with repeated febrile exacerbations, chills, and serious general condition, the vaccine treatment brought about a cure after all other measures had proved valueless. Most of these cases were of colon bacillus infection of unknown origin, while in a few there was a sudden bilateral acute nephritis, with high degrees of albuminuria and pyuria, and in still others there had been recurring attacks of renal infection for years. Statistical comparison by Wulff of the effects of the phenyl salicylate, distilled water, and catheter treatment with those of vaccines, administered separately, showed that the vaccines are less efficient than the internal treatment in diminishing the bacilluria, but more efficient in overcoming the pyuria and albuminuria.

Treatment of Phthiriasis of the Scalp.—Brocq and Jacquet, in *Journal de médecine de Paris* for November 29, 1913, are credited with the statement that a 10 per cent. calomel ointment always gives good results in this condition. The head should be kept covered with an impermeable dressing for twenty-four hours after the application of the ointment. The latter should not be used where there are large ulcerated areas.

Another useful measure is to place over the affected region absorbent cotton moistened with the following solution:

℞ Tincturæ benzoini, ...mxl (3 grams);
Hydrargyri chloridi corrosivi,.....gr. xv (1 gram);
Acidi acetici glacialis, ...ʒi (30 grams);
Aquæ coloniensis, q. s. ad.....Oi (500 c. c.).
M. et ft. solutio.

Treatment of Chancroid.—K. Rühl, in *Deutsche medizinische Wochenschrift* for August 21, 1913, states that he has found useful in the treatment of chancroid the formula previously recommended by Chlumsk for infected wounds, furuncles, and felons, viz.:

℞ Phenolis puri, ...ʒi (30 grams);
Camphoræ, ...ʒii (60 grams);
Alcoholis, ...ʒiiiss (10 grams).
Misce.

After the affected area has been washed with a solution of mercury bichloride, gauze or cotton impregnated with the combination is applied. In deep chancroidal ulcerations Rühl leaves the phenol-camphor in contact for twenty hours.

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EDITORS
CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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ASPHYXIA.

The whole subject of asphyxia is a theme of many sided interest. It is interesting, for instance, to notice how the causes of asphyxia have multiplied. Modern life, that is, modern complexities of manufacture and travel, engines and motor cars, have produced some new causes of asphyxia, which are not too familiar to the medical man.

Another interesting circumstance is the celebrity of the names of many who have studied this subject. Orfila, Christison, and John Hunter published long ago some of its best essays, and the large works of Thiem, Sonnenschein, Schoenfeld, and Brouardel are well known, to which we will add two others more recent, the experimental investigations of Professor N. S. Delépine, and a clinical paper on the various kinds of asphyxia and their treatment, by Grober in *Deutsche medizinische Wochenschrift*, 52, 1913. In this enumeration, it would be most unjust to pass over a curious study of the psychoses produced by irrespirable gases, written by Yurman in *Rousski Vratch*, p. 556, 1910, and Clarke and West's studies of idiopathic cyanosis, or the absorption of sulphide of hydrogen by the intestines, called originally "hydrothionemia," by Emminghaus and Senator.

Such, if we accept the view of modern writers like Calmette and Delépine, is the present assumption of science that asphyxia must be treated, not statically as the condition, but dynamically as the cause. The question, What is asphyxia? gradually discloses the comprehensive meaning of the term. It starts with so many possibilities that to describe it in a general way is obviously inefficacious. It may mean the result of drowning, hanging, strangling, sunstroke, intoxication from within and from without, the breathing of gases, the air of manholes and drains, or the gases from the exhaust pipes of engines and motor cars. We write from personal experience of cases. Asphyxia is one of the great problems which most of us put aside until we are called upon to view a case. But there are two particular features of the subject which seem to us very clearly to point one or two necessary morals for this busy time. First, sewer air, which must be carefully distinguished from sewer gas, is defined as an accumulation of gases from pipes, decomposed organic matter, or air from workshops and laboratories. Delépine and his assistants, and before them Roscoe, Carnelley, and Haldane (*Proceedings of the Royal Society*, XLII, p. 394, 1887) all declared that sewer air is not injurious, at least immediately, and that it is not likely to contain bacteria unless contaminated by splashing. All this may be granted, but according to our own experience sewer air may become suddenly dangerous from proximity to, or connection with a defective drain, from the action of acids on sewage, invasion of gases from a manufactory or laboratory, and from dried sewage. The treatment, which Grober recommends in the paper cited, is in our judgment correct. It consists of the hypodermic injection of camphor, caffeine, and digitalis, strophanthus, artificial respiration, movements of the diaphragm, faradization of the phrenic nerve. It is a question whether oxygen or amyl nitrite or ammonia should be used. It is needless to say that the use of these agents requires nice judgment. Here we may point out, with Alessi, that sewer air lowers the resistance to disease, and we have seen, what Tamassia and Yurman observed, a neurosis and psychosis evolved in persons long exposed to evil effluents, and the first warning of a fit of asphyxia.

THE INTRAVENOUS INJECTION OF HYPERTONIC GLUCOSE SOLUTIONS.

Until recently, the administration of glucose has been restricted mainly to cases in which the introduction of sodium chloride is contraindicated by reason of the presence of a more or less marked chlorine retention at the time, and to cases where the high nutritive value of the sugar has seemed to indicate its use. In many instances, moreover, the

glucose has been given by the subcutaneous, intramuscular, or rectal route, and the solutions used have been isotonic with the body fluids or nearly so, i. e., of about five per cent. concentration. Fleig showed experimentally that intravenous injection of a concentrated, hypertonic (twenty-five to thirty-three per cent.) solution of glucose caused immediate and abundant diuresis without unfavorable effect, even where fifteen grams of glucose to the kilogram of animal had been administered, but the use of these concentrated solutions has but rarely been availed of in man, chiefly because of apprehension as to a possible hemolytic effect of the hypertonic solution. The recent experiments of E. Enriquez, of Paris (*Presse médicale,* February 14, 1914), seem, however, definitely to dispose of this apprehension, intravenous injections of a thirty per cent. solution, freshly sterilized in the autoclave and introduced at the rate of only 250 to 300 c. c. an hour, being perfectly borne, although the total amount injected daily was often one litre, administered in three fractions. Under these conditions the glucose is rapidly and completely changed to glycogen, and becomes stored in the liver and muscles, including the myocardium. The sugar of the blood rises only occasionally above three in 1,000—the maximal normal ratio—and the glucose passes into the urine only in small amount, four or five grams to the litre, during the first two hours following the infusion. This was found to hold true even in two cases of alcoholic cirrhosis of the liver with ascites, in which a more marked glycosuria might with reason have been expected. No hemolysis was ever observed.

The first case in which Enriquez attempted the hypertonic intravenous injection was one of grave bronchopneumonia in a man sixty-seven years old, with intense dyspnea, embryocardia, pulse rate 150, delirium, tracheal rales, and urinary output per diem reduced to 200 c. c. All ordinary measures having failed to stay the lethal tendency, two injections of 300 c. c. each of hypertonic glucose solution were slowly given. A few hours after the first injection diuresis set in, and by the next day the output had risen to 1,250 c. c. Further injections on the five succeeding days kept the output at about 1,000 c. c. daily, and meantime general improvement set in, the case ending in complete recovery. Since then the treatment has been carried out with favorable results in over fifty patients, some of whom received thirty or more of the intravenous injections. Included in the series were numerous cases of infectious disease in which oliguria and cardiac weakness were clearly overcome by the measure. A case of grave carbon monoxide intoxication terminated in recovery under subcutaneous injections of oxygen and daily intravenous infusions of hypertonic glucose solution for eight days. The high nutritive value of the solution—1,200 calories to the litre—led to its use in cases of inanition, resulting, e. g., from continuous severe dieting in patients with gastric ulcer and with appendicitis of subacute type. In such cases, moreover, the glucose can be of use as a preventive of the late untoward effects of general anesthesia. Even *after* anesthesia, especially when prolonged, the administration of hypertonic glucose solution is useful, as fluid is drawn from the body tissues and elimination of the toxic agent promoted. Finally, Enriquez finds the measure of decided value in diminished urinary flow due to cardiac weakness. Venesection followed by a glucose injection results in an "emergency diuresis," which will anticipate the effect of the ordinary cardiac tonics in this direction. Although in advanced chronic renal disease retention of nitrogenous wastes in the blood is not overcome by the measure, owing to the inability of the kidneys to react normally to the new physical conditions created by the glucose, a pronounced stimulating effect of the sugar on the heart is exerted, as is clearly manifest clinically in a rise of the arterial pressure. On the whole, the results obtained by Enriquez seem promising, and a report of the effects witnessed in further trials of hypertonic glucose solution will be awaited with interest.

PRECAUTIONS AGAINST PROSTATISM.

Prostatic enlargement seems to be one of the inevitable concomitants of old age, and the tiresome and dangerous catheter life was one of the sorrows of the old in the preaseptic days. Today prostatectomy often brings prompt relief to the victim and all fear of operation is dispelled by the fact that it may be done under spinal anesthesia. Surgery, however is a sign of weakness when done in cases where prophylaxis might have rendered interference unnecessary. We find, therefore, that Dr. René Le Fur, of the clinique Saint Luc, writing in the *Journal de médecine de Paris* for February 7th, is of the opinion that men of forty to fifty years of age should anticipate prostatism by certain hygienic and dietetic precautions; taken in time, the condition will never proceed so far as to demand operation.

It seems to us that Doctor Le Fur's régime would keep the patient fairly busy; it comprises daily frictions of the body, in the morning with a horsehair glove over the whole surface, but especially over the thighs, the hips, and the spinal column, the process lasting about ten minutes; in the evening, over the same regions with a sponge dipped in eau

de Cologne. General alkaline baths are advised, to last a half hour, twice, or at least once a week. In addition, hot sitz baths to last fifteen minutes, are to be taken on three evenings of each week. During the day the patient is to avoid prolonged sitting, particularly on cushioned seats; a cane seated chair is preferable and he must not sit longer than one hour at a time, getting up for a promenade about the room or office at regular intervals. Traveling, riding horse or bicycle, automobiling, are forbidden as likely to provoke congestion, even retention; and these are to be replaced by walking, for one hour in the morning and two hours in the afternoon.

The impending prostatic subject must sleep not over seven hours on a hard bed and lightly covered; no feather bed for him, but a mattress of horsehair or felt. A bolster should replace the pillows. The bladder should be carefully emptied before bedtime, and—this is important—the patient must instantly yield to the desire to pass water at any hour of the night. Otherwise he is liable to incur a dilatation of the bladder wall with subsequent urinary impotence. During the day it is advised to empty the bladder every three hours and never to permit the accumulation of over 300 grams of urine, even if the patient feels quite competent to hold 500. The bowels must be kept soluble, by laxatives, by enemata if necessary; if there is an obstinate constipation from intestinal atony, abdominal massage is advised.

Doctor Le Fur discusses the question of sexual intercourse as an important factor in the treatment of prostatism. He knows too many men who at the age of forty years abandon the pleasures of the marriage bed to give themselves up to good cheer at the table. Such a course leads to obesity, gout, rheumatism, constipation, and impotence. Regular sexual intercourse is prescribed along with self-restraint as to food. As to diet, the French therapeutist thinks that men are too easily alarmed at a trifle of albumin in the urine and proceed to starve themselves of protein foods quite needlessly; the lactovegetarian diet agrees with some people, but need not be adopted by all. It is wise, however, to avoid spirits, game, spiced dishes, rich pastry, an excess of meat. White wine is the best beverage, a sound Graves for example, diluted with three parts of water. A short walk after breakfast, a longer one after dinner are helpful. Physical culture in moderation is good, particularly exercises intended to strengthen the abdominal wall, the pelvis, and the thighs, and to improve circulation in the genitourinary apparatus; from a half hour to an hour a day is enough. It is needless, probably, to point out that all traces of a gonorrhea, urethritis, stricture, must be removed, and deep dilatation of the urethra together with massage of the prostate are excellent remedial measures.

We think that this summary of Doctor Le Fur's advice to those threatened with prostatitis in its chronic form, will show that it is scarcely adapted to the average American business man; what with the different kinds of baths, the total amount of walking, the physical culture, and the massage, to say nothing of the difficulty of choosing the proper articles of food in the usual kind of city lunchroom, the business man would probably consign the whole treatment to the uttermost limits of Hades. Yet how valuable such a regimen would be to the average overdriven, wrongfully fed, underexercised, and neurotic type so common in our large commercial houses, if it could be carried out, rigidly for six months or so, and in a modified form for all years after the fortieth; in such circumstances ours would be a happier nation.

ANTINARCOTIC LEGISLATION.

We have made some comment on the objectionable Boylan bill which has been introduced into the Legislature of the State of New York, to regulate the traffic in habit forming drugs. This measure was drawn, it will be recalled, by a layman who conducts a sanitarium for the treatment of patients addicted to the use of drugs, and who has secured a good deal of publicity in this inexpensive way. Fortunately, the Medical Society of the State of New York has pointed out the objection to this absurd measure, which has also been actively opposed by the New York State Pharmaceutical Association, and it is unlikely that the Boylan bill, or anything closely resembling it, will ever become law. There is no question, however, that some additional legislation will be introduced in the near future governing the traffic in narcotic drugs, for the general public is keenly alive to the evils incident to addiction. It behooves the physicians of the community to watch all such proposed legislation carefully, for some of the amateur legislators who are interested in this subject seem to lose sight of the prerogatives of the practitioner of medicine, and unless their attempts at legislation are controlled, physicians may find themselves seriously hampered in the discharge of their functions. One woman writer, indeed, of original mind suggests that physicians be inspected regularly to ascertain if they have become addicted to drugs, in which circumstance they would be debarred from practice. We may ask, somewhat as was once asked in a famous similar case, Who would inspect the inspectors?

THE WILL TO WORK.

There have been frequent demonstrations by the unemployed during the past weeks of severely cold, alternated with stormy weather, and men in mass meetings and processions have demanded in chorus the privilege to work. The usual custom among the well to do, in reply to such demand, is to pre-

sent the candidate with an axe or a shovel and request him to wend his way to the woodpile or the coalhole. If the applicant does not immediately shoulder the implement and, after a respectful "God bless you, sir!" hasten whistling to the task, he is put down as an impostor. This is hardly fair. Only a small minority among us are fitted for heavy manual labor under the most favorable circumstances, and a man who has been fed irregularly if at all for several days, is in particularly bad shape to undertake it. There are many responsible men of frail physique or of middle age or both, who are capable of first class clerical work, of salesmanship, of manifold jobs about an office or a house, who would be only too glad to utilize what abilities they possess at any reasonable remuneration. A man is not necessarily a humbug because he has been trained along nonphysical lines, especially in our remarkable schools in which the curriculum represents a survival of the middle ages, when nobody was schooled unless he was intended for a learned profession.

UNSUSPECTED SOURCES OF INFECTION.

Attention is called in an original communication in this issue to the carelessness of certain opticians in regard to the condition of their hands when fitting glasses, and the suggestion is made that washstands be placed near the tables where fitting is done, that tissue paper, easily destroyed afterward, be used to wipe lenses, and that other simple precautions be taken against infection. The public should be instructed to observe the precautions or lack of them taken by other persons whose hands come into direct contact with their bodies, manicures, barbers, Turkish bath attendants—although these last are likely *ex officio* to be immaculate—chiropodists, and the like, although none of these perhaps can accomplish the damage possible to a careless artisan working near the sensitive and susceptible mucous membrane of the eye.

News Items.

Harvey Society Lectures.—The next lecture in the series will be delivered on Saturday evening, March 14th, at the New York Academy of Medicine, by Professor W. S. Halsted, of Johns Hopkins University, on the Significance of the Thymus Gland in Graves's Disease.

Physical Examination of Inmates of the Municipal Lodging House.—The commissioner of charities of the city of New York has arranged to have a physical examination made of three thousand inmates of the municipal lodging house, and fifteen physicians have been engaged to carry on the work. It is hoped the results of these examinations will furnish valuable statistics as to the proportion of the inmates who are physically incapable of work.

To Regulate Retail Price of Proprietaries.—Congressman Herman A. Metz, president of Victor Koechl & Co., and formerly comptroller of the city of New York, has introduced a measure into Congress under which it will be lawful for manufacturers of proprietaries, trade marked articles or preparations, to control the price at which they will be sold at retail by filing with the United States Bureau of Corporations a schedule of the prices which shall be charged at wholesale and at retail. A similar measure has been introduced by Congressman Stevens.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, March 9th, Samaritan Hospital Medical Society; Tuesday, March 10th, Pediatric Society; Wednesday, March 11th, County Medical Society; Thursday, March 12th, Polyclinic Ophthalmic Society, Pathological Society; Friday, March 13th, Psychiatric Society, Northern Medical Association.

To Abolish the Dispensary Fee.—The question of abolishing the fee of ten cents almost universally charged by the public dispensaries in New York, was discussed at a conference held at the New York Academy of Medicine on Friday evening, February 27th. A bill has been introduced in the legislature providing for the abolition of the fee, and the conference was called by a committee of the State Board of Charities for the purpose of discussing it. It is said that the bill is opposed by all hospitals and many doctors.

A Dinner to Colonel Gorgas in London.—It is announced that the heads of the medical profession in London will pay a tribute to the achievements of Colonel Gorgas as chief of the sanitary work in connection with the Panama Canal on March 23d, when Sir Thomas Barlow, president of the Royal College of Physicians, will preside at a dinner in honor of Colonel Gorgas at the Savoy Hotel. Lord Bryce and Colonial Secretary Harcourt have accepted invitations to be present at the dinner, which, it is expected, will be a very notable professional gathering.

A Bureau of Public Health Education in the Department of Health.—Dr. S. S. Goldwater, commissioner of health of the city of New York, is planning to establish a bureau of public health education in the department of health. The head of the bureau will occupy the place in the service formerly filled by the general medical officer, Dr. Hermann M. Biggs, now State Commissioner of Health. If the Board of Estimate acts favorably on the new office, the head of the bureau will have to do largely with the campaign of public education through the medium of publicity, dissemination of literature, lectures, and exhibits.

Federation of State Medical Examining Boards of the United States.—At the second annual meeting of this organization, held in Chicago, on Wednesday, February 25th, the following officers were elected: President, Dr. Charles H. Cook, of Natick, Mass.; vice-president, Dr. T. A. McCann, president of the Ohio State Board of Health, Dayton; secretary and treasurer, Dr. Otto V. Huffman, of Albany, N. Y.; executive committee, Dr. John M. Baldy, of Philadelphia, Dr. Herbert Harlan, of Baltimore, and Dr. Walter L. Bierring, of Des Moines, Iowa. Next year's meeting of the federation will be held in Chicago.

Association of American Medical Colleges.—At the twenty-fourth annual meeting of this association, held in Chicago on Monday and Tuesday, February 23d and 24th, the following officers were elected: President, Dr. Isadore Dyer, of Tulane University, New Orleans, La.; vice-president, Dr. Charles R. Bardeen, of the University of Wisconsin, Madison; secretary and treasurer, Dr. Fred C. Zapffe, of Chicago, reelected; executive committee, two years, Dr. William J. Deans, of Sterling, Ohio, and Dr. Randolph Winslow, of the University of Maryland; one year, Dr. Egbert LeFevre, of the University and Bellevue Hospital Medical College, New York. Next year's meeting will be held in Chicago.

Tri-State Medical Association.—The sixteenth annual meeting of the Tri-State Medical Association of Virginia and the Carolinas was held in Wilmington, N. C., on Wednesday and Thursday, February 18th and 19th, under the presidency of Dr. Southgate Leigh, of Norfolk, Va. Officers were elected as follows: President, Dr. Edward C. Register, of Charlotte, N. C.; vice-president for Virginia, Dr. J. Allison Hodges, of Richmond; vice-president for North Carolina, Dr. Charles T. Harper, of Wilmington; vice-president for South Carolina, Dr. Frank H. McLeod, of Florence; secretary and treasurer, Dr. Rolfe E. Hughes, of Laurens, S. C.; members of the executive council, Dr. Southgate Leigh, of Norfolk, Va.; Dr. D. T. Tayloe, of Washington, N. C.; Dr. W. W. Fennell, of Rock Hill, S. C. Next year's meeting will be held in Greenville, S. C.

Illegal Practice of Medicine by Corporations.—The Medical Society of the County of New York has through its counsel brought charges against Morris Lederman, of the Standard Pharmacy Company, at Second Street and the Bowery, to the effect that he violated the State law prohibiting a corporation from practising medicine, and that he advertised that the services of a physician would be rendered free to purchasers of his proprietary remedies. It is understood that the case will be pressed to an early decision. It is asserted that the practice has become very common in certain sections of New York, and that it is followed by 400 drug stores in the city.

Prescription Required for Mercuric Chloride.—The Board of Health of the City of New York has adopted an ordinance amending the penal code by the introduction of a paragraph regulating the sale of bichloride of mercury tablets which is given below. This supersedes the ordinances heretofore adopted and goes into effect on March 1st. The revised ordinance reads as follows:

No person shall sell or offer for sale at retail, bichloride of mercury, otherwise known as corrosive sublimate, in the dry form except upon the prescription of a duly authorized registered physician or veterinary surgeon, and then only in tablets of a particularly distinctive form and color, labeled POISON upon each tablet, and dispensed in sealed glass containers conspicuously labeled with the word POISON in red letters.

This section does not apply to any preparation containing one-tenth of a grain or less of bichloride of mercury.

The Opening of the Institute for Medical Research.—The regents of the University of California and the directors of the George William Hooper Foundation have issued invitations to the opening ceremonies of the Institute for Medical Research, on Saturday afternoon, March 7th, at half past two o'clock, at the University of California Hospital, San Francisco. The Rev. C. S. S. Dutton, of the First Unitarian Church, will deliver the invocation, which will be followed by an address by the Hon. Curtis H. Lindley. Mr. Henry S. Pritchett, president of the Carnegie Foundation for the Advancement of Teaching, will deliver an address on the Value of Medical Research to a Great City, and Dr. Richard M. Pearce, of the University of Pennsylvania, will deliver an address on the Opportunity of the University in Medical Research. At the close of the ceremonies, a reception will be held to meet Mrs. George William Hooper.

Brooklyn Association of Outpatient Clinics.—At a meeting of delegates from the principal dispensaries of Brooklyn, held Thursday evening, February 26th, the Associated Outpatient Clinics of the Borough of Brooklyn was organized, with the following officers to serve for the first year: President, Mr. Charles F. Neergaard, of the Brooklyn City Dispensary; first vice-president, Dr. Louis C. Agar, of the Polhemus Clinic Dispensary; second vice-president, Mr. Eugene F. Barnes, of the Bushwick and Eastern District Brooklyn Dispensary; third vice-president, Dr. Robert J. Morrison, of the Williamsburgh Dispensary; secretary and treasurer, Dr. W. G. Nealley, of the Brooklyn Hospital Dispensary; executive committee, Father G. M. Metzger, of St. Catharine's Dispensary; Dr. A. S. Kavanagh, of the Methodist Episcopal Dispensary; Dr. Alexander Spingarn, of the Jewish Hospital Dispensary, and Frank Munson, of the Brooklyn Hospital Dispensary. The officers are also members of the executive committee. The principal address of the evening was delivered by Dr. J. Richard Kevin.

Coffin Shaped Poison Tablets.—A bill has been introduced in the House of Representatives by Congressman Browning under which it shall be unlawful to manufacture, dispense, sell, or distribute in the District of Columbia or in interstate commerce any tablet containing mercuric chloride, corrosive sublimate, in larger amounts than one eighth of a grain in each tablet, or any other poisonous tablet intended for external use, unless such tablet is made in the form or shape of a coffin, each bearing the word "poison" and a skull and crossbones design, and the bottle or other container bearing a red label stating the composition of the tablet and the word "poison" and a skull and crossbones design. It is understood that application has been made for a patent on this particular design and that this patent will be assigned, if granted, to the American Pharmaceutical Association, which in turn will permit the privilege of using it to any manufacturer. It is said that the application was made with a view to preventing any one manufacturer from attempting to monopolize the design. The bill further prohibits the introduction, from abroad or from one State into another, of poisonous tablets for external use, save under similar restrictions.

Pith of Progressive Literature.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT

Esophageal Dilatations and Diverticula.—Hugo Starck discusses the treatment of this condition, acute and chronic. Acute conditions commonly result from cardiospasm occasioned by hyperacidity, best relieved by bland diet, warm olive oil, and warm alkaline or muriatic spring waters, not charged with much carbonic acid. In other cases feeding with the stomach tube is followed by great relief. In chronic dilatation three chief indications are, to treat the accompanying esophagitis, reduce the dilatation, and dilate the accompanying stenosed cardiac orifice. The first is best accomplished by overcoming stasis of food. This can be done by a diet which offers little resistance and aiding by ingestion of large quantities of water. If any particles remain, they are best expelled by attempts at vomiting, or they must be removed by the stomach tube, which can also be used to introduce food. Local treatment consists of the application of silver nitrate in two per cent. strength to the inflamed areas or irrigation with two per cent. boric acid solution or alkaline waters. To overcome dilatation, measures which cause muscular contractions are very useful. The best is the electrical sound of Rosenheim. The use of esophageal bougies, armed with inflatable balloons, occasionally does away with the necessity of external surgical procedures. The author describes a bougie in which the end is filled with mercury so that the position of the balloon may be determined by the x ray.

Brophy's Treatment of Cleft Palate.—Ernst Kaerger reviews the operation in cases of cleft palate. He has carried out the preliminary suturing of the osseous system in fifty-six cases followed by secondary suture of the soft palate. The cases treated are first those of double harelip with palatal and maxillary deficiencies; secondly, unilateral harelip with maxillary and palatal deficiencies; and, thirdly, cleft of either the soft or hard palate with complete closure of the harelip.

Radioactivity in Treating Inoperable Carcinoma.—Rudolph Klotz maintains that the enormous expense involved in treating carcinoma with radium or radioactive substances limits this treatment to the very few. By sensitizing the tumor through injections of salts of heavy metals, chemotherapeutic, it is possible to destroy cancer cells with much smaller doses. Treatment consists of intravenous injection of electrocobalt, five c. c., followed by 400 to 500 radiations applied to the abdomen, dorsum, vulva, and vagina. Radiations should be applied during the following two days. After nine days another intravenous injection of electrocobalt, followed by vaginal treatment with radium, 800 to 1,000 milligrams an hour. After another nine days, that is, eighteen days after the last x ray treatment, the patient receives another intravenous injection of five c. c. of electrocobalt. If tolerated the dose may be increased to ten c. c. The urine should be examined for albumin and casts. If none are present, another x ray treatment of 400 to 450 radiations may be given. It is important that an injection of a chemotherapeutic substance precede the radiation.

Substitution of X Rays for Radioactive Substances in Deep Therapy.—Salzmann has investigated the different metals which give rise to secondary rays when acted upon by x rays. He found that metals with an atomic weight between 107 and 120, radiate the greatest amount of secondary rays, metals for the most part hard. Cadmium is the element most suitable for this purpose, and may be used as a substitute for radium in the treatment of deep lying tumors.

New Method of Examining Cerebrospinal Fluid.—St. Szécsi suggests the examination of cells found in the cerebrospinal fluid by means of the oxydase reaction. He has found that the cells present normally in the fluid are not hematogenic since they give a positive oxydase reaction. Lymphocytes present in certain inflammatory conditions of the meninges do not give a positive reaction, and therefore are properly derived from the blood elements as in syphilis. The method follows: The slide is fixed in formalin vapor for five minutes. It is then dried in air and immersed in a mixture of equal parts of two per cent. aqueous solution of betanaphthol sodium (microcidin, Merck), and one per cent. aqueous solution of dimethyl paraphenylendiaminhydrochloride. It is examined under water for the presence of blue granules.

January 1, 1914.

Diabetes and Surgery.—F. Kraus sums up the views that he has obtained from Naunyn, von Noorden, Minkowski, and Payr in regard to the question as to when surgical interference is indicated when the affection is due to or associated with diabetes.—Payr maintains that the only contraindication to operation is the associated presence of acetone and diacetic acid or a beginning coma. Aseptic wounds heal perfectly well if there are no arteriosclerotic changes, or if the recent operation has not been infected. Glycosuria should be reduced, if possible, previous to operation. Cosmetic and plastic operations should never be done. Chloroform is contraindicated as a narcotic and a local or spinal anesthesia used instead. In operations of the lower extremities an Esmarch bandage should not be used, but should be replaced by compression of the main bloodvessels and immediate stoppage of the hemorrhage. Suppurative and inflammatory processes in the diabetic should be operated in quickly, despite a high sugar content in the blood. In furunculosis a dietetic treatment often effects a cure. In dry gangrene a conservative method of treatment should be instituted. If glycemia is moderate, with absence of the ferric chloride reaction, dietetic treatment should be considered first. It is important to determine the presence of hyperglycemia, which, if glycosuria is absent, determines the degree of latent diabetes.—F. Kraus's opinion is that it is desirable to free the patient of sugar, if possible, previous to the operation. In case of danger it is better to operate immediately irrespective of the present character of the diabetes. The best indication of danger, relatively, is acidosis, in which case sodium bicarbonate should be used prophylactically by mouth or intravenously. It is not advisable to use it subcutaneously. The anesthesia is determined by the condition to be operated in. Lumbar and local anesthesia by no means prevents postoperative coma. Naunyn considers that two points should deter from operation, viz., marked glycosuria and acidosis. Aseptic operations, if urgent, may be permitted even in the presence of marked glycosuria. Postoperative coma should be treated as an acid coma. According to von Noorden there are six sources of danger: 1. Greater predisposition to infection; 2, lessened resistance of the tissues and lessened tendency to smooth healing of wounds; 3, arteriosclerotic changes in bloodvessels; 4, weakness of heart muscle, especially in juvenile diabetes; 5, danger of narcosis in the presence of acidosis; 6, tendency to secondary hemorrhage, especially to be considered in operations on the eye.

Action of Cumarin.—M. R. Bonsman has used cumarin in thirty cases and has come to the conclusion that its use intravenously in doses of 0.0005 gram to 0.001 every second day until about 0.0065 gram has been given, has a very good effect on the heart and diuresis. It cannot replace digitalis, although occasionally efficacious where digitalis has failed. It is not followed by untoward symptoms, has no cumulative action, and does not disturb sleep.

Intragastric Congo Thread Test.—Gottwald Schwarz has substituted a gelatin capsule filled with zirconium oxide for the lead ball employed by Friedrich. Where introduction of the stomach tube is contraindicated, this modification obviates inconvenience resulting from extraction of the lead ball. This test does not interfere with determination of free hydrochloric acid.

Complement Deviation in Tuberculosis.—J. D. Avidovits insists that in order to obtain complement fixation, using tuberculin as antigen, it is necessary to use activated serum. If serum is previously inactivated, the Bordet-Gengou phenomenon does not as a rule take place.

January 8, 1914.

Thrombosis.—Hugo Ribbert maintains that the chief underlying cause of thrombosis is to be found in changes of the inner surface of the bloodvessels. Thromboses produced experimentally disappear after a short lapse of time, and postoperative thrombotic processes which may prove a source of danger are due to the ability of the blood to coagulate more rapidly than normal.

"Auxoautolytic" Substances in the Serum of Pregnant Women and in Disease.—Hans Guggenheimer has investigated substances present in the serum of normal persons and patients affected with different diseases, which aid or inhibit the normal aseptic autolysis of organs. He found that the serum of patients suffering with lobar pneumonia and uremia aided materially the autolysis of human brain substance. Serum of patients in diabetic coma, and alcoholic delirium, Basedow's disease, as well as in those affected with serous effusions into the joints were found to contain substances which materially aided autolysis of rabbit's liver. Serum of pregnant women inhibited autolysis of rabbit's liver, but had a decided influence on the autolysis of human placenta.

Diagnosis of Carcinoma.—Eugen Weiss has attempted the diagnosis of ferments by an ingenious modification of the Abderhalden reaction. In normal individuals subcutaneous injection of gastric

mucosa extract is followed by the appearance of ferments which proteolize this substance. Injection of this extract in patients suffering from carcinoma of the stomach is not followed by the appearance of these ferments.

Culture of the Kala azar Bodies from Peripheral Blood.—Martin Mayer and Heinrich Werner succeeded in demonstrating the Leishman Donovan bodies in cultures made from blood of a patient suffering from tropical splenomegaly. The culture medium used consisted of rabbit blood agar; one month after inoculation it showed the flagellate forms as well as rosettes. Blood smears made at the same time and examined showed nothing.

Cardiac Disturbances after Accident.—Paul Horn concludes as follows: Disturbances of the heart following accident may appear after psychical or mechanical injuries. After mechanical injuries the disturbance may be temporarily functional or permanently functional, or may go on to an organic affection, or it may be organic from the start. Primary psychogenic disturbances occur in conjunction with anxiety neuroses when combined with circulatory anomalies or affections of the sympathetic system. Secondary functional disturbances of the heart occur as a result of excitement attendant upon wrestling bouts, and are not compensated by the insurance authorities. Rarely arteriosclerotic changes may occur from the same causes and also more rarely after trauma of the head. Prognosis of functional disturbance, as a rule, is good if compensation is made early. In disturbances after contusions of the breast, it is better to wait before deciding as to the amount of damage and compensation necessary. Organic affections of the heart may at first be of a functional character, especially after mechanical causes as contusion of the chest, excessive exertion, or violent shaking up, and it is important in these cases to determine related symptoms, such as inability to work during the period of the functional disturbance.

Graded Tuberculin Skin Reaction.—H. Kögel points out that the von Pirquet reaction alone is of no practical value in determining the character of tuberculous infection. Presence of an anergic reaction is of more importance than presence of an allergic reaction. Anergy may be entirely negative in an unmistakable tuberculosis, a very slight reaction, a late reaction, a fleeting reaction, persisting only for a short period, or finally a skin reaction only with higher concentrations of tuberculin. While allergic reactions occur in latent as well as in severe tuberculosis, an anergic reaction when present is a valuable prognosis. Where anergic reaction was present in women, such complications as pregnancy, puerperium, amenorrhea, chlorosis, or thyreoses were found. In others lymphatic diathesis, phthisis with marked progression of the disease, laryngeal and intestinal tuberculosis were present. Repeated cutaneous skin inoculations with different concentrations of tuberculin are of some value in determining the progress of disease or its regression. A benign process may be often diagnosed from the tendency of the skin to react to inoculations with pustule formation followed by cicatricial contraction.

Scleroma of the Upper Air Passages.—E. Paul-Friedrich reports two cases of scleroma of the upper air passages, larynx and pharynx, which occurred at Kiel, and suggests that prophylactic measures be taken to avoid the spread of the disease from foci where rhinoscleroma is endemic.

Etiology of Contracted Kidney.—Engelen would add to the etiological factors of contracted kidney hyperidrosis of the feet. He has found it present where no other cause could be determined, and suggests that treatment with formalin would be of value from a prophylactic standpoint.

January 15, 1914.

Hypophysis Cerebri and Diabetes insipidus.—C. Romer, on the ground of experimental investigation, denies that secretion of the pituitary gland produces polyuria. By means of injections of mercury into the stem of the pituitary gland of rabbits, a markedly increased secretion of urine resulted. Injections of colloid extracts, i. e., extracts from the pars intermedia of the gland, produced no increase in amount of urine excreted. In one case of diabetes insipidus, intramuscular injections of pituitary gland extract were followed by lessened excretion of urine and marked improvement. Autopsy revealed a tumor of the base of the brain involving the stem and posterior lobe of the hypophysis.

Bone Necrosis and Sequestration.—Axhausen insists that necrosis of bone, if aseptic, results in regeneration and replacement with new bone without sequestration. It is only when bone by virtue of extensive necrosis or through infection makes regeneration and substitution impossible that sequestration occurs.

Fusospirillary Symbioses in Other Diseases.—H. C. Plaut discusses the association of the fusiform bacilli and spirilla in affections of the throat other than the angina of Plaut-Vincent. In syphilis the examination with the ultramicroscope helps to determine the associated presence of Spirochæta pallida. The smear is best made from the edges of the ulcer. In diphtheria secondary infection with the fusospirillum requires energetic treatment with salvarsan. Other conditions in which symbioses occur are pyorrhœa alveolaris, stomatitis simplex, ulcers following trauma or tooth extraction, and ulcerating carcinomata of the mouth or buccal mucous membrane. They are also often found in the following affections of the lung: Pulmonary gangrene, tumors, bronchiectasis and chronic fetid bronchitis. In all of these conditions the use of salvarsan in glycerin (locally) or salvarsan alone intravenously may better, and occasionally, help cure the condition entirely.

Gastric Ulcer Penetrating to the Pancreas without Pylorospasm.—R. Bacher reports eight cases, three of which were operated in, in which the x ray examination demonstrated the presence of penetrating gastric ulcer (Niche symptoms of Haudek) without, however, a spasm of the pylorus; no bismuth remained six hours after ingestion. At operation, the ulcer was found to penetrate into the pancreas, and it is the irritation of this organ with consequent hypersecretion into the duodenum which is supposed to have counteracted the tendency of the pyloric sphincter to spasmodic contraction.

Artificial Vagina Using Sigmoid Flexure by Laparotomy.—Ernst Kuge describes an operation for the creation of an artificial vagina using the loop of the sigmoid flexure. This has the advantage over the choice of a section of small intestine, since it does not cause inconvenience owing to excessive secretion.

Puerperal Inversion and Prolapse of Uterus.—Allman reports two cases of post partum inversion of the uterus. In one case death occurred despite immediate reposition. In the second, reposition being impossible, the uterus was inverted under anesthesia, but not before all uterine vessels had been ligatured and hysterectomy performed. When shock and hemorrhage have been severe, it is best to wait, while in other cases immediate reposition bimanually to avoid air emboli, should be done. If reposition is impossible or if injuries or infection are present, a hysterectomy is often the wisest method of treatment.

PARIS MÉDICAL

January 31, 1914.

Intravenous Injection of Neosalvarsan in Infants.—G. Blechmann reports 100 successful injections of neosalvarsan into the external jugular, epicranial, or dorsalis pedis veins of infants. All the injections were made directly into the veins, without incision. The needles used were of platinum or steel, fifteen to seventeen mm. long, with bevels less than one mm. long, and with a diameter of 0.5 or 0.6 mm. for the jugular and 0.4 mm. for the epicranial and other injections. Neosalvarsan was always dissolved, whatever the dose, in two c. c. of twice distilled water. Three assistants were found necessary—two to immobilize the head and trunk respectively (the child being also wrapped in a blanket), and the third to disinfect the field, to loosen a constricting band when necessary, etc. For injection in the external jugular no compression of any kind is required, the child's crying efforts distending the vein sufficiently. Without immobilizing the skin, the needle—with barrel already filled and attached—can usually be inserted easily into the vein, after which the injection is rapidly given. Where there is difficulty with the jugular, relatively large epicranial veins in the temporal region can generally be found (Fournier's "dystrophic veins" of congenital syphilis) into which a small needle can be inserted for a short distance while the point of confluence of the temporal veins is pressed upon with a finger. As a third resort a vein on the dorsum of the foot can be used by applying a constricting band above the malleoli. The author in no instance found it necessary to use a vein at the bend of the elbow. Entrance of the needle into the vein is shown by the passage of a little blood into the syringe. Series of five to seven weekly or biweekly injections, with intervening periods of six or eight weeks, are given. The initial dose is less than 0.01 gram to the kilogram of body weight, and the dose ultimately attained 0.015. In infants less than a year old the total amount seldom exceeds 0.02 gram, and in cachectic ones, but 0.01 gram is injected. No untoward results occurred except in one cachectic case, where the second injection (0.02 gram) brought on temporary syncope, relieved by camphorated oil and epinephrine. There is a tendency to hematoma formation after withdrawal of the needle, but this may be forestalled by immediate and somewhat prolonged local pressure.

PRESSE MÉDICALE.

January 31, 1914.

Esophageal Intubation.—Guisez reports excellent results in esophageal stenosis by the introduction of specially devised rubber tubes through the remaining narrow lumen. The tubes are five to six cm. long, of graduated diameters, with the upper extremity funnel shaped, the lower pyramidal. The broad portion of the lower end bears openings for passage of food beyond the stenosis. After systematic irrigation of the dilated portion of the esophagus above the stenosis, to reduce local inflammation, the tube is introduced as follows: The throat is anesthetized and relaxed with five per cent. cocaine solution, an esophagoscope sufficiently broad to admit the rubber tube introduced as far as the stenosis, cocaine and epinephrine applied to the latter, the remaining small esophageal channel cautiously dilated with bougies of increasing calibre—a bougie sometimes being left in several hours—and an intubation tube slightly smaller than the last bougie finally introduced after lubrication. A rod of whalebone is used to extend the pyramidal extremity of the tube until its diameter at this point is no greater than elsewhere, so that it will easily pass through the stricture, but expand again when it has gone beyond it. The entire procedure in most instances takes but few minutes, and the patient is at once enabled to take sufficient liquid food. Five or six days later a broader tube is inserted, and later still broader ones until No. 28 or 30 is reached, when soups will pass easily. Provided a dilatable channel still exists, all forms of stricture can be intubated—those due to caustics, severe acute or chronic spasmodic strictures, compression of the esophagus by an external tumor, or esophageal cancer. The tubes are borne indefinitely, provided they are cleansed from time to time, and the author's results have been so good, notably in cancer, that he believes the indications for gastrostomy reduced to an extremely small proportion of cases.

Culture of Tissues in Vitro.—C. Champy advances the generalization that tissues of adult animals begin to show cellular division as soon as they are freed from the organism. Growth of organs in the body seems to be limited by reason of the presence of the other organs. The author also lays stress on what he terms *dedifferentiation* of tissues grown outside the body, the cells always tending sooner or later—at least, where proliferation is by mitosis—to return to the embryonal condition and appearance. Applied to tumors, which also exhibit excessive proliferation and dedifferentiation, these observations would tend to show that no specific pathogenic agent is necessary in the production of neoplasms.

Renal Hyperpermeability.—A. Martinet reports that a man sixty-one years of age, after passing through an acute infection, probably influenza, grew progressively thinner and weaker. The urine showed casts and albumin, the latter rapidly attaining seven per mille, where it remained, and poly-

uria set in. There was no chlorine retention, edema, or (at first) cardiac weakness, but the systolic, diastolic, and pulse pressures, as well as blood viscosity, gradually diminished and cachexia set in, the patient finally succumbing with symptoms of cardiac incompetence. In another somewhat similar case progress of the affection was slower. The special characteristic of these and four other cases, as opposed to interstitial nephritis with its secondary vascular hypertension, was the low blood pressure coexisting with the polyuria. In four instances there was albuminuria. An intermittent slight glycosuria was also noted. Some cases might be classed under diabetes insipidus. The author believes that renal hyperpermeability plays an important role in many instances of nutritive and nervous degeneration.

February 1, 1914.

Treatment of Progressive General Paralysis.—A. Pilcz praises von Wagner's method of treating paresis by the artificial production of fever and leucocytosis. Pilcz injects on alternate days 0.02 gram of mercury succinimide and ascending amounts of Koch's old tuberculin, beginning with 0.0005 to 0.01. The temperature is noted every three hours. When there is no reaction to the tuberculin, the dose is doubled; if the temperature rises to 37.5° C., a dose one half larger than that preceding is given; if to 38° C., a dose one quarter larger, and if higher than this, the same dose is repeated. A one gram dose is thus finally attained. The least tendency to constipation must be combated during the treatment, and alcohol prohibited. If high fever develops, rest in bed and an ice bag to the head are ordered. Of sixty-eight paretics treated in a sanatorium with these injections, 26.68 per cent. were so greatly improved that they resumed their former occupations, 10.44 per cent. were enabled to live at home without special surveillance, 23.2 per cent. showed an arrest in the progress of the disease, and the remaining 39.44 per cent. were not influenced. In a number of patients repetition of the treatment upon recurrence of the symptoms brought renewed benefit. Where the system becomes immune to tuberculin, or in tuberculous cases, injections of sodium nucleinate or of polyvalent staphylococcic or streptococcic vaccine may be substituted. Pilcz commends the mercury-tuberculin treatment to the general practitioner, who sees paresis in its earliest stages.

JOURNAL D'UROLOGIE.

October 1913.

Nephrostomy.—J. Pakowski, in an elaborate article, continued from the September number, concludes that of all methods of withdrawing urine, nephrostomy is the best. It is relatively benign, giving a mortality of but four and a half per cent., and in most cases death is not due to the nephrostomy, but to the disease necessitating the nephrostomy. Other methods of derivation are implantation of the ureter into the skin, into the urethra, into the vagina, into the intestine. Operative mortality of all of these methods is more than that of nephrostomy, as nearly always pylonephritis sets in. Ureterostomy is nearly as benign an operation, but it makes impossible the reestablishment of the normal passage of urine through the ureter into a newly formed bladder. Advantages of nephrostomy are the possibility of dealing with renal lesions, as, for instance, removing a renal stone; possibility of reestablishing the normal course of urine; and finally the kidney is drained. Indications for nephrostomy are multiple: Malignant tumors and severe tuberculosis of the bladder, painful and rebellious cystitis; extrophy or absence of the sphincter; cancer of the uterus and prostate, invading the bladder neck; vesicovaginal fistula; and in certain cases of kidney stone.

Uretrocele.—J. Paris and A. Fournier discuss extensively the embryology of the urogenital tract and the irregularity of development which cause uretrocele. Secondary uretroceles are caused by stricture of the urethra, stone, etc. Symptoms are generally tumor in the region of the urethra or perineum. In children such tumors appear two or three years after birth. Other symptoms are: Dribbling after urination caused by filling of the sac during urination, and slow expression following painful ejaculation. The author does not regard uretrocele as a serious affection, although it may cause sterility by the spermatic fluid emptying into the sac at the moment of ejaculation. Treatment is dissection of the sac and a plastic operation on the urethra.

[redacted]

Blood as an Index in Kidney Disease.—R. Bromberg says that in health the concentration of the blood is exactly one half the concentration of the urine, and this ratio is the hemorenal indication. Determination of this indication is important in establishing the functional capacity of the kidneys. When the kidneys are below par the elimination of chlorides is the first function to suffer. Nitrogenous substances are never retained while inorganic solution continues to pass normally into the urine. As soon as the hemorenal index becomes less than one to two, some serious kidney disturbance is suspected; but the index will remain normal if one of the kidneys is sound. If the index drops below one to one and one half, no operation should be attempted on either kidney. If it stays low the prognosis is grave.

REVUE MÉDICALE DE LA SUISSE ROMANDE

January 1914.

Malignant Tumors of the Thyroid.—Xenia Wissmer-Kowarsky found it impossible, in a study of thirty-three cases, to establish any clinical distinction between carcinoma and sarcoma of the thyroid, neither age of the patients, gross appearance of tumors, nor the route followed by metastases furnishing any differential information. According to Askanazy, this similarity arises from the fact that both classes of tumors evolve metastases through the blood stream, whenever one of the ductless glands is involved, cancers of these being in close relation to the bloodvessels, whereas cancers of other glands give off their constituent cells into the lymphatics. Thyroid cancers and sarcoma at first develop slowly, a year or two elapsing before symptoms appear; then occur sudden marked extension, with disturbances of speech, deglutition, and circulation, and rapid cachexia. Metastases in various organs are frequent; in but one of the author's cases

were there metastases in the bones. Seven varieties of thyroid epithelial tumor recognized by Langerhans are histologically distinct, but are closely related as to origin. His so called *wuchernde Struma* is merely a malignant epithelial proliferation with preservation of the tendency to form acini, while the true carcinoma is characterized by well developed fibrous ground work. Reduction of this stroma to a degree even less than that persisting in the *wuchernde Struma* results in a picture very similar to sarcoma. The presence of glycogen in Langerhans's parastruma suggests a parathyroid derivation; existence of acinar lumina in it do not necessarily indicate participation of the thyroid, normal parathyroids sometimes showing acinar formations. In any ductless gland tumor, the epithelial cells may degenerate or atrophy, leaving what appears to be merely an angioma.

Viability of Prematurely Born Infants.—R. Chapuis refers to a five months' fetus which lived seventeen hours after birth. Its length was twenty-eight cm. and weight 830 grams. The child was merely wrapped in cotton, no incubator being at hand. In a case previously reported by Tissier and Bonnaire a fetus, born after less than six months of pregnancy, lived two months. Cases such as these stultify the provision in the Swiss civil code that living infants born less than 180 days after marriage can be declared illegitimate by the husband without the adduction of any further evidence.

Extreme Retraction of the Bladder in Vesical Tuberculosis.—C. Perrier reports the case of a young woman in whom, at operation, a tuberculous bladder was found deeply hidden behind the symphysis and so contracted that the tip of a finger could hardly enter the cavity of the organ. Permanent drainage through a catheter proving impossible, as no catheter was retained, the urethra was closed by suture in order to establish complete drainage through the cystostomy opening.

BRITISH MEDICAL JOURNAL

February 14, 1914.

Intoxication with Bacterial Products.—W. J. Penfold and H. Violle conducted a large number of experiments on rabbits to determine the nature of the increased toxicity of certain bacterial cultures when given with distilled water, a phenomenon which had been observed previously by Hort and Penfold in the case of cultures of Bacillus typhosus. They conclude: 1. Distilled water sensitizes the body to many different bacterial cultures, including cholera culture. 2. The sensitization is equally well demonstrated by using cholera toxin after the actual organisms have been entirely removed. 3. The intoxication with cholera toxin or culture in association with distilled water is acute, and death may be immediate. 4. Acute death occurs if the cholera culture or toxin is given first and the distilled water afterward; the toxin may be given by channels other than the intravenous. 5. Previous injection of concentrated saline has little effect on the type of intoxication we have been discussing. 6. The augmentation of toxic effect occurs with cultures of Proteus vulgaris, Bacillus pyocyaneus, Bacillus dysenteriæ (Shiga), Bacillus prodigiosus, and also slightly with tuberculin, while it is not observed apparently with potassium cyanide or strychnine. 7. The injection of laked blood in small doses with sublethal doses of cholera culture produces sudden death. 8. The lysis of red cells is probably an important determining factor in the production of this effect.

Radical Cure of Procidentia uteri.—Marcus Mamourian trusts to vaginal plastic methods for the cure of this condition, to the extent of not having performed an abdominal operation for this purpose in the last two years. He believes that the vaginal route gives the easiest and best access to the structures which constitute the retentive mechanism of the uterus. The integrity of the pelvic floor and the anteverted position of the uterus constitute the two main factors in the maintenance of the uterus in proper position. An operative plan of procedure along normal anatomical lines should be adopted, and comprises: 1. Reduction of the weight of the uterus proper. 2. Removal of excessive cervical substance. 3. Anteflexion of the uterus. 4. Narrowing of the vaginal canal. 5. Lengthening of the posterior vaginal wall. 6. Restoration of the parallelism of the vagina to the conjugate of the pelvis. 7. Restoration of the continuity of the cellular tissue around the new vagina. 8. Repair of the pelvic diaphragm. 9. Repair of the perineal body. 10. Widening of the perineum and lessening the size of the pudendal orifice. These conditions are fulfilled by curettage, cervical amputation, and anterior colporrhaphy. The treatment of the posterior vaginal wall consists in the removal of a strip of vaginal mucous membrane extending from the vaginal orifice to the top of the posterior fornix, the margins of the strip running parallel until within half an inch of their upper limits, where they converge. The breadth of this strip varies with the needs of the case, but it should be such as to produce a slightly greater reduction in size of the vagina than is desired as an ultimate result. The edges of this wound are sutured from above down, and to prevent curling, submucous Lembert sutures are inserted. This makes the suture line stand out and makes an effective ridge in the vaginal wall in place of the posterior vaginal column. Three superposed interrupted sutures transfix the cellular tissue at the bases of the broad ligaments and over the levator fascia. The second set close the gap in the pelvic fascia and levator ani, and the last lot pass through the triangular ligament, vaginal muscles, perineal body (all more or less blended with cicatricial tissue and not identifiable), and emerge through subcutaneous tissue. In this way all the dead spaces are obliterated and there is a solid fibromuscular wedge interposed between the rectum and the vagina.

LANCET

February 14, 1914.

Operative Treatment of Fractures.—Ernest W. Hey Groves reports on his experiments on the operative treatment of fractures in animals, and seeks to apply the results to human practice. In plate fixation the great difficulty lies in the fact that this

method, if unaided, never secures complete immobility of the fragments. This is due to loosening of the screws as a result of the softening of the bone from their pressure, except possibly when metal thread screws are passed entirely through the bone on both sides; bending of the plate; and the fact that the plate has its purchase on but a small proportion of the entire circumference of the bone. The results of this insecurity are bad because the operation necessitates removal of some of the natural support through incision of the periosteum and muscular sheath; because there is some interference with the vascular supply of the ends of the fragments; because there is a loose foreign body left in the wound; and because of the external wound, through which infection may take place. The use of added external fixation for weeks greatly interferes with the employment of the best means to hasten bony union. Pegs are not satisfactory because of both incomplete fixation and likelihood of breaking. Complete and efficient fixation may be accomplished in two ways: 1. By the use of sufficiently strong plates fixed to the bone by cotter pins or bolts which pass through the entire shaft to be held by bending down in the former case, or a nut in the latter; 2, by transfixing the bone well above and below the site of fracture by two strong pins, which are then united laterally at some distance from the shaft by two strong metal bars. The former method has the disadvantage of exposing the site of fracture to infection. The latter avoids this, for the fracture site is not directly exposed, and the bars lie in the muscles distant from the bone. By either method fixation is so perfect that no external methods are called for, and the free use of massage is possible. Union occurs with a minimum of callus, and the union is firm, showing that absolute fixation does not hinder vital repair. Even when every precaution is taken to secure asepsis in the operation of plating, the irritation of the plate and the screws and the presence of a foreign body leads to an inflammatory reaction with the exudation of serum, which makes its way to the surface through the wound and opens a channel for secondary infection. Delayed union is a possible result of mechanical fixation, due to interference with the blood supply of the ends of the bones, but this is of relatively little importance if the fixation is such as to remain efficient for an indefinite time. The method of indirect fixation by means of the pins and connecting bars overcomes the disadvantages of the direct methods, and in the case of comminuted fractures is specially valuable because it does not disturb the periosteum and union occurs kindly in every case. It is the ideal method. In addition to these experiments, Grove shows that, save on account of the added blood supply furnished by the periosteum, this structure is of very slight importance in the regeneration of bone. He has been able to prove that the osteoblasts arise from the bone itself, and not, as commonly stated, from the periosteum. In certain cases of very oblique fractures of the long bones, and in fractures of the patella and olecranon, wire offers the best means of obtaining fixation. Here he points out that iron wire is the only suitable material and that it should be drawn tight by means of special forceps before it is twisted. The twisting should be by one turn only; the ends are then cut short, and two added twists taken to fix the first. This avoids the danger of cutting the wire by sharp kinking during the process of twisting. The clinical applications of Groves's studies will be given in a continuation of this paper.

Electrical Treatment of Bacterial Infections.—Charles Russ found that certain bacteria suspended in a solution of an electrolyte would collect at one or the other pole when a current was passed, and has sought to apply this observation to the treatment of infections. By suitable means he exposed varicose ulcers to a saline solution into which an electrode was dipped. Then a current was passed through the part and the solution, the electrode in the solution being the anode. In nearly every case the ulcer was made to heal, controls being run to show that no healing occurred when cases were treated in a similar manner, but without the use of the current. It was noticed also that the bacteria were not only withdrawn from the ulcers, but were killed, so that cultures from the fluid after the passage of the current remained sterile. Septic fingers were treated with like results, healing promptly. The method was then adapted to the treatment of cystitis due to Bacillus coli. Experiments with this showed that ordinary electrolytes were not efficient, and it was found that the only substance which gave favorable results was iodic acid. In none of these cases, however, though the condition was always much improved, was it possible to effect either a complete cure or a total sterilization of the urine. It was noticed, however, that the bacilli underwent a change by which they became very long and attenuated. This attenuation has been seen under other conditions, and is associated with a marked reduction in the virulence of the organisms. This probably accounts for much of the benefit obtained.

Multiple Mesenteric Lipomata.—Spencer Mort's patient, a woman of sixty years, had noticed a gradual and progressive swelling of the abdomen without other symptoms at first, but later with marked and obstinate constipation. There would be a feeling of fullness after food, dyspepsia, sickness, vomiting, constipation, occasional sudden distention of the abdomen, relieved usually by the passage of flatus in quantity, and rarely diarrhea. On operation, the great omentum was of the stiffness of cardboard, largely interladen with lobulated fat of one and one half inch in sectional thickness. . . . The small intestines were attenuated and collapsed, their walls thrown into rugæ in many places. The mesentery was closely packed with firm fat and the free borders supported the intestine erect, as if starched, holding it out like an Elizabethan ruff. Many little tumors of the size of beans were studded in the mesentery, and one larger tumor, as big as a pigeon's egg, situated nine inches from the ileocecal valve, pressed on the ileum, and seriously diminished its calibre. This was easily shelled out after incising the peritoneal case, and the intestine thereupon resumed its natural size. Recovery was excellent. This is the only case of its kind in the literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

Have the Early Claims for Salvarsan Been Realized?—C. Morton Smith says that, although the early hope of curing syphilis with a single massive injection has not been realized, this remedy is potent in healing all manifestations on the skin and mucous membranes, is more efficacious than mercury in changing a positive to a negative Wassermann reaction, and its prompt action on early moist lesions has a decided effect in limiting the spread of contagion. He believes the early fears of damage to the cranial nerves to be groundless, and that, when it is given in proper amounts at proper intervals, it is practically devoid of danger.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

February 27, 1915

Phenomena of Infection.—V. C. Vaughan formulates his theory of sensitization or parenteral digestion as follows: All infecting agents are living proteins capable of growth and multiplication. They may contain carbohydrates, fats, waxes, and possibly other and simpler chemical bodies, but their essential and characteristic constituents are proteins. This is true also of all life units. The infecting agents which we know are bacteria, protozoa, moulds, and yeasts. These have physical characters enabling us to individualize them, but theoretically there is no reason why a living virus may not be a liquid. Every living thing must feed, assimilate, and excrete. Its molecules must be in a labile state, taking in and casting out atomic groups simultaneously. The bacterium can feed only on the pabulum within its reach, and of this it can utilize only that which it can fit into its molecular structure. Organisms which cannot utilize the proteins of the animal's body cannot be pathogenic to that animal. All living things feed through the activity of their ferments. These are of two kinds, analytic and synthetic. The former split up the pabulum; the latter place these products in the cell molecule. Usually we say that cell ferments are extracellular and intracellular. The former diffuse more or less into the medium and exert a cleavage action; the latter remain in the cell and do a constructive work. That these ferments are in reality different bodies is indicated not only by the parts they play in the life of the cell, but also by the fact that they are differently affected by heat and chemical agents. Ferments are specific in two senses: each kind of cell elaborates its own ferment, and the ferment is able to split up only certain proteins. Besides, for each ferment there is an optimum temperature at which its action is greatest. There are many bacteria which cannot grow at body temperature. These cannot be pathogenic. This is true of most saprophytic bacteria found in water. Then, there is the relation between ferment and substrate which requires a nicety of adjustment which is not thoroughly understood. The author protests against classifying toxins and anaphylactogens together under the name of "antigen." This term, he says, should be reserved for the former, as the anaphylactogens produce no antibody.

Gastric Tetany.—W. L. Rodman reports a case of this character and states that the tetany came on eleven days after a successful drainage operation. This, so far as he knows, is the only one on record. Nearly all cases reported as having received surgical treatment were promptly relieved by a drainage operation—gastroenterostomy, pyloroplasty, or pylorectomy. Theories as to the etiology of gastric tetany are not entirely satisfactory. Mayo Robson believes that it is due to absorption of the stagnant contents of a dilated stomach which poisons the nerve centres and thereby increases reflex irritation. Rodman's case yielded to thorough and repeated gastric lavage, with rather full doses of antispasmodics.

Effect of Tartrates on the Human Kidney.—W. E. Post gave potassium and sodium tartrate, in doses of from one to six drams, to seven hospital patients, and refers to two other patients with nephritis of pregnancy who were given cream of tartar or Rochelle salt regularly. In one the condition cleared up before the termination of pregnancy, the other showed marked improvement. These cases are cited, he says, not to describe the plan of treatment in nephritis, or even to give evidence of any benefit from tartrates, but to show that administration of tartrates, even in nephritis, is not inconsistent with good clinical results. They give no evidence that potassium and sodium tartrate in ordinary doses by the mouth in the human subject will cause albuminuria or cylindruria. There is no evidence that tartrates aggravate an existing nephritis. Acidity of the urine, indicated by the hydrogen ion concentration, was as a rule less after the administration of tartrates. These findings are entirely consistent with those of Underhill, Wells, and Goldschmidt regarding experimental tartrate nephritis.

MEDICAL RECORD

February 27, 1915

Intravenous Injections of Sodium Salicylate in Rheumatic Affections.—L. A. Conner finds that, with proper technic and a chemically pure preparation, administration of sodium salicylate is safe, painless, and easy. So administered, it seems to have a much more pronounced analgesic effect than when given by the mouth. At present this method seems to include cases in which the drug is not well borne by the stomach, which show little or no improvement under the usual mode of administration, cases with beginning heart complications, of severe rheumatic inflammation of the eye. The author's experience is that it is necessary to give the salicylate in doses of ten, twenty, or even thirty grains.

Nasal Accessory Sinuses in Children.—Seymour Oppenheimer, having described the anatomical conditions, states that sinusitis in the child is more difficult to recognize than in the adult; the symptoms are usually obscure and it is rather uncommon to have a single sinus involved. In his hands, transillumination has proved a valuable means of diagnosis, provided a regulating rheostat is used to measure the intensity of illumination. Routine use of the pharyngoscope in young children has disclosed a surprisingly large number of cases of posterior ethmoidal and sphenoidal suppuration which would not have been recognized by any other method of examination. Most important is the fact that these inflammatory invasions mean a radical

disturbance of the entire drainage system of the nasal interior, and all treatment, whether conservative or radical, must rest upon this basis. Treatment should always aim to destroy as little tissue as is consistent with permanent results, and, in operations, the nasal mucosa should as far as possible be preserved. Palliative treatment will permanently cure the majority of acute sinus inflammations, where it is intelligently directed toward free drainage and reduction of inflammation. Where sinus disease has continued for some time and resists treatment, it may be found that the general health of the child has been impaired as a result of original disease, and until proper care of the general health is instituted local measures may not be of much avail. In such circumstances a culture of the microorganisms present in the sinus should be made and an autogenous vaccine prepared which may increase the powers of recuperation. Intranasal treatment is primarily indicated in all cases of sinusitis in children, but the author urges that the turbinate tissue as far as possible should be preserved.

Carditis.—G. M. Swift's aim in this paper is to make clear the following points: 1. Acute cardiac affections are due to germ infection—a sepsis. According to Rosenow, the most common infecting microorganism is Streptococcus viridans. 2. The infecting germs are distributed throughout all the structures of the heart, and by the bloodvessels of the coronary system. 3. The most important factor in treatment is the discovery of the source of infection and its removal.

Absorption Methods in the Wassermann Test.—M. P. Olmstead concludes as the result of two series of tests carried out at the Research Laboratory of the New York City Department of Health: Natural antisheep amboceptor is frequently present in human serum. An excess of amboceptor in the Wassermann test may result in false negative reactions. By absorption of the natural amboceptor the binding power of some serums is increased, especially if the amboceptor has a long period of time in which to act; as is the case when the second incubation of the test is for one hour and the readings are not made until the following day. If, however, the readings are made as soon as antigen and serum controls are completely hemolyzed, an excess of amboceptor makes little difference in the results. Thus the method of reading tests seems to determine the importance of absorbing natural amboceptor.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

January, 1914.

Differentiation of the Diseases Included under Chronic Arthritis.—L. F. Barker refers to the gradual restriction which has taken place in the meaning of the terms gout, arthritis, and rheumatism, and discusses the differentiation of the chronic arthropathies according to the pathological anatomical changes met with in the joints, according to the etiological factors known or presumed to be concerned, and according to the x ray findings; after which he arranges the principal chronic arthropathies in clinical groups, and in closing reemphasizes the following points: 1. The constant recurrence of well characterized clinical types in the experience of observers in all countries; 2, the astonishing accuracy and vitality of the names which have been used for definite purposes; 3, the unfortunate confusion which has arisen largely through trying to use names introduced for a specific purpose, for entirely different purposes, especially through the efforts to make clinical, anatomical, and etiological classifications coincide; 4, the gratifying progress in differentiation thus far made in a group of diseases formerly supposed to be one disease; 5, the prospect of still more satisfactory differentiation to follow advances in etiological knowledge when they can be made.

The Mechanism of the Circulatory Failure in Diphtheria.—W. G. MacCallum states that in the course of an experimental study of the mechanical conditions present in aortic insufficiency a plan was devised by which the influence of the vasomotors might be almost entirely eliminated, and the work of the heart studied by itself. By applying this arrangement to an animal in the collapsed condition following poisoning with the diphtheria toxin, the injurious effects of paralysis of the vasomotors would be removed at once. The series of experiments made seemed to show fairly well that the death which occurs in the height of an attack of diphtheria is not exclusively the result of direct injury to the heart, although that may play some part in the process.

Auricular Fibrillation: Pulse Deficit, Digitalis, and Blood Pressure.—W. B. James and T. S. Hart state that recent studies with the electrocardiograph on animals under experimental conditions and on the human subject have permitted the separation of a group of cardiac irregularities known as auricular fibrillation, which is of great clinical importance. A clinical study of a number of cases of auricular fibrillation has prompted them to present the following points, which their experience has demonstrated to be of practical importance: 1. In auricular fibrillation palpation of the radial pulse is a misleading guide to the condition of the circulation. 2. The pulse deficit is a simple and useful means of following the progress of such fibrillation, and of confirming observations on the value of various therapeutic measures, including the activity of various drugs. 3. The relative deficit is of value in the diagnosis of suspected cases of fibrillation. 4. The ordinary method of estimating blood pressure is misleading in cases of fibrillation; it may be replaced with advantage by the estimation of the average systolic blood pressure, which gives an approximate measure of the real systolic blood pressure. 5. The administration of digitalis elevates blood pressure in cases of fibrillation.

The Minute Changes Produced in Leucemic Tissues by Exposure to Röntgen Rays.—A. S. Warthin finds that in the first stages of the treatment the leucemic tissues show great degeneration and destruction of the white cell forming tissue. This may completely disappear from the spleen, and the process of white cell formation may be so inhibited that an aleucemic condition of the blood may result. After some months there arises a more undifferentiated leucoblastic tissue, particularly in the retroperitoneal hemolymph nodes and in the

bone marrow; the leucemic condition of the blood may or may not return. With an increasing cachexia the process may be terminated by symptoms of intoxication or by some secondary event, as hemorrhage from the necrotic spleen. The marked changes in the spleen may also be in part responsible for the fatal termination. In conclusion, he states that prolonged irradiation of the hematopoietic organs in leucemia causes first a degeneration of the young and maternal cells, leading to a great decrease in the output of leucocytes, particularly in myelemia. To this destructive effect there follows a reaction in which cells of a more resistant type are formed, and the essential leucemic process remains unchecked, although altered in character.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

December, 1913.

Cholecystectomy.—John B. Deaver advises removing the gallbladder in: 1, Hydrops with obliteration of the cystic duct; 2, chronic empyema; 3, calcareous degeneration; 4, cholesterin gallbladder of Moynihan; 5, gangrene; 6, carcinoma limited to the gallbladder; 7, extensive laceration or perforation of the gallbladder.

Drainage of Upper Intestinal Loop in Ileus.—C. H. McKenna bases his observations upon eight clinical cases. After careful jejunostomy normal saline is introduced into the intestine by means of long catheters, through the enterostomy opening. One catheter is placed in the oral loop of intestine, the other in the aboral loop. The salt solution is allowed to run in at frequent intervals, but in small quantities. Several hours are necessary before any appreciable amount of distention is relieved. Salt solution performs a dual role; mechanically washing out blocked up secretion and gas from the duodenum, and becoming, on account of rapid absorption from the intestine, a powerful stimulant. Under ordinary circumstances the enterostomy may be closed in about two weeks.

Mortality of Suprapubic Prostatectomy.—Hugh Cabot emphasizes three important factors in the mortality of suprapubic prostatectomy, the anesthetic, production of shock by traumatic operating, and inefficient control of bleeding.

Renal Function.—B. S. Barringer writes that phthalein is the best single drug for estimation of kidney function. The amount of phthalein excreted varies with the amount of destruction of kidney tissue and generally, but not always, with functional capacity of the kidneys.

Intestinal Stasis.—A. E. Rockey says that the water absorbing function of the colon is better known to surgeans since the use of Murphy's drop method of proctoclysis. Dryness of the colonic contents may be avoided by drinking large quantities of water. Liquid paraffin or, as it is known in our pharmacopeia, liquid petrolatum, passes through the intestinal canal comparatively unchanged, and is the most efficient lubricant for the colon that can be given by the mouth. In practice it is found that a dose of from one to three ounces, given preferably in a glass of cold water at night, is sufficient to overcome many obstinate cases of constipation. As mechanical causes of constipation are not influenced by paraffin, it may be necessary to continue it indefinitely, and it is far better to give a daily dose just sufficient to produce a regular movement than to cause a spasmodic movement by the use of a large dose for the purpose of clearing accumulations. When these measures fail to relieve autointoxication, even though constipation itself is relieved, Lane's short circuit operation shoud be done. This, the writer considers, one of the most important procedures devised during recent years.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Section in Laryngology and Rhinology.

Anniversary Meeting, Held November 25, 1913.

The President, Dr. William W. Carter, in the Chair.

This meeting was held for the purpose of celebrating the fortieth anniversary of the founding of the New York Laryngological Society. The tablet presented bore the following inscription:

The New York Laryngological Society, founded by Clinton Wagner, M. D., merged with the Section in Laryngology and Rhinology of the New York Academy of Medicine eighteen hundred and eighty-five. The oldest Society of Laryngology in existence. This tablet commemorating its Fortieth Anniversary presented by David Bryson Delavan.

Introductory Remarks.—The President, Dr. William W. Carter, congratulated the section and welcomed the guests; this was an epoch in their history. They had not met from necessity nor to applaud their own work, but to honor those pioneers who had lifted laryngology from a cradle of obscurity to its present position of honor in the profession. The span of one life was too short for the founder to realize all that he had done, but he knew that he was building for those who were to follow him. They had with them one who had come from London expressly to be with them on this occasion, Doctor Wagner, who had graduated at the beginning of the Civil War and had served in the medical corps of the army during the entire period of the conflict. This experience placed him in the first rank as a surgeon in that day. He had been to Vienna to study laryngology, and when he returned opened a laryngological clinic in this city. This clinic was the beginning of the Metropolitan Throat Hospital. Doctor Wagner had been instrumental in founding, in 1873, the New York Laryngological Society which later became the Section in Laryngology and Rhinology of the New York Academy of Medicine.

Address of the Founder.—Dr. Clinton Wagner, of London, after expressing his appreciation at the compliment in inviting his presence on this occasion, reminded the audience that thanks were due to Doctor Delavan for having conceived the idea of celebrating the fortieth anniversary of the New York Laryngological Society. Doctor Delavan had rescued the almost forgotten society from oblivion and placed its name in enduring bronze. It was fitting to speak of the work of the early laryngologists on this occasion. Forty years ago the men in this city who were familiar with the modern methods of examining the throat and nose, could be

counted on one's fingers. Most of them had received practical and clinical instruction in London, Berlin, Vienna, or Paris, but, notwithstanding, their knowledge of the diseases of the nose and throat was very limited. They could be compared with young men fresh from college, with minds stored with the ideas of other men, but with no fixed views such as were acquired from actual experience. Their knowledge of the nose and throat had not taken concrete form; they had no blazed trail to follow. They met one evening in October, 1873, and decided to organize a society, not only for mutual improvement and advancement in their knowledge of the diseases of the throat and nose, but also to establish on a solid footing with the medical profession at large the specialty of laryngology and rhinology in this country. The general practitioner of that day was jealous of interlopers. The probang and gargles were their sole reliance in all cases of sore throat, while the nose was entirely ignored.

The aurist who had preceded them had had his troubles in gaining recognition. A surgeon in one of the largest hospitals of London, just prior to this time, had stated in one of his lectures when he came to the subject of the ear that there were but two classes of ear trouble, those that could be cured with the syringe and those that could not, and for the latter nothing could be done. All were familiar with the character and attainments of the men who met to form the New York Laryngological Society, among whom were Frank Bosworth, George M. Lefferts, Morris J. Asch, Woolsey Johnson, and Norman Bridge. Others who were with them at the time had since sought larger fields for their abilities, among these were Charles McBurney, Robert F. Weir, Matthew D. Mann, and Francis P. Kinnicutt, and the lustre of their fame needed not his praise. Many young men came to their clinics for instruction and they had patients from all parts of this country and Canada, but from the Potomac River to the Rio Grande, there was absolutely no one to whom he could refer a patient for further treatment in his home town or city. The specialty, however, soon became popular. The laity were first to recognize that many ailments of the throat could be speedily relieved by the specialist familiar with modern methods of treatment. As an evidence of the rapid growth and popularity of the specialty, within five years after the organization of this society it was deemed advisable to found a national society, and, in 1878, the American Laryngological Association was formed with a membership of fifty, which number was later increased to seventy-five and then to one hundred, as at present. In the nineties a sister society was formed, the American Laryngological and Rhinological, with a large membership. Before the development of laryngology, adenoids and enlarged tonsils were not suspected as a cause of habitual mouth breathing; the etiology of hoarseness and aphonia was not recognized, and dyspnea was not infrequently ascribed to and treated as asthma, when dependent upon stenosis of the larynx caused by neoplasms or upon nasal obstruction. During the two years which he spent abroad, studying his specialty, the treatment of nasal troubles was practically ignored by those who taught it. Polypi, foreign bodies, and tumors were recognized and removed, but there was no systematic instruction given for nasal affections, as for those of the larynx and pharynx. The prevalence of chronic rhinitis, or so called nasal catarrh, in this country stimulated research into the hidden labyrinths of the nose, and in this branch of the specialty they went rapidly ahead of their confrères on the other side of the Atlantic.

A history of the development of laryngology would not be complete without recalling that a generation before the time just spoken of, Dr. Horace Green, a man whom the profession in America justly honors today, first demonstrated that an instrument could be introduced into the larynx through the rima glottidis into the trachea, and as far as the bifurcation of the bronchi. He used a sponge probang charged with a strong solution of nitrate of silver, and by means of a catheter introduced solutions into the bronchi for the relief or cure of certain pathological conditions. His views aroused much opposition, and a committee of the Medical and Surgical Society of New York condemned his theories and practice, even a professor of anatomy declaring his claim impossible. Doctor Green was asked to withdraw from the society. He was later reinstated. He not only diagnosticated the presence of laryngeal growths, but successfully removed them by laryngotracheotomy. If the laryngoscope had not come to their aid, there would today be laryngologists following the methods of Dr. Horace Green. The early laryngologists had builded better than they knew, and, as a tree was known by its fruits, so would the work of these pioneers be appreciated and understood when one looked upon the scientic section under the sheltering ægis of the Academy of Medicine.

Address of Commemoration and Presentation of Bronze Tablet and Memorabilia.—Dr. DAVID BRYSON DELAVAN made this address, in which he felicitated the society upon being the first laryngological society established in modern times, and said that in honoring the guest of the evening, the far sighted and public spirited founder, Dr. Clinton Wagner, they should also fearlessly claim for the city of New York the credit for intellectual and scientific eminence which, through many generations, its physicians had so richly deserved. It was well that they should know something of the lives of those pioneers whose toilsome struggles and rare genius had brought them who had come later, so many and such great advantages, and they should realize the far reaching influences for good which had steadily grown from their high minded and unselfish efforts. It was well also to tell what New York had done for the study of laryngology. Long before the invention of the laryngoscope it was here, in the city of New York, that attention was first seriously turned to the special diseases of the throat; here that the most important principle connected with the physiology of the throat was discovered; here that the possibilities of the topical treatment of the larynx were first demonstrated, developed, and perfected; here that intralaryngeal surgery had its birth; the first public throat clinic in America, and perhaps in the world, was established here; here the causes of nasal obstruction were first understood

and successfully treated, and the way thus opened for the recognition and treatment of sinus disease; here that intubation, with all its great possibilities, was first made practicable; here that Koller, driven from Europe, taught the value of anesthesia and gave them cocaine; and here, again, that was founded the first society of laryngology in the world. This last event was in no wise accidental; it was the culmination of more than a century of blind struggle, during which there was constant advancement, of which this society was the successful and triumphant issue. The first mention in this country of throat disease was made in 1650 by Captain Morton in his *New England Memorial,* in which he referred to an epidemic which was probably diphtheria. About ten years later, Josselin, in *An Account of Two Voyages Made to England,* mentioned another epidemic of similar character. During the following two hundred years, progress was very slow, until toward the close of the period when the subject began to receive considerable and increasing attention. In 1846, Horace Green presented his *Treatise on Bronchitis,* the result of work begun by him in 1838. In this treatise he described catheterization of the larynx. Under this unpretending title he announced the great discovery that a foreign body could be introduced into the larynx, even below the vocal cords, without necessarily producing suffocation. Jonathan Wright in his work, *The Nose and the Throat in History,* stated that instruments were introduced into the fauces as early as the days of Hippocrates, and that many others had succeeded in reaching the larynx before the time of Green, but he did not prove that even if the instrument reached the entrance to the larynx, it proceeded as far as the vocal cords, still less below them. For this important discovery, credit was beyond question due to Green. That his suggestion as to the value of nitrate of silver as a local application was worth while, would seem to be proved by the fact that in the Vienna clinics and elsewhere silver was the main reliance for more than a generation. Horace Green's thesis was destined to produce a revolution in the treatment of laryngeal disease and to open the way for new methods, both medical and surgical, which had constantly increased in number and value from that time up to the present day. To the name of Green must be added that of Gurdon Buck, who had been called the father of laryngeal surgery. Doctor Buck published a series of classical papers on *Œdema of the Larynx,* in which he taught the diagnosis of these cases by palpation and devised a special knife which could be passed into the larynx.

In 1858, the dawn ushered in by Horace Green was made brilliant daylight by Manuel Garcia's invention of the laryngoscope, and the way was prepared for the establishment of the specialty on a definite and firm basis. Here again New York took the lead, and Dr Ernest Krachkowitzer, surgeon to the New York Hospital, procured a laryngoscope from Vienna, and with it, in 1858, he demonstrated the vocal cords. With the development of the laryngoscope a number of famous clinics were established in Europe, and of these young Americans were not slow to take advantage. Among these early students were the founders of their society. Five years after the founding of the New York Laryngological Society, able laryngologists were found in most of the principal cities of the northern States. In 1878, the American Laryngological Association was founded. The British Laryngological Association was founded in 1888, not until fifteen years after the organization of the New York society. The associations of France, Italy, Belgium, Scandinavia, Russia, Germany, Austria, and Spain had all been formed since that period. In addition to the scientific and social purposes for which the society was founded, there were ethical reasons, since a number of foreigners, some not even graduates in medicine, came to this country and proclaimed themselves specialists in the nose and throat, and advertised extensively in the public press. The Americans, on the other hand, who entered the department of laryngology, were men of the highest type. Not a few of them had seen service during the War of the Rebellion. Doctor Wagner had served with distinction, and at the battle of Gettysburg his hospital was the one nearest the firing line, and in the desperate attempt of the Confederates to retake Little Round Top, he was in the midst of such a hot fire and shell that he was compelled to abandon it for a less exposed position. Doctor Asch and Doctor Bosworth also saw service. The speaker mentioned this phase of the life of the time because of the extraordinary opportunities it gave for the development of strong traits of character. They were men of highly trained powers of observation, untiring clinicians, and diligent readers, relying upon such guides rather than upon the not always infallible findings of the laboratory. They were also enthusiastic teachers. Rhinology in the early seventies was unknown. Attempts had been made to treat nasopharyngeal catarrh, but beyond that and the surgical treatment of polyps and growths and the control of epistaxis, little was done.

It was Dr. William C. Jarvis, a member of the New York society, who first recognized and called attention to the importance of nasal obstruction due to undue swelling, or chronic hypertrophy of the turbinated bones, and is was he who devised the Jarvis snare. It was Bosworth who recognized that part played in nasal obstruction by nasal spurs, and he was the first to advocate their removal by the saw. Doctor Goodwillie substituted the dental engine for Bosworth's saw for the carrying of trephines and burrs, and Asch gave them the first practical method for the relief and repair of deformities of the nasal septum. Finally they had, though not in New York city, in the State, Dr. John Roe, whose unrivalled skill in repairing nasal deformities had caused him to outrank all others. The speaker then referred to the work of Doctor Lincoln in the treatment of nasopharyngeal fibroma, and to that of Doctor French, of Brooklyn, who devised a special camera by which the larynx or upper pharynx could be photographed. Doctor Delavan also reviewed the work of Doctor O'Dwyer, Doctor Elsberg, Dr. J. Solis Cohen, of Philadelphia; Dr. Jonathan Wright, Doctor Park, Doctor Gleitzmann, Doctor Simpson, Doctor Coakley, Doctor Knight, and Doctor Newcomb, with which all were familiar, and concerning which he did not, therefore, go into in detail, though it was deserving of

much credit. Doctor Wagner established the Metropolitan Nose and Throat Hospital and made it a model institution, which soon became famous among those desiring advanced instruction. Foreshadowing the introduction of aseptic methods, it was the best managed clinic of its time. In many clinics of that time the conditions were not good, and compared with the modern methods of asepsis they were incredibly bad. That patients were not infected by the means used must be accredited to the germicidal power of nitrate of silver and iodine, the most frequently used remedies of the time. Doctor Wagner had also shown great inventive genius. His nasal forceps was among the earliest instruments of its kind and was still one of the best. He modified the old fashioned powder blower so that it could be conveniently attached to the compressed air apparatus. His great experience as a general surgeon and his rare technical skill enabled him to undertake with success operations upon the throat which few specialists were in the habit of doing. As one of their earliest instructors of graduates, Doctor Wagner deserved first rank. As an instructor of undergraduates, Doctor Lefferts deserved mention. His lectures, so far as could be learned, had never been surpassed. If the aims of founders of the New York Laryngological Society were ambitious, they were eminently high minded. How they had succeeded the brief and imperfect suggestions of their speaker added to their own knowledge of what had been done in more recent years, would amply prove. In the history of the society the fine altruism of medicine at its best and most dignified had been splendidly shown. The great discoveries of its members had not been hoarded for purpose of personal gain, but were freely and enthusiastically given to the profession and the world, with the freest liberality and the most broad minded and philanthropic spirit. The history of the section in laryngology of the Academy of Medicine had thus far sustained its traditions. Those who had been its members had been earnest and in many instances brilliant men. Its present was most satisfactory and the promise of its future was most bright. There were always those who asked, Of what use the knowledge of the past? No thinking man could satisfy his mind with this statement. They had no way of judging the future or of fully understanding the present, but by the past. Knowing the past and guiding oneself by it, many successes might be emulated and many failures avoided. History instructed and warned. Tradition, the outgrowth of history, dignified, while it fostered by tradition a sentiment which stimulated to action and inspired to high aims. One of the objects of this meeting was to arouse the members of the society to a lively interest in the work of the past. To that end they had tried to give not only the record of its origin, but its early career, and to place in the permanent keeping of a strong and enduring institution certain definite reminders of the past of the laryngological society in New York and in America. This tablet, which he had taken pleasure in preparing for them, had been accepted by the trustees of the Academy of Medicine and approved by the members of the section in laryngology and rhinology in regular meeting. He placed it in their safe keeping with full confidence that it would fulfill its intended mission. Might it arouse in them and in those who should come after them a desire for full and thorough knowledge in all that pertained to their chosen field of professional work; might it add to their respect for this great city in which they lived; might it stimulate a just appreciation of American medicine and a high ambition to forever keep it by superior ability, by superior energy, and far above all by superior integrity, in the forefront of the progress of the world.

Acceptance of Commemorative Tablet.—Dr. Wesley M. Carter, chairman of the Section in Laryngology of the New York Academy of Medicine said that this artistic bronze tablet, commemorating the fortieth anniversary of the laryngological section of the Academy of Medicine, recorded to posterity the distinction of the birth of this society, and in donating these valuable memorabilia, and this wonderful collection of historic instruments, showing in many instances the ideas from which some of the most useful instruments of the present day had been evolved, established a shrine to which members could ever look for inspiration. The section recognized with grateful appreciation the professional pride of the donor in its welfare, and pledged itself to maintain the high standard upon which the original society was founded. This section had yielded a distinct influence in their specialty and had contributed its full share to its unparalielled growth. It was well for those who had come on the arena after the first great battles had been fought and won by their worthy forbears, to know whence came the enthusiasm that had accomplished these results. Among all the specialties not one had advanced with more rapid strides, for only a few years ago laryngology received only a modicum of respect, and its devotees were almost ostracized by the general profession; but all this was changed and it is now recognized as a calling worthy of the very best efforts of the most skillful men in the profession. The position which it now occupied was due, not to any fortuitous circumstance, but to the character of the men who embraced it. They should not fail to appreciate the dignity and worth of those through whom the gains of science had been achieved. At no time in the history of laryngology had there been so many good men engaged in devising new methods and in perfecting the old; to name one would necessitate the naming of dozens, and to even mention the new and efficient procedures for relieving abnormal conditions that arose within the field of their efforts would require an extra allowance of time. Just one instance, the bronchoscope, would serve as an illustration. The wonderful possibilities of this instrument were just beginning to be understood and should be published throughout the length and breadth of the land, so that every layman might know that when a foreign body became lodged in the air passages, it might be removed under the direct guidance of the eye by one skilled in the use of this wonderful instrument. There were men within hearing of these words who had contributed largely to the science of their specialty and who were recognized,

not only in their own country, but in foreign parts as well, and their works claimed places of distinction in the literature of every country in the world. There were among them men who had drunk deep of the astral wines, and who could see, engraved upon the very stars themselves, the great future of their specialty. It was indeed a fitting tribute to the oldest laryngological society in the world that this beautiful bronze tablet should occupy an appropriate place on the walls of the academy, where it would perpetuate the distinction of its birth.

Dr. Douglas Beaman said that while the speakers had been talking he had been thinking that they belonged to the third rank. First came the pioneers, with high boots and axes, who had hewed the path; then the great teachers who had taught him, and they, too, were giants. Their methods were not always perfect, but they had the right spirit and high ideals. They themselves belonged to the third rank, and they, too, should be proud of their work; they were still forging ahead. Three great revolutions had come since his association with laryngology; first, there was the great advance brought about by the use of clean methods, the result of the knowledge of the part played by bacteria in the production of infection; second, and perhaps even more important, was the discovery of cocaine, by which their work had been revolutionized in the very best sense of the word. The third great revolution had been a natural evolution, that was, an improvement in method. A great wave of progress was sweeping over their specialty.

Dr. Robert C. Myles said that they should bow their heads in reverence and place laurels on the heads of the living and chaplets of immortelles on the graves of the dead. It was with a sense of gratitude that they paid tribute to their teachers. Twenty-seven years ago he had come from the forest and straggled into Doctor Wagner's clinic, and there he had learned much that had been very helpful to him. Occasions like this were worth more than twenty scientific meetings for, after all was said, it was the spirit that made the world move on. As they passed through life they were apt to lose their constructive feelings and to become pessimistic. While it was right that they should measure things by the scientific test, it was not well to lose sight of the constructive side. When one compared what these pioneers had accomplished with the limited facilities at their disposal, it seemed that they who were working today suffered by the comparison.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Foods. Their Origin, Composition, and Manufacture. By William Tibbles, LL. D., M. D., L. R. C. P., M. R. C. S., L. S. A., Medical Director of Health, Fellow of the Royal Institute of Public Health, etc. London: Baillière, Tindall & Cox, 1912. Pp. viii-450. (Price, 18s.) (American Agents, Chicago Medical Book Company.)

This work is not one on dietetics as its title would suggest—and fortunately too, for the market is stocked with books on the subject—but a comprehensive study of the constructive chemistry of foods based on the theory of ions, with a necessary outline of the chemical structure of the tissues into which the appropriate food elements are built. It deals, therefore, with the foundation of dietetics, an essential feature if this branch of science is to be thoroughly apprehended. The general constituents of animal and general foods; the alimentary constituents from the animal kingdom and those from the vegetable kingdom; condiments and spices; and finally beverages are thoroughly considered in all their aspects. In these days of pure foods and the efforts by government and municipal health authorities to preserve health, no work could prove more useful.

Radium as Employed in the Treatment of Cancer, Angiomata, Keloids, Local Tuberculosis, and Other Affections. By Louis Wickham, M. V. O., médecin de St. Lazare, et Paul Degrais, ex-chef de laboratoire a l'Hôpital St. Louis, chef du service au laboratoire biologique du radium, lauréats de l'Académie de Médecine. Translated by A. and A. G. Bateman, M. B., C. M. With Fifty-three Illustrations. New York: Paul B. Hoeber, 1913. Pp. 111. (Price, $1.25.)

This is a timely little book by a man of the highest competence—one to whom many practitioners have gone for instruction. Its purpose is to furnish a brief, simple, and up to date résumé of radium therapy. Doctor Wickham, whom death has recently claimed, conducted his researches in the Laboratoire biologique du radium, of Paris, which contains, beside a clinic, fully equipped departments of physiology and pathology. It was here that radium appliances were first placed at the disposal of the poor. It is from this institution that the work reviewed is issued—a guarantee in itself of its practical excellence.

Diseases and Deformities of the Foot. By John Joseph Nutt, B. L., M. D., Surgeon in Chief, New York State Hospital for the Care of Crippled and Deformed Children, etc. Illustrated. New York: E. B. Treat & Co., 1913. Pp. xii-293. (Price, $2.75.)

This brief and condensed volume has been prepared by the author for the use of physicians who have not had the time nor the opportunity for thorough study of this often neglected subject, who feel keenly their inability to prescribe scientifically and successfully for the many who consult them regarding their pedal conditions. The book is arranged in eleven chapters. The first chapter deals with the anatomy of the foot. It is classified and condensed to a most useful degree. Following this are chapters on physiology, examination, description, and treatment of diseases and deformities of the foot, and a concluding chapter on foot apparel. Although the description and treatment of some of the various diseases and deformities are unfortunately brief, they are good. The type is large and clear and the illustrations are excellent. This volume, while it contains nothing new, is well arranged, condensed, and to the point, and deserves the highest commendation.

Ueber die Pathogenese der Salvarsantodesfälle. Von Dr. Wilhelm Wechselmann, dirigierendem Arzt der dermatologischen Abteilung im Rudolf Virchow-Krankenhaus in Berlin. Mit 7 Textabbildungen. Berlin und Wein: Urban & Schwarzenberg, 1913. Pp. iv-84.

This book will hardly bear a logical scrutiny. It begins with a eulogy of salvarsan and ends with a description of 140 fatal cases. Some of these happened after the administration of mercury and salvarsan, and a considerable portion of the work is taken up with the attempt to prove that mercury, given antecedently, was the real cause of poisoning. According to Wechselmann, it is not always an easy matter to establish the genuineness of a case of salvarsan poisoning; so many different elements are concerned, a nephritis or some weakness of the kidneys being among the most significant. In spite of the evidence in the book, poisoning by salvarsan is not regarded as arsenical poisoning, yet in one case 0.05 per cent. of arsenic was found in the cerebrospinal fluid. It is also asserted that salvarsan has no toxic properties "worth mentioning." It is true that it may sometimes be poisonous. Ehrlich explains this as follows: By oxidation salvarsan is changed into a poisonous compound. This decomposed salvarsan is injurious to the kidneys. Beside an insufficiency of the kidneys, the case is aggravated by a possible insufficiency of other

organs. This delays the excretion of salvarsan and does even greater mischief than the renal insufficiency. The tone of the book seems to imply that in deaths after salvarsan, the cause is not so much salvarsan as bodily defect. The moral is, that mercury and salvarsan, given together, are dangerous. No one will cavil at the conclusion, that the most careful technic is needful, and that the urine and its *excretion* must be minutely studied.

Urologischer Jahresbericht. Einschliesslich der Erkrankungen des männlichen Genitalapparates. Herausgegeben von Prof. Dr. R. DU BOIS-REYMOND, Berlin, Prof. Dr. C. BRUNI, Neapel, Dr. N. CARRARO, Mailand, Dr. ALB. DAMSKI, Warschau, et al., und unter Mitwirkung von AUGUST BIER, Berlin, H. FENWICK, London, A. VON FRISCH, Wien, H. KÜMMEL, Hamburg, F. LEGUEU, Paris, und H. YOUNG, Baltimore. Redigiért von Prof. Dr. A. KOLLMANN, in Leipzig, und Dr. S. JACOBY, in Berlin. Literatur 1912. Leipzig: Dr. Werner Klinkhardt, 1913. Pp. 500

Our good friend the year book of urology appears once more upon our table and merits as usual unalloyed praise. We recognize no vital difference to distinguish this from previous volumes, which is to say that it maintains their high standard and forms the essential reference handbook for the urologist.

Die Cystenniere. Studien über ihre pathologische Anatomie. Von O. BERNER, Prosektor der Histologie an der Kgl. Frederiks-Universität zu Kristiania. Mit 159 zum Teil farbigen Abbildungen auf 26 Tafeln. Jena: Gustav Fischer, 1913. Pp. iv-284.

This investigation of the pathology and pathogenesis of the cystic kidney is found on an investigation of twenty-eight cases; twelve of the so called congenital type; in every case the kidney was studied by serial sections. The opening chapter discusses the three chief theories of the pathology of cystic kidney; viz., the theory of retention, that of congenital anomaly, and that of tumor. The author recognizes the first, is skeptical as to the second, and is inclined to believe that kidney cysts represent a relatively benign type of tumor, the malignant type corresponding to which is adenosarcoma of the kidney. The monograph by its judicious tone, by its careful and complete laboratory study, and by its numerous and illuminating illustrations may serve as a model of such documents. It does not pretend to settle forever the vexed question of the pathogenesis of kidney tumors, but is a most valuable contribution to this end.

Interclinical Notes.

The *Sun* for March 1st published an interview with a well known clergyman who is interested in putting a stop, if possible, to the cocaine habit by Federal legislation. He was asked where he supposed the habit to have taken rise, and replied that he believed it to have come from the West Indies. It is more likely that cocaine addiction in New York city began with the use of certain catarrh snuffs, the sale of which was enormous up to the year 1908—we believe—when the New York board of health put a stop to their sale and consequently to their manufacture. One of these snuffs sold largely in the British colonies, including Canada, and indeed may still command an immense business in those countries as well as in the States where there is no prohibitive legislation. Coincident with the suppression of the snuffs in New York we began to hear of the sale of the pure drug, taken by the habitué, it is significant to note, in the same way.

* * *

The fact that heroine is also taken by sniffing, probably through imitation, has led to the curious misstatement made in at least two largely circulated New York papers recently, that this comparatively newly isolated alkaloid of opium is a derivative of cocaine.

* * *

Of special interest to medical readers of the March *Century* is an eloquent tribute to the late Dr. S. Weir Mitchell, who contributed much of his poetry and several of his best stories to that magazine. The writer observed that Mitchell had the thin beard of the man who both thinks and does: "your thick, short bearded man does, and does not think, and your thick, long bearded man thinks, and does not do." Also, like Richard Watson Gilder, he had the respect for literature which the typewriter and cheap printing tend to destroy by making it easier to write and to publish and harder to read and to remember.

Meetings of Local Medical Societies.

MONDAY, *March 9th.*—New York Ophthalmological Society; Society of Medical Jurisprudence, New York; Roswell Park Medical Club, Buffalo; Williamsburg Medical Society, Brooklyn; New Rochelle, N. Y., Medical Society.

TUESDAY, *March 10th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); Associated Physicians' Economic League of New York; Medical Society of the County of Schenectady, N. Y.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine); New York Obstetrical Society.

WEDNESDAY, *March 11th.*—New York Pathological Society; New York Surgical Society; Alumni Association of Norwegian Hospital, Brooklyn; Schenectady Academy of Medicine; Medical Society of the Borough of the Bronx; Richmond County, N. Y., Medical Society; Dunkirk and Fredonia Medical Society; Rochester Academy of Medicine; Brooklyn Medical Association.

THURSDAY, *March 12th.*—New York Academy of Medicine (Section in Pediatrics); Gloversville and Johnstown Medical Association; Physicians' Club of Middletown; West Side Clinical Society, New York; Brooklyn Pathological Society; Blackwell Medical Society of Rochester; Jenkins Medical Association, Yonkers; Buffalo Ophthalmological Club; Jamestown Medical Society; Society of Physicians of Village of Canandaigua, N. Y.

FRIDAY, *March 13th.*—New York Academy of Medicine (Section in Otology); Society of Ex-Internes of the German Hospital in Brooklyn; Flatbush Medical Society, Brooklyn; Eastern Medical Society of the City of New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending February 25, 1914:

Cumming, H. S., Surgeon. Detailed, at the request of the president of the Maryland Conservation Association, to deliver an address at Johns Hopkins University on the Bearing Which the Pollution of Tidal Waters has on Health, February 25, 1914. **Hammon,** Harry B., Sanitary Chemist. Directed to proceed to Washington, D. C., for instruction in connection with sanitary disposal of industrial wastes. **Lavinder,** C. H., Surgeon. Detailed, at the request of the State Commissioner of Health of Virginia, to deliver a lecture on Pellagra, at the Medical College of Virginia at Richmond, February 24, 1914. **Lumsden,** L. L., Surgeon. Detailed, at the request of the president of the Maryland Conservation Association, to deliver an address on the Value to Maryland of Controlling Waterborne Diseases, at Johns Hopkins University, February 25, 1914. **Phelps,** E. B., Professor. Directed to proceed to Chicago, Ill., for the purpose of making necessary preliminary surveys in connection with investigations of the pollution of navigable waters; also to proceed to Cincinnati, Ohio, for conference with officer in charge of Service investigations, stopping en route at Indianapolis, Ind., for conference with the secretary of the State Board of Health, relative to pollution of the Ohio River and its tributaries by industrial wastes. **Rucker,** W. C., Assistant Surgeon General. Directed to proceed to Chicago, Ill., for the purpose of attending the annual mid-winter conference of the American Medical Association on Public Health, Legislation, and Medical Edu-

cation, February 23 and 24, 1914; also designated as the Service representative on the National Legislative Committee of the American Medical Association; also directed to deliver an address on Public Health Legislation, before the Federation of State Medical Boards of the United States, February 25, 1914, and on Common Sense in Public Health Administration, before the Chicago Medical Association, February 25, 1914. **Ruoff,** J. S., Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to report to the medical officer in charge of the Marine Hospital, Stapleton, N. Y., for duty and assignment to quarters. **Sweet,** E. A., Passed Assistant Surgeon. Detailed to make as complete studies as practicable of the migration of tuberculous persons in New Mexico in interstate traffic. **Weldon,** L. O., Assistant Surgeon. Relieved from duty at the San Francisco quarantine station and directed to report to Surgeon Woodward for duty at the Exposition Hospital. **White,** J. H., Surgeon. Granted one month and seven days' leave of absence from March 11, 1914; granted ten months and twenty-three days' leave of absence, without pay, from April 18, 1914.

Board Convened.

Board of medical officers established at San Francisco, Cal., for the reexamination of detained aliens. Detail for the board: Surgeon W. C. Billings, chairman; Surgeon M. W. Glover, member; Assistant Surgeon L. W. Jenkins, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending February 28, 1914:

Bailey, William O., First Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States on account of an existing emergency and will proceed to Fort Washington, Maryland, and report in person to the commanding officer of that post for duty and by letter to the commanding general, Eastern Department. **Denton,** William, First Lieutenant, Medical Corps. Ordered to travel from Fort Sam Houston to Fort Bliss, January 24th and 25th per verbal orders, department commander, approved. **Divins,** G. G., First Lieutenant, Medical Corps. Orders to proceed to Fort Bliss as attendant to enlisted men and return confirmed. **Hagood,** R. H., Jr., First Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States on account of an existing emergency, to take effect on or about March 1, 1914, and will then proceed to Vancouver Barracks, Washington, and report in person to the commanding officer of that port for duty, and by letter to the commanding general, Western Department. **Haig,** C. R., First Lieutenant, Medical Corps. Ordered from Plattsburg Barracks, N. Y., to Fort Ontario for temporary duty. **Kramer,** F., Captain, Medical Corps. Joined Fort McKinley, Maine, February 18th. **Wilson,** Elsworth, First Lieutenant, Medical Reserve Corps. Resignation accepted to take effect February 21, 1914.

The following named medical officers are relieved from duty in the Philippine Department, effective on or about June 15, 1914, and will then proceed to the United States and on arrival report by telegraph to the Adjutant General of the Army for further orders: Major William M. Roberts, Medical Corps; Captain Charles W. Haverkampf, Medical Corps; Captain Royal Reynolds, Medical Corps; First Lieutenant Leonard P. Bell, Medical Reserve Corps.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Navy for the week ending February 28, 1914:

Dollard, H. L., Passed Assistant Surgeon. Detached from the *North Dakota*, and ordered to treatment at the Naval Hospital, New York. **Halton,** E. P., Assistant Surgeon. Ordered to the Naval Recruiting Station, Boston, Mass. **Haynes,** J. P., Passed Assistant Surgeon. Ordered to the Naval Training Station, Great Lakes, Ill. **Leys,** J. F., Surgeon. Detached from Naval Training Station, Newport, R. I., and ordered to duty in connection with the fitting out of the *New York*, to duty when that vessel is placed in commission. **Lung,** G. A., Medical Inspector. Detached from command of Naval Hospital, Philadelphia, and ordered to the Naval Training Station, Newport, R. I. **Sheehan,** R. F., Passed Assistant Surgeon. Detached from Marine Advance-Base Brigade of Atlantic Fleet, and ordered home and to await orders. **Spratling,** L. W., Medical Inspector. Detached from the Naval Recruiting Station, Atlanta, Ga., and ordered to duty on the *Wyoming* as fleet surgeon of Atlantic Fleet. **Stalnaker,** P. R., Passed Assistant Surgeon. Ordered to the *North Dakota*. **Stokes,** C. F., Medical Director. Detached from the Bureau of Medicine and Surgery, Navy Department, Washington, D. C., and ordered to command the Naval Hospital, Philadelphia. **Strite,** C. E., Passed Assistant Surgeon. Ordered to the Naval Recruiting Station, Atlanta, Ga. **Wilson,** H. D., Surgeon. Detached from the Naval Recruiting Station, Boston, Mass., and ordered to the *New Jersey*. **Woods,** E. L., Passed Assistant Surgeon. Detached from the Naval Proving Ground, Indian Head, Md., and directed to await orders.

Births, Marriages, and Deaths.

Married.

August—Gaw.—In Cambridge, Mass., on Wednesday, February 18th, Dr. Albert August and Miss Hazel Gaw. **Benson—Knauss.**—In Philadelphia, on Wednesday, February 11th, Dr. C. I. Benson, of Port Deposit, and Miss Marjory Breckinridge Knauss. **Cates—Smith.**—In Washington, D. C., on Thursday, February 19th, Dr. B. B. Cates, of Knoxville, Tenn., and Miss Alice Elizabeth Smith. **Chesnault—Christy.**—In St. Louis, Mo., on Tuesday, February 24th, Dr. Charles K. Chesnault, of Little Rock, Ark., and Miss Helen John Christy. **Jones—Marrs.**—In Kansas City, Mo., on Monday, February 16th, Dr. George H. Jones, of Jefferson City, and Miss Mary R. Marrs.

Died.

Clarke.—In Baltimore, Md., on Saturday, February 14th, Dr. Thaddeus W. Clarke, aged sixty-two years. **Dunham.**—In Sioux Falls, S. D., on Wednesday, February 18th, Dr. W. O. Dunham. **Farnsworth.**—In New London, Conn., on Monday, February 23d, Dr. Frederick Farnsworth, aged seventy-two years. **Freeman.**—In Boston, Mass., on Friday, February 20th, Dr. Samuel Freeman, aged eighty-three years. **Hamilton.**—In Roseburg, Ore., on Saturday, February 7th, Dr. S. Hamilton, aged eighty-eight years. **Heilner.**—In Scranton, Pa., on Thursday, February 19th, Dr. Herbert F. Heilner, aged fifty years. **Hopkins.**—In Utica, N. Y., on Monday, February 23d, Dr. Ira Hopkins, aged eighty-one years. **Jones.**—In Atlanta, Ga., on Monday, February 16th, Dr. Lott H. Jones, aged eighty-four years. **Kluttz.**—In Troutman, N. C., on Monday, February 16th, Dr. Edmond E. Kluttz, aged fifty-eight years. **McKinnon.**—In York, Pa., on Monday, February 23d, Dr. Matthew James McKinnon, aged eighty-two years. **Moore.**—In Chicago, Ill., on Tuesday, February 17th, Dr. Daniel G. Moore, aged seventy years. **Neely.**—In Jackson, Tenn., on Friday, February 13th, Dr. M. S. Neely, aged eighty-one years. **Parsons.**—In Ossining, N. Y., on Thursday, February 26th, Dr. Ralph Lyman Parsons, aged eighty-six years. **Pringle.**—In East Newark, N. J., on Wednesday, February 25th, Dr. John Pringle, aged sixty-eight years. **Rose.**—In Highland Park, Mich., on Friday, February 20th, Dr. Paul Rose, aged forty-six years. **Scott.**—In Barren Plains, Tenn., on Thursday, February 12th, Dr. Miles Scott, aged fifty-eight years. **Seaman.**—In Alton, N. Y., on Monday, February 16th, Dr. Harry F. Seaman, aged seventy-one years. **Sharp.**—In Philadelphia, on Wednesday, February 18th, Dr. Frank A. Sharp, aged fifty-nine years. **Snively.**—In Pittsburgh, Pa., on Sunday, February 15th, Dr. William H. Snively, aged seventy-two years. **Welch.**—In Quincy, Mass., on Monday, February 23d, Dr. John F. Welch, aged fifty-nine years. **White.**—In New York, on Thursday, February 26th, Dr. Storm White, aged fifty-six years. **Wilson.**—In Burlison, Tenn., on Tuesday, February 10th, Dr. John F. Wilson.

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Original Communications.

DIVERTICULITIS OF THE COLON.*

BY JOHN F. ERDMANN, M. D.,

New York,

Surgeon, Post-Graduate Medical School and Hospital.

In October, 1911, I presented a paper before the New Haven County Medical Association at a meeting held in Waterbury, Conn., on the subject of diverticulitis of the colon, reporting twelve cases in all; acute, chronic, and chronic with malignant degenerations or coincident growths.

Since then I have operated in one chronic case, with associated malignancy, and two acute; one of the latter was in a male child under seven years of age, son of a physician (reported as Case XV), and have seen a fourth in a physician in whom the condition subsided (Case XVI).

The paper of Edwin Beer, published in the *American Journal of the Medical Sciences*, 1904, Some Pathological and Clinical Aspects of Acquired Diverticula of the Intestine, stands out to me as the best exposition as to cause, etc., of this disease. It is remarkable with what foresight at that time Beer announced his hypotheses as to the terminations, etc. Today most of his conclusions have been proved correct. Hartwell and Cecil, *American Journal of the Medical Sciences*, August, 1910, sum up their belief as to the etiology of this disease in the following manner, after considering various theories and arguments: "We therefore are driven to the conclusion that up to the present time no complete explanation of the primary cause of intestinal diverticula has been offered. The most that can be said is, that for some cause, a weakness exists in the intestinal coats, and by reason of this weakness a pouching of the coats take place, when any undue pressure arises."

Some of these arguments as to causation collated by Hartwell and Cecil, and Beer, are among the following: Graeser attributed the cause of the formation of diverticula to hernial protrusions which follow the emerging veins after taking a wandering course through the intestinal walls, finally reaching the subserosa. These conclusions of Graeser were based upon twenty-eight cases, from which he made over one thousand sections. Sudski made a series of observations, contending that those of Graeser were at fault, being chiefly accidental. Klebs noted that the protrusions occurred in close relation to the points of entry and exit of the bloodvessels in the gut, along the mesenteric attachment, and offered a series of arguments for these protrusions occurring here, chief among them being that the intestinal wall is weakest at the mesenteric attachment.

These arguments of Klebs very naturally are fallacious, as diverticula frequently occur in the convex border of the intestines. I myself have recently operated upon five and have seen a sixth in consultation, in which these outputs were in the convex or other free surface of the sigmoid. Klebs's view of mesenteric traction acting or tending to weaken the wall, thereby being a productive cause, may be given some considerable weight.

Old age as a factor is disproved by Ashurst's case of a boy of seven years, and the two cases of Hartwell and Cecil of seven and ten years, as well as seven of my patients who were under thirty-five years, one being a male under seven years (Case XV). That the entire intestinal tract from the cervical esophagus to the lower sigmoid is subject to this condition is more than evident by reference to the literature of the present day.

In a paper, Intussusception Due to a Meckel's Diverticulum, read by me before the Society of the Alumni of Bellevue Hospital, February 2, 1898, and published in the NEW YORK MEDICAL JOURNAL for April 16, 1898, I reported a series of cases with illustrations of diverticula of the small intestines. In one of these cases the protrusion was the productive cause of intussusception. On several occasions I have removed appendixes containing from one to three diverticula. The rectum is rarely involved by these protrusions, possibly owing to extra musculature and the greater protection to the walls of this portion of the gut by its fixity to the pelvic wall and surrounding viscera.

While various classifications as to false and true, acquired and congenital, have been in vogue, that of true in which all coats are present, and the false in which one and usually two coats are absent, is the more popular and desirable for a working basis.

The number of cases with diverticula found upon autopsy that are merely entities, and not pathological causes of the demise, proves that diverticula, like gallstones, etc., are harmless until such secondary changes arise as to be productive of an inflammatory or destructive nature.

These pathological conditions may be allied to those arising in the appendix, from a simple catarrhal condition—better called acute—to exudative and occlusive changes, and finally may be surmount-

*Read before the Rhode Island State Medical Association, December 4, 1913, and the section in surgery, New York Academy of Medicine, January 2, 1914.

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[illegible] occasionally in the appendix and in ulcerative changes in other viscera.

The diseased processes to which diverticula may [illegible] and with subsidence, (c) abscess formation, (c) adhesions to contiguous structures or not, with danger of obstruction by bands, etc., and (d) that of perforation either by means of ulceration of the coats or gangrenous intervention with all the fulminating evidences of a peritonitis, etc. Slow perforation into contiguous viscera chiefly concerns the bladder, but is also occasionally productive of a retroperitoneal abscess, with marked burrowing in the instances where the diverticulum ruptures between the mesenteric folds. In the subacute or even recurring type, we may have repeated attacks of soreness, pain, tenesmus, etc., accompanied or not by a later change, that of infiltration, resembling carcinoma so closely as to have deceived operators time and again. This latter condition may be accompanied by a slow perforation, or by such encroachment upon the calibre or lumen of the gut as to become obstructive. Finally there may occur the implantation of carcinoma upon a former benign condition, as cited in Cases IV and XIII.

Acute diverticulitis, either in the esophagus, small intestine, or colon, is usually due to irritative retention, of food in the esophageal variety, intestinal contents in the small intestine, and feces in the large intestine. In one of my patients a husk of rice or oatmeal imbedded in a fecal bolus was the irritant lodged in one of the many pouches contained in a nine inch section of the sigmoid removed.

In the so called peridiverticulitis cases of Wilson he designates those in which the mucosa only is involved. It seems to me that this is rather a fancy classification, as were the former terms "appendicitis" and "periappendicitis"; in all probability there is some microscopical source of infection, vascular pathology or wall thinning necrosis, as seen in appendicitis cases in which the mucosa from its macroscopical appearance seems to be an innocent participant.

That recovery takes place in some instances cannot be doubted, any more than that such instances also arise in the diseased appendix, etc.

Symptomatology. In the acute cases we have what formerly was known as a transposed appendix with appendicitis. We know now that such conditions are rare, and by operation and autopsy observation, enough diverticulitis cases have been found to prove a distinct disease. The further symptoms are allied to those of an acute appendicitis with leftsided instead of rightsided evidences.

The following is a report of Case I from my own records, and in the *Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, 1905 to 1909.* Note in this history the similarity of symptoms to a case of appendicitis except the final left side localization.

[illegible] physician's sigmoid [illegible]. The patient's father had died of carcinoma, and the mother of tuberculosis. The patient had been healthy until his fifteenth year, when he had had an attack which was essentially like appendicitis, save that the localization was in the left iliac fossa. Between the ages of fifteen and twenty he experienced intermittently mild paroxysms of pain in the left lower quadrant. When twenty years of age he was put to bed for five weeks with a fever of 104 and 105° F., chills, vomiting, distention, obstinate constipation, and severe abdominal pain. After this his general health was good until he was thirty-two years old, when there occurred another attack of abdominal pain, with vomiting and fever, and localization in the left iliac fossa. This was similar to the attack he had had at fifteen. In twenty-four hours a mass as large as a child's head had formed in the region of the sigmoid. Under medical treatment it disappeared in four weeks, and was thought to have been an abscess, which had discharged by the bowel. The patient was then quite well for a year. When thirty-three years old he was kicked in the abdomen by an insane patient, and a small mass formed in the left iliac fossa. There was a large quantity of pus discharged by urethra. This material was examined every day for a month, but no tubercle bacilli could be found. The patient recovered again under medical treatment, but for some months following there was an occasional fever; then he was well for four years. On May 3, 1905, he had his third sharp attack, which resembled appendicitis, but with the localization on the left side. A mass formed in three days. Cystoscopic examination and catheterization of the ureters showed only some redness on the left side of the bladder. An abscess was drained by me. There was a marked improvement, and the patient went back to work, but the sinus had persisted to the time of examination. In October, 1905, five months later, there was a fourth attack. A diagnosis of appendicitis with leftsided abscess was made. A median incision disclosed a normal appendix. A small amount of pus was obtained and the sinus resulting from this had also persisted up to the time of the examination. Occasionally there had been a discharge of material having a fecal odor, and twice coproliths had been obtained. The bowels had been moving quite satisfactorily, and the patient was very well nourished, markedly inclined to obesity, and able to work, having lost but three days on account of a mild attack of pain and fever since examination. The fistulæ still exist.

Further comments on the history. Normal appendix. In searching the sigmoid, during the second operation, for further difficulties, I found adhesions of two of the omentulæ passing across the sigmoid, making a partial obstruction. This condition was released by bisection. Doctor C. has since reported his condition much improved, with opening and closing fistulæ for the past few years.

I am frank to confess that I was at a loss for a diagnosis in this case until Doctor C. had seen the Mayos, who referred him back to me, since which time, and as a result of reading the first article published by W. Mayo on this subject, I have been exceptionally careful in my diagnoses in the sigmoid region.

CASE II. Mrs. D., aged thirty-five years, acute abdominal attack June 14, 1911. Seen by me on the fourth or fifth day; sharply distended and acutely tender all over. Temperature 102°F., pulse 126. Greatest tenderness in the right lower quadrant. Abdominal section through the right rectus. Appendix not the cause of the trouble. Large quantity of pus in the abdomen; right tube normal; palpated left tube through the same incision, which revealed nothing. Further exploration with the hand through the right rectus incision revealed a mass on the sigmoid. I then saw a perforated diverticulum, with a densely infiltrated and inflamed epiploon. Left rectus incision made after removing the appendix; sigmoid drawn up; perforation closed with pursestring suture; epiploon tied off, and a second row of sutures taken over the site of the perforation. Drainage. Recovery.

The conditions have been proved to be allied absolutely to those of the appendix, acute fulminating, generally spreading peritonitis, acute abscess formation, perforation into the bladder or bowel, or retroperitoneal abscess formation, these being due to perforation between the layers of the mesentery.

In the rapidly spreading variety, no symptom is likely to be of sufficient importance to be diagnostic, necessitating therefore an exploration for definite diagnosis; if one, however, bears in mind the

position of the sigmoid, the location of the pain, the mass, and rigidity, one can feel fairly sure of his diagnosis.

In the subacute variety one arrives at a diagnosis more readily, as the patient complains of pain in the left lower abdomen, and may have recurrent attacks, with constipation to partial obstruction. One such case was readily diagnosticated by me during the past two years, in the patient from whom I removed nine inches of the sigmoid.

In the chronic variety with marked infiltration one has the symptoms of a mild to a marked obstruction, with occasional objective evidence of tumor, without the presence of blood in the stools or emaciation, as seen in the patients with carcinoma.

Case V. Diverticulitis; operation for carcinoma. Mrs. H., aged fifty years, sent to me by Dr. E. Hill, May 17, 1909. History vague, but present condition one of obstruction of the bowel for several days. On vaginal examination, a mass involving the entire cul-de-sac, hard and fixed, was found. Rectal mass five and a half inches up showed some erosion. Abdomen tender in the left lower quadrant, with a questionable palpable mass. Owing to fixity and extent of infiltrate an artificial anus was advised. On abdominal section the exploring hand bore out the previous diagnosis. Artificial anus.

The patient, three weeks after the operation, was having fairly frequent stools by the anus, although the major portion of the feces was passing through the preternatural opening. This patient has been under observation to the present date, December, 1911, and has gained almost forty pounds. Her preternatural anus has closed, and she has had her bowel movements by the anus for almost a year. There has been a fistula at one angle of the original wound, remote from the preternatural anus. The rectal and vaginal examinations made about every four months show positive subsidence of the mass in every sense. This I take to have been a case of rather sharp or aggressive infiltrating diverticulitis, producing an obstruction, instead of a carcinoma.

Case XI. Dr. P. O'H., aged forty-eight years, with a history of a distinct intestinal crisis resembling appendicitis, Christmas Day, after the indulgence of a hearty meal; blood count of 19,500 and differential of 84 per cent. on the termination of the third day was found. Temperature 102° F. Pain localized in the left iliac, extreme tenderness. *Diagnosis* made at that time: Perforated or gangrenous diverticulitis. Patient refused operation for two days. Local conditions becoming more severe, he finally consented at the termination of the fourth day. Under the anæsthetic, a mass was felt in the left side. Operation found exudate at the greater curvature of the sigmoid, two ounces of pus, engorgement of several epiploons, one bordering on a gangrenous condition. This particular one was cut open, showing a perforation through the coats of the intestine, the sinus leading into the fat mass holding an enterolith at its apex. Excision of the epiploon. Inversion suture with epiploon patch, drainage for three days. Patient had gone through a leftsided and then a rightsided phlebitis, with recovery.

It will be observed that this case is one of a diverticulitis, also, involving the greater convexity rather than the site of mesenteric attachment.

Operative treatment resolves itself into a consideration of the various types. In the acute perforative or gangrenous type the same treatment that one gives to an appendix or intestinal perforation holds good. In the chronic infiltrating type with partial obstruction, removal of that portion with anastomosis is the operation of choice, while in the obstructive cases a primary artificial anus may be formed, if deemed advisable, with secondary removal and final closure.

Following are some cases previously reported with additional comment:

Case I. Seen during November, reported gain in weight, no fistula for three years.

Case II. Mrs. D. in excellent condition.

Case III. Recovery.

Case IV. Male, aged sixty-four years, carcinoma on diverticulum, died recently. Lived two years with artificial anus.

Case V. Mrs. H. in excellent health. I am now more than before, sure that this was an obstructive diverticulitis, mistaken for carcinoma. The patient has all her bowel movements at the present time by the rectum. The artificial anus had been closed for over eighteen months.

Case VI. Patient in excellent condition.

Case VII. Lost sight of.

Case VIII. H. M., well, no subsequent attacks to date.

Cases IX and X. Lost sight of, although Case IX was reported about one year ago as fully recovered.

Case XI. Dr. O'H., perfectly well.

Case XII. Aged eighty-three years now. Bladder, pus, etc., disappeared for some months. Condition excellent.

Case XIII. Mrs. S., aged fifty-five years, rapidly growing cystopapilloma of ovary. Abdominal section, removal of the growth and large annular mass in the sigmoid. This was excised and upon gross examination proved to be a mass carcinomatous in appearance, associated with diverticula. Pathological report bore out the clinical diagnosis, "diverticula of the sigmoid with adenocarcinoma." Patient died about one year later of general peritoneal carcinosis.

Case XIV. Mr. M., aged thirty-four years, came into my office at the suggestion of Doctor Unger. Temperature 102° F., large tumor in the left flank, history of sudden sharp pain in the left side, tenderness, vomiting, etc. Diagnosis, acute diverticulitis. Sent to Post-Graduate Hospital. Operation confirmed the office diagnosis. Several of the omentula deeply injected. One, gangrenous, tied off; pelvic drainage instituted. Recovery.

Case XV. Male child, aged six years and nine months. Sudden pain in abdomen. Temperature 105° F. When seen by me, ill five days. Leucocyte count 35,000 to 45,000. Differential 91 per cent. Examination: Patient pale, emaciated, reserved in his replies. Palpation revealed tender and rigid hypogastrium with a mass evident, rigidity on the right side. Rectal examination: Marked tenderness and infiltration, chiefly to the right. *Diagnosis,* acute appendicitis. *Operation* two hours later. Usual Kammerer incision. Removed pus in right half of pelvis, but no cecum down. Search for appendix revealed a chronic, foreign body, noninflamed appendix in the loin, well away from the area of pus. Appendix removed, pelvis explored. Lower sigmoid and bladder thoroughly adherent, dense plastic exudate covering the sigmoid. About five to seven inches of the sigmoid infiltrated, deeply engorged and congested. The omentula markedly involved; one, almost gangrenous, tied off. Pelvis drained through the lower angle of the appendix incision.

While the last case did not actually demonstrate a true diverticulum, nevertheless I am led to class it as a diverticulitis for the reason that many of these outputs project into the omentula and produce just such a lesion.

Ransohoff in the *Annals of Surgery,* 1913, reports two children with this disease, and calls them cases of "perforating sigmoiditis and perisigmoiditis." His first patient can be considered typical as to its gross pathology, and unique as to the age, three years; the second, a female, nine months, I am inclined to doubt with him the involvement of the sigmoid. He states that an abscess in the "sigmoid mesocolon" was opened. "The sigmoid was not looked for as the abscess was well walled off."

Case XVI. Dr. W. C., aged fifty years, seen in July. Was seized with an attack of nausea and vomiting, pain in his left abdomen, some week or ten days before my visit. At the time of my call he gave the additional facts of no loss in weight, no abdominal distention of any kind preceding this attack. Pain localized itself more as the first

twenty-four hours passed by. Mass formation, tenderness on pressure, slight elevation of temperature, 99.5° to 102° F. first three to four days, then the condition began to subside, remaining practically stationary up to the date of my visit. Examination revealed a mass in his left lower quadrant, fairly tender, slight amount of rigidity. Temperature 100° F. Blood count, negative. Diagnosis of diverticulitis, agreed upon by several associates; subsided without operation. Patient has since been seen and reported normal condition.

SUMMARY.

1. Left sided appendicitis is the rare rather than the occasional cause of involvement of the left side.

2. Left sided pain, with mass or not, with tenderness, rigidity, etc.; one can feel relatively certain of diverticulitis.

3. In previously known or surmised malignancy of the sigmoid, then such acute evidences point to ulcerating perforation above the malignancy.

4. Prolonged chronic diverticulitis does frequently become cancerous.

5. Many heretofore reported cancer cures of this gut were cases of chronic diverticulitis only.

60 West Fifty-second Street.

EXPERIMENTAL STUDY OF TUBERCLE BACILLI SUBMERGED IN WATER.

By Randle C. Rosenberger, M. D.,
Philadelphia,
Professor of Hygiene and Bacteriology, Jefferson Medical College.

During the past several years, examinations of the feces from several thousand persons,[1] including those apparently in good health and others suffering from undiagnosed affections, revealed the presence of the tubercle bacillus in a large number. In at least 150 instances of known tuberculous infection the organism was present in the feces in all, or in other words every person who suffered from tuberculosis, no matter where the seat of the disease, constantly discharged the tubercle bacillus in the feces.

The enormous number of persons suffering from tuberculous infection, and the countless number of bacilli discharged daily by those patients directly into the sewage systems of the city, or into a stream or tributary of some large river, led me to investigate the vitality (?) and virulence of tubercle bacilli in water mixed with a small quantity of feces and urine.

For this purpose I performed two sets of experiments, which were commenced early in 1907.

EXPERIMENT I.

A large white glass bottle, capacity 6,000 c. c., with a wide mouth ten cm. in diameter, was used, into which about thirty grams of feces infected with tubercle bacilli were placed, together with 100 c. c. of urine and 6,000 c. c. of water. The receptacle was kept uncorked, at ordinary room temperature and in full daylight, though not at all times in direct sunlight. After standing for several months, it was exposed to the direct rays of the sun for twelve days, the sunlight playing upon the mixture for at least three hours of each day.

[1] My first studies, The Significance of Tubercle Bacilli in the Feces, were published in the American Journal of the Medical Sciences, 1908.

At the end of this time—three months after mixing—the water was perfectly clear, and from the bottom of the vessel a small quantity of the sediment was examined and found to contain large numbers of tubercle bacilli and a few other bacteria. A small quantity of the sediment was injected intraperitoneally into several guineapigs and subcutaneously into other guineapigs. All these animals died after several days from septicemia. Three months later, after being kept at ordinary room temperature, as some of the water had evaporated it was again made up to 6,000 c. c. Examination of the precipitate still showed large numbers of tubercle bacilli. A small amount of sediment was centrifugated, the supernatant fluid poured off, and sterile water added, and again and again treated in this manner and centrifugated until no odor was detected. Inoculations into guineapigs of this washed and rewashed sediment resulted in the death of the animals from a septicemia after several days.

At the end of a year, during which time the mixture was kept at ordinary room temperature in diffuse daylight, spreads from the sediment showed tubercle bacilli which still retained their morphological and tinctorial character.

Inoculations and feeding experiments were now made upon guineapigs, rabbits, and white mice, using the sediment in the "fresh" state and also in the dried condition. Where the animals were fed, the sediment was simply put upon bread and cabbage, and in the inoculation experiments subcutaneous and intraperitoneal methods were employed.

EXPERIMENTS UPON ANIMALS.

Study 1.—The feces of several white mice fed upon bread soiled with the sediment of the mixture showed tubercle bacilli in seventy-two hours. The animals died in four weeks. No tuberculous lesions were present in any of the viscera, yet congestion of the lungs was present in all.

The presence of typically staining tubercle bacilli in the feces of these animals showed that even after twelve months' submersion in water, and passing through the intestinal canal, they still retained their acid and alcohol-fast properties.

Thirty days after feeding two half grown guineapigs upon bread saturated with the sediment I was able to demonstrate tubercle bacilli in the feces. At autopsy an enlarged peribronchial gland as large as a grain of rice was found, and histological study of the lungs showed perivascular cell accumulations with consequent pneumonia. Few tubercle bacilli were present in the enlarged gland.

Study 2. In this experiment the sediment was buried 1.5 cm. in soil, and exposed in a back yard where direct rays of the sun played upon it for at least four hours a day for four days, making sixteen hours' exposure. After the four days had elapsed this soil was collected and washed, or rather mixed, with 200 c. c. of sterile water, strained several times through cheesecloth to rid it of large particles of dirt, and then filtered through ordinary white filter paper. After centrifugating the filtrate several times, the resulting sediment was examined for tubercle bacilli and several organisms were observed in spreads.

The centrifugated sediment, about two c. c. in all, was injected subcutaneously into the right flank of a large male guineapig. Four or five days later, an area of induration fully one cm. in diameter, developed. Caseous material was formed, and tubercle bacilli were the only organisms found in spreads.

No visceral lesions were demonstrable to the naked eye after six weeks' time, yet areas of bronchopneumonia and cellular infiltration (perivascular) were observed histologically.

Study 3. In this instance the sediment about fifteen c. c.—was collected in a sterile Petri dish and allowed to dry out completely. It was then exposed, with the upper part of dish removed, to the direct rays of the sun, through a window, for five hours a day for eight days; forty hours' exposure to direct sunlight. At the end of that time the dried material was scraped off and 0.1 gram, by weight, was mixed with two c. c. of sterile salt solution and injected subcutaneously into several guineapigs.

All of the inoculated animals presented a local area of induration, which in ten days' time became semifluctuating. After fifteen days the local lesions were opened and the semisolid caseous material was suspended in sterile salt solution and inoculated into the subcutaneous tissue of other guineapigs. At the end of a week an indurated area was very apparent at the site of inoculation in each animal, together with the formation of caseous material. Tubercle bacilli alone were demonstrable in spreads. The lungs of these animals showed areas of bronchopneumonia and cellular infiltration with very suggestive tubercle formation.

An inoculation into a rabbit (subcutaneously) with the dried sediment remaining from the foregoing experiment —which had been kept for eighty-two days at ordinary room temperature, including the days it was exposed to the sun—resulted in the formation of four nodules, 0.8 cm. in diameter, which upon incision were found caseous and contained tubercle bacilli. These nodules, after being relieved of their contents, healed in three weeks' time.

Inoculations were made upon glycerin agar with the material from the lesion of this rabbit, and incubated at 37° C., but no growth was demonstrable at the end of thirty days.

Inoculations were also made subcutaneously into guineapigs, but no local reaction had taken place at the end of thirty days.

Study 4.—In this experiment I tried to ascertain whether the bacilli were dead or simply lying dormant. For this purpose I performed passage through several guineapigs. The *first* animal inoculated subcutaneously with the sediment manifested a local caseous lesion in six days. With this material, which contained tubercle bacilli, a *second* guineapig was inoculated, and this resulted in a local caseous lesion (in six days), which contained tubercle bacilli. From the second animal a *third* was inoculated, and this animal manifested a much larger area of infection in the same time, the material from this lesion being inoculated into a *fourth* pig. The animal manifested a local lesion within six days and a *fifth* pig was inoculated with material from the lesion of the fourth. A *sixth* animal was inoculated with the material obtained from the fifth pig, and in the former developed a local lesion within six days, somewhat larger than in any of the preceding animals. In the last animal (the sixth), developed a local lesion containing tubercle bacilli, as in the other animals. At the end of a month tubercle bacilli were demonstrable in the feces.

Inoculations were made upon glycerin agar from the lesions of the fourth and sixth animals and incubated at 37° C. for thirty days, but no growth developed.

Histological examination of the lungs from each of these animals (after six weeks' time) showed suggestive tubercles with bronchopneumonia, and in some of them tubercle bacilli were clearly seen. The lungs of the sixth animal showed tubercle visible to the naked eye. The spleen was enlarged and studded with tubercles almost a pinhead in size. This proves that passage from one animal to another increased the virulence of these organisms. (I was convinced by these results, after passage, that some of the tubercle bacilli were still viable and that this procedure [passage] could be gone on with indefinitely.)

Study 5.—In the subcutaneous and intraperitoneal inoculation experiments upon guineapigs from 0.5 c. c. to three c. c. of sediment were used. One animal died in two days (from a probable septicemia) as a result of subcutaneous inoculation of one c. c. of sediment. At autopsy there was a hemorrhagic infiltration around the site of inoculation, which extended to the musculature of the thorax, and just a shred of fibrin (?) in the peritoneal cavity. Tubercle bacilli were found in spreads made from the point of inoculation, the muscles of the thorax, from the peritoneal adhesion, and in the feces.

In all the other animals localized lesions developed, containing caseous material and tubercle bacilli. After six weeks' time they were sacrificed, but no visceral lesions were demonstrable to the naked eye. Upon histological examination of the lungs, well marked tubercles and consequent bronchopneumonia were evident, together with the presence of tubercle bacilli.

Study 6.—Ten c. c. of the sediment was exposed in a testtube for thirty minutes in the Arnold steam sterilizer, and one c. c. was inoculated subcutaneously into a guineapig.

In seven days there was a small mass, 0.5 cm. in diameter, containing caseous material and tubercle bacilli.

Histological examination of the lungs showed very extensive cellular infiltration, perivascular cell accumulation, and bronchopneumonia.

Study 7.—July 27, 1910, *three years* after initial experiments were begun, I took some of the sediment still remaining in the jar and inoculated 1.5 c. c. subcutaneously but deeply into a guineapig.

At the end of three weeks, the animal died with a well marked tuberculous lesion at site of inoculation, perforation of abdominal wall (at site), and adhesions from this lesion to the intestine binding the latter down to the abdominal wall. Numerous tubercle bacilli were observed in spreads made from the process.

EXPERIMENT II.

The same sized bottle was used, only here it was made of brown glass. The water was infected with five c. c. of a homogenized attenuated culture of the human tubercle bacillus and about fifteen grams of feces free from tubercle bacilli, and exposed to the same conditions as the mixture in the first experiment. At the end of a year inoculation experiments were made as in the foregoing studies, with practically the same results.

In addition, a rabbit was inoculated subcutaneously with three c. c. of the sediment, and in six days there was a large, semifluctuating mass, four cm. in diameter, which showed a tendency to still greater enlargement. At the end of two weeks this had reached a diameter of six cm., and an incision was made into the mass. Several pockets of semisolid caseous material were exposed, which contained few tubercle bacilli.

A small quantity of this material was suspended in normal salt solution and inoculated into the subcutaneous tissues of guineapigs. Seven days later, an indurated area was evident at the site of inoculation in each animal, with the formation of caseous material and the presence of tubercle bacilli, but no other organisms.

REMARKS

These studies, just cited, show that there is danger and very great danger in the careless disposal of the feces of tuberculous individuals. It seems proved beyond any doubt that the tubercle bacillus when discharged into water is not only capable of existing for a very long time, but of retaining its virulence. This question is also of great moment in the light of experiments conducted by Schroeder and Cotton, Schroeder, Reynolds and Beebe, and Schroeder and Mohler upon the subject of the giving off of tubercle bacilli in the feces of tuberculous cows and from cows in apparently good health. To emphasize the points made above I will append the conclusions of some of these observers.

Schroeder and Cotton (*Bulletin No. 99*, Bureau of Animal Industry, May 11, 1907) have shown that tubercle bacilli are disseminated with the feces of tuberculous cattle, and they also assert that tubercle bacilli swallowed by cattle are to a great extent passed entirely through the digestive tract

and out with the feces without the loss of infectiousness. It is not alone the feces of visibly affected cattle which disseminate tubercle bacilli in a way that is dangerous, but also the feces of cattle so slightly affected that the diagnosis of tuberculosis with them depends entirely on the application of the tuberculin test.

The observations made by these writers definitely show that the frequency with which milk contains tubercle bacilli is greatly underestimated, especially when it is obtained in the customary way from tuberculous cows with healthy udders, or from entirely healthy cows in a tuberculous environment. They roughly estimated that 37,800,000 bacilli were given off daily in an average amount of feces (thirty pounds), and it is possible that several times this number were given off, but could not be demonstrated.

These authors also lay stress upon the picture of apparent health of some cows that are scattering tubercle bacilli in the feces and those that are seriously affected with the disease, and as it is almost impossible to determine the disease from physical condition alone, reliance must be placed on the tuberculin test.

In a later paper (*Circular No. 118,* Bureau of Animal Industry, December 21, 1907) Schroeder mentions that forty per cent. or more of dairy cows expel tubercle bacilli from their bodies in a way dangerous to the health of other animals and persons. He also mentions the occurrence of cow dung in the milk and of 172 samples of milk distributed in Washington, D. C. All but fifty-one showed dirt of some kind, as fecal matter, hair, epithelial and other cells, bacteria, and much other extraneous matter.

Milk as a beverage is not the only means by which tubercle bacilli enter the system, as they are found in butter, cheese, and other articles of diet made from milk. Beninde and Herr (*Zeitschrift für Hygiene,* XXXVIII, p. 180) conclude that skimmed milk, buttermilk, cream, butter, and centrifuge slime (or sediment obtained from infected milk) contain tubercle bacilli, and that the most intensely infected of these substances are butter and centrifuge slime. Among 444 samples of butter tested by them, sixty, or over thirteen per cent., contained tubercle bacilli.

Broërs (*Zeitschrift für Tuberkulose,* X, 3) asserts that in Utrecht the frequency of tubercle bacilli in milk is ten per cent. and shows that they may be found in skimmed milk, cream, buttermilk, and butter and retain their virulence a long time (four months or longer, Schroeder). Brittlebank (*Experimental Station Record,* Department of Agriculture, England, XVIII, p. 581) found that from three to twelve per cent. of the milk supplied to Manchester, England, contained tubercle bacilli. (These authorities are cited from Schroeder's article.)

Reynolds and Beebe (*Bulletin No. 103,* University of Michigan Agricultural Experiment Station, October, 1907) found that the nasal secretion, in but one of fourteen cattle, contained virulent tubercle bacilli, while the feces of this animal also contained virulent vacilli. The feces of forty-four other cattle—which had previously given a positive tuberculin test—proved nonvirulent to guineapigs.

While the results of these writers do not correspond with the work accomplished by Schroeder and Cotton, it seems proved beyond any doubt that an apparently healthy animal may give off virulent tubercle bacilli in the feces.

Pigs may become tuberculous by feeding upon the feces of cattle suffering from tuberculosis, as has been proved by Schroeder and Mohler (*Bulletin No. 88,* Bureau of Animal Industry, Washington, D. C.). As a result of these experiments a warning is sounded as to the custom of running hogs after cattle in the feed lot.

Another question of very great moment is that of the disposal of sewage. If the septic tank method is in use and if this sediment or sludge is used afterward for fertilizing purposes or dumped into streams, is there not a possibility of tubercle bacilli clinging to larger particles of the sediment? And if spread upon fields or vegetables, is this not mixed with the soil, and does it not seem probable that the tubercle bacillus will cling closely to particles of earth, and thus resist the sun and ordinary atmospheric conditions? Especially could this be so in certain countries, as China, with rapidly growing vegetables, as celery, salads, etc.

Slaughterhouse refuse dumped into streams, especially in small towns or villages, may contain infected material, and this may also play a part in the contamination of the water supply.

Take again the question of the feces of the tuberculous cow in a herd: Is she not dropping her daily amount of feces (thirty pounds) and is this not dried in the pasture and blown around on grass and hay, and are not other cattle predisposed in this way to the disease? Then again she may defecate in the stream, where it is washed down into some creek or river; or, probably from the barnyard, she may infect the well or spring water; or from the nasal secretion the grass or soil may become infected, and this may be washed into streams as a result of freshets, floods, etc.

The pollution of streams or sewage with tubercle bacilli laden feces is a very grave question, and as the death rate of children from tuberculosis is very high, the rigid inspection of cattle and the subjection to the tuberculin test should be more regularly and systematically enforced. Even where only one cow in a herd is infected, that is enough to spread the disease to other animals. It is also a well known fact that a cow may be quite extensively diseased before the physical appearance of the animal suggests tuberculosis.

The fact that disease of the udder is not necessary for the presence of tubercle bacilli in milk, also speaks strongly for more care in eliminating the smallest quantity of stable "dirt" from the milk, as this "dirt" has been proved to contain tubercle bacilli.

Further, pasteurization of milk, as suggested by Theobald Smith, should be resorted to, and thus prevent so far as possible the transmission of tuberculosis to infants and children. By heating the milk for twenty minutes at 60° C. it has been shown that most of the pathogenic organisms and poisonous products are destroyed without impairing the nutritive property of the milk.

As regards the results of my experiments upon guineapigs and rabbits: If the tubercle bacilli, so kept in water for at least a year, will produce local as well as visceral lesions, and the material and bacilli removed therefrom will produce the same lesions in another animal of the same or different species, avirulent or virulent bacilli taken into the body with water may produce localized lesions in the human subject.

It is a fact well known to pathologists that in the lungs of eighty or ninety per cent. of bodies that come to autopsy, there are small areas which are defined as "healed in" areas of tuberculosis. Now, might not these areas be the result of lodgement of tubercle bacilli taken in water or milk? The formation of this lesion would correspond exactly with the formation of a local lesion in a guineapig, and the resistance of the animal or man prevents the further progress of the disease. The lungs, in experimental animals, being the first organs involved, either through intraperitoneal, subcutaneous, or intravenous inoculation, it is more than likely that these local pulmonary lesions in man may be the result of lodgement of virulent, avirulent, or even dead bacilli.

As Prudden and Hodenpyl, Rosenau and Anderson have proved that dead tubercle bacilli bring about the same histological changes in organs that live bacilli will, it does not seem that my contention of these "healed in" areas in the human subject being due to infected water or milk is at all unreasonable. It seems also to my mind that these experiments suggest that the tubercle bacillus can exist indefinitely, and that the alcohol and acidfast properties of the organism, when submerged in water, are retained for an indeterminate time.

THE TECHNIC.

In the examination of spreads of the feces and sediment the staining resorted to was the application of carbol fuchsin for fifteen minutes, or staining the preparation over night (eighteen to twenty-four hours). The greater part of the solution was drained off, then placed in Pappenheim's solution for at least five minutes, and sometimes as long as twenty minutes.

In this technic *all other acidfast bacilli, such as the numerous grass and butter bacilli and the smegma bacillus, are entirely decolorized and stained the color of the counterstain.*

I have taken eleven different strains of butter and grass bacilli and the smegma bacillus, placed them in feces for from one to twelve days, and stained them according to the foregoing technic; but they never retained their acidfast property after twenty minutes. In other words, *the tubercle bacillus was the only organism that retained the red dye after prolonged immersion (116 days) in Pappenheim's solution.* The spreads were always made so that the organisms occurred as single elements and not in masses. Whenever small masses or groups appeared, decolorization was not always complete, but where single elements occurred, the organisms were completely decolorized. The bacillus lepra resisted Pappenheim's solution fourteen days, while the bacillus found in Johne's disease seems to be equally as alcohol and acidfast as the human tubercle bacillus.

CONCLUSIONS.

1. The most important point is insistence upon the complete disinfection of the feces of a tuberculous subject, as well as of the sputum and urine, with a powerful germicidal agent.

2. More rigid inspection and examination of dairy cattle for the detection of tuberculosis, and the presence of tubercle bacilli in milk and feces of apparently healthy animals.

3. The water supply of a village, town, or city should be safeguarded principally by (a) the prohibition of dumping sludge in streams; (b) the proper filtration of water; (c) where there are no facilities for filtration, recommending the boiling of water for drinking purposes; (d) the rigid inspection of drainage of sanatoriums for the care of tuberculous subjects; (e) the prohibition of dumping slaughterhouse refuse into streams.

4. Pasteurization of milk for infant feeding, or the general heating of this food for twenty minutes at 60° C. for the destruction of tubercle bacilli and other toxicogenic bacteria and products.

5. Sludge retained in septic tanks should not be used for fertilizer unless sterilized. Instead of allowing sludge to accumulate for several months before cleaning the tanks, these receptacles should be cleaned at regular stated intervals, say once a month, and the sediment then sterilized; or collected, dried, and incinerated.

6. The cremation of those dead from tuberculosis because of the great vitality and resistance of the tubercle bacillus.

The demonstration of tubercle bacilli in the feces is by no means easy of accomplishment, as a single slide preparation has sometimes taken from thirty minutes to more than two hours.

ADDENDA.

In addition to the authorities cited in the text, the following have demonstrated the presence of tubercle bacilli in the feces (human or animal) or in the bile or both. Rabinowitsch succeeded in demonstrating the organism in water a short distance from a sanatorium for the tuberculous, and Saxton and many others were also able to demonstrate tubercle bacilli in the bile:

SHAW, R. B.: *Montreal Medical Journal*, January, 1897. WRIGHT: *United States Naval Bulletin*, April, 1909. ALEXANDER: *Journal of Hygiene*, April, 1910. INMAN: *Lancet*, December 10, 1910. RABINOWITSCH: *Deutsche medizinische Wochenschrift* 3, January 16, 1913. FABRICCI *Pediatria* October, 1910. WILENKO *Wiener klinische Wochenschrift*, XXIV, 15, April 13 PHILIP and PORTER: *British Medical Journal*, July 23, 1910. CECCONI: *Gazzetta degli Ospedali*, December 17, 1911. MOORE: *Journal of Medical Research*, June, 1911. KLOSE: *Münchener medizinische Wochenschrift*, 3, January 18, 1910. GRIFFITH: Third interim report of the Royal Commission on Tuberculosis, *British Medical Journal*, January 30, 1909, p. 295. LAIRD, KITE, and STEWART: *Journal of Medical Research*, October, 1913. MURPHY, C. V.: Rutland State Sanatorium, Rutland, Mass. (unpublished as yet).

GASTRIC FLATULENCE AND DISTURBANCES OF THE HEART.

By Heinrich Stern, M. D.,
New York,
and L. Bertram Sachs, M. D.,
New York.

The intimate relationships, anatomical and neurological, of the stomach and heart, are selfexplanatory factors in the reciprocal disturbances of cardiac and gastric functions. The extent of these disturbances has not been fully realized by the profession at large; especially is this so in regard to the effects of gastric and intestinal flatulence upon organic disease of the heart.

The dome of the diaphragm is formed by its central tendon, which is adherent on its upper surface to the pericardium. The stomach lies directly under the left cupola of the diaphragm, and the intestines are also in relation to its under surface. The right vagus passes downward on the anterior surface of the esophagus to be distributed on the posterior surface of the stomach, while the left nerve passes in front of the arch of the aorta on to the anterior gastric surface. The vagus has two or three cervical branches to the heart, and a right and left thoracic cardiac branch.

We invariably warn patients with organic heart affections of the danger of excessive physical exertion, but we entirely fail to realize, by reason of aforementioned relationships, the great pathological force which gastric gaseous distention may produce on the heart.

The mechanism of the various cardiac disturbances in their relation to flatulence, varies according to the source of the pathological stimulus; that is, whether it comes primarily from the stomach or the heart itself or through the pneumogastric nerve.

The heart may be *mechanically* interfered with by distention of the stomach. In this case the apex is lifted upward to the left, pressure being exerted on the left and right ventricle. This abnormal position of the heart has a disturbing influence on the great vessels at the cardiac base. Flatulence, by mechanical pressure, may stimulate the vagus in the anterior and posterior stomach wall. This stimulus is carried up to the cardiac plexuses, and thus the heart is *reflexly* disturbed. A stimulus may come to the heart reflexly through distention of the esophagus by means of the right vagus, which lies on the anterior esophageal surface.

Lauder Brunton has described a *vicious circle* in certain cases of heart disease. The disturbed circulation in the lungs, liver, kidneys, intestines, and stomach due to the cardiac disease, results in a congestion of these organs. This congestion may give rise to gastric atony, consequent flatulence, and distention, and so may further embarrass the heart mechanically. This vicious circle, which is the cause of reciprocal cardiac and gastric embarrassment, is perpetuated until either a fatal termination ensues or it is broken through judicious cardiac treatment.

A vicious circle is of frequent occurrence in the condition commonly labeled neurasthenia. The depressed mentality occasions gastric motor and secretory insufficiency. Flatulence is a frequent result of these disturbances, and it may either mechanically, or reflexly through the vagus, disturb the normal cardiac mechanism, which, in the condition of neurasthenia, is more or less unstable.

The gases of flatulence consist either of air or of a mixture in varying proportions of CO, H, N, O, H_2S, and frequently CH_4 in butyric acid fermentation. Contrary to the prevalent idea, an excess of hydrochloric acid is no bar to fermentative processes. This is especially so in neurasthenic states in which the hyperchlorhydria is but a symptom of the disease.

Air swallowing (aerophagia) is a very frequent causative factor in gastric flatulence. It is most frequently met with in neurotic individuals, but it is by no means rare in the perfectly healthy, especially in those engaged in athletic practices. Aerophagia is the indirect result of severe cardiac disease in a number of instances. The sense of fullness and oppression in the chest so frequently met with in severe heart disease, is often relieved by the act of swallowing. Kronecker has shown that this relief is the result of abolition of vagus action. In aerophagia the air frequently accumulates in the upper part of the esophagus and there produces pressure on the right vagus, which is situated on its anterior surface. The relief of the sense of fullness, obtained by swallowing, leads to a constant repetition of the act, and so to a further accumulation of air.

In aerophagia, as a rule, the air enters the stomach where it produces gastric distention. The resultant cardiac symptoms vary according to the amount of air swallowed; also, as to whether a large amount, suddenly or slowly, is introduced into the stomach. If a large quantity of air is suddenly introduced, as frequently occurs in athletic contests where intense effort is exerted, great dyspnea may result from interference with the cardiac action by upward pressure. That this cardiac disturbance is due to the gastric distention, is frequently, though inadvertently, demonstrated by inflation of the stomach for diagnostic purposes. Hoover reports a case of great cardiac disturbance after an inflation of the stomach by a Seidlitz powder, in order to diagnose the location of an epigastric tumor. The patient, immediately after swallowing the powder, became livid; his jugular veins were enormously distended and pulsated rapidly; the arterial pulse was very slow and arrhythmic, though full and of fair pressure, the pulse rate being estimated at the time as less than twenty beats a minute. With the eructation of the gas from the stomach, the patient's circulatory function immediately returned to a normal condition. It is well to remember that the stomach may be enormously distended with gas without the production of epigastric protrusion.

Cardiac arrhythmia is very apt to ensue in the aerophagic, and in many cases of gastric flatulence of fermentative causation. Tachycardia and extrasystole are of frequent occurrence when the stomach is excessively inflated. In most instances, clinical evidence has shown that these arrhythmias are the result of pathological stimuli from the cardiac end of the stomach and esophagus. That they are not due to direct mechanical pressure is evidenced by the fact that large abdominal tumors, meteorism, and ascites, which cause diaphragmatic pressure, are rarely associated with tachycardia or palpitation.

Attacks of tachycardia from gastric flatulence begin and end suddenly, as do attacks of essential tachycardia, but the attacks are not of long duration, rarely last more than two hours, the heart seldom dilates, and dyspnea, cyanosis, and jugular pulsation are not frequent.

The effect of gaseous distention of the stomach, when myocardial, valvular, or aortic disease is present, proves frequently a disastrous one. Gastric flatulence may be the means of turning the balance of a wavering heart on to the side of decompensation. Aerophagia is especially pernicious in its in-

fluence on a diseased heart, as is evidenced by the following case history:

CASE. Mrs. S., aged twenty-eight years, had an attack of acute articular rheumatism when twenty-one years old. Examination of the heart revealed a presystolic mitral murmur, and her clinical history pointed to the existence of some myocardial deterioration. Repeated examinations showed that the lesion was fully compensated. Worry over family matters brought about such a state of excitement that her heart became decompensated. She eructated enormous quantities of an odorless gas, and a physical examination revealed that the dome of the gastric cardia extended as high as the fourth intercostal space. The characteristic swallowing act of the aerophagic, as shown by the rhythmic motions of the larynx, was present. After having repeatedly demonstrated to the patient that her cardiac distress was caused by the swallowed air, the patient finally discontinued her aerophagic efforts, and the heart gradually became recompensated. This patient remained in a highly neurotic state owing to constant conflict with her husband, and the same series of events occurred two months later.

It is now generally conceded that acute postoperative dilatation of the stomach, also acute dilatation of this organ in nervous individuals, independent of operation, is in most instances the direct result of the introduction of air into the stomach. In reply to an inquiry as to whether he had ever seen a case of acute gastric dilatation following intratracheal insufflation of air and ether, Charles Elsberg, who has had a very extensive experience in this method of anesthesia, stated that he had never seen a case under such circumstances, and would consider it practically impossible, as the air and ether mixture is blown out of the mouth with considerable force, no ether vapor ever entering into the stomach. The great mortality in acute gastric dilatation in its pronounced forms, is due in large part to the mechanical cardiac embarrassment consequent upon gaseous distention of the stomach. The benefit derived from immediate gastric lavage is due entirely to the fact that the tube allows the escape of air from the stomach.

The diagnosis of acute indigestion as a cause of death, is often made when the patient affected with chronic heart disease has suddenly been stricken with pain and distention of the stomach. In most of these cases the gastric symptoms are not severe enough to cause a lethal termination, had the heart of the patient not been weakened by chronic disease.

It is well known that gastric flatulence may bring on an attack of angina pectoris. These so called gastric anginal attacks occur at all ages, especially among women, and they differ from the usual anginal seizures in that they are not brought on by exertion, they last but one or two hours, the pain is precordial and not substernal, and death is rare. The knowledge that such attacks do occur is important, because the treatment is entirely to be directed to the stomach. Attacks of both the genuine and the gastric angina pectoris frequently terminate with a series of eructations.

The intelligent treatment of gastric flatulence in its association with cardiac disturbances, demands a thorough knowledge of its etiological factors. When flatulence is associated with a failing compensation, the primary effort must be directed to the cardiovascular apparatus. No benefit will be derived from attempts directly to increase the motor power of the stomach until the circulatory congestion in the walls of the gastric organ is removed. Overloading of the stomach in this condition is especially pernicious. Frequent small meals with a minimum of carbohydrate is the best diet for the time being. Cardiac tonics should be administered. At the same time, efforts to neutralize the existing gases in the stomach will prove of some value. Charcoal, sodium bicarbonate, and burned magnesia are some of the drugs which are worthy of trial.

When flatulence is a part of the vicious circle in so called neurasthenia, nerve sedatives are in order. Many an attack of extrasystole and tachycardia will be averted if proper attention is paid to the prevention of the flatulence. The association of excessive gas formation and attacks of reflex cardiac neuroses in neurasthenic patients, has led many physicians severely to restrict the diet in such cases. This restriction has a tendency to perpetuate the condition, inasmuch as the resultant malnutrition lowers the digestive powers. Many patients respond readily to forced nutrition, especially if the carbohydrates with ingesta are given in reduced quantities. Bromides, valerian, and charcoal should be given. The following combination is often efficacious:

℞ Sodii bromidi, ... }
Strontii bromidi, ... } ..... āā 0.5;
Carbonis ligni, ... 0.3;
Essentiæ zingiberis, ... 1.5;
Aquæ cinnamomis, q. s. ad ..... 5.0.
M. Sig.: One dose; take directly after meals.

When hyperchlorhydria exists together with gastric flatulence, alkalies should be administered and an excess of meats avoided, since the proteids, though combining with the hydrochloric acid, have the tendency to call forth a further outpouring of free hydrochloric acid.

The old adage "it is an ill wind that blows nobody good" cannot be applied to the aerophagic. In his case, whenever it blows it blows but woes. The fact that the constant attempts of the aerophagic to expel the air from his esophagus or stomach are followed by a swallowing of the air, should be brought to his attention. A psychical analysis will in many cases effect a cure. If such patients are told the exact mechanism of air swallowing, and the difference between the odorous fermentation gases and the nonodorous air, the cure will be greatly facilitated. When large amounts of air are suddenly introduced into the stomach, they should be immediately expelled by means of the stomach tube in case the condition of the heart still permits, otherwise there may be a fatal issue. Great damage is done in these cases by abdominal massage, especially if the heart is organically diseased. When flatulence is due to fermentative changes, starches and sugars should be entirely abstained from, or very sparingly partaken of. Most patients can tolerate some kinds of carbohydrates better than others, and it is the physician's duty to make a careful study of the idiosyncrasies of his patient. Antifermentative drugs, such as beta naphthol and salicylic acid preparations, should be employed. Carminatives, such as ginger, compound tincture of gentian, compound tincture of cinchona, and peppermint, give good results. Dilute hydrochloric

acid is to be employed in exceptional cases when the carbohydrate fermentation is excessive.

The introduction of the stomach tube and lavage of the stomach are the most efficient therapeutic procedures in acute gastric dilatation. The fluid causes the gases in the stomach to be crowded toward the cardia, and so facilitates their escape. Care, however, must be taken that not too much fluid be introduced into the stomach at any one time, and that the procedure be finished in as brief a period as possible.

Increasing gastric discomfort may be noted in some patients who have much postanesthetic retching or vomiting. This results from the repeated swallowing of small amounts of air and saliva, and if this aerophagia is allowed to continue for any length of time, acute gastric dilatation will ensue. A cork placed between the teeth of these patients will prevent them from swallowing the air.

Gastric anginal attacks, which tend to recur with every gastric disturbance, should first and foremost be treated from the prophylactic standpoint. As it is most always a dietetic indiscretion which stands at the bottom of each attack, the regimen of the patient should be given the strictest attention.

250 West Seventy-third Street.

526 West 111th Street.

DYSPEPSIA DUE TO CHRONIC APPENDICITIS.*

By John J. Gilbride, A. M., M. D.,
Philadelphia,

Lecturer in Surgery, Medico-Chirurgical College; Instructor in Diseases of the Stomach and Intestines, Philadelphia Polyclinic Hospital and College for Graduates in Medicine.

It is usually not difficult to diagnose cases of relapsing appendicitis, or the so called cases of recurrent appendicitis. The acute attacks in many of these patients bring them to the operating table with a cure of their dyspepsia. But the cases of appendicitis with symptoms that are entirely referred escape a correct diagnosis. These are the most difficult to diagnose; these are the cases usually of longest standing; these are the cases in which long existing infection causes secondary infection of the upper abdominal organs; and in many of these cases it may be impossible to make a diagnosis. Not only are those cases whose symptoms are wholly referred and without local symptoms overlooked, but there is a much larger number of cases, and these with local symptoms, that are not recognized.

A diagnosis of many of these cases either with or without local signs and symptoms is not to be made by a physical examination of the abdomen alone; not by the history alone; but by a complete examination of the patient, i. e., a careful history, physical examination, employment of laboratory tests and in some cases an x ray examination. Then, again, one may be able to find in another organ or in the stomach itself, a sufficient pathological condition to account for the symptoms.

Treatment, other than operative, of dyspepsia due to chronic appendicitis gives but little relief. It does give some relief, although these cases may and do have recrudescences in the disease, exacerbation in the symptoms, etc.

The symptomatology of chronic appendicitis, like its pathology, is very variable. The patients may complain of pain, fullness and distress, distention after eating, belching, occasional vomiting, headache, vertigo, constipation, and seldom constipation alternating with diarrhea. The indefiniteness of the symptoms, as learned by the history, is of value in showing that the disease picture does not coincide with that of other diseases. Indeed, the elimination of disease of other organs, which could produce nearly similar symptoms, is of great value in confirming one's suspicions of a diseased appendix.

The majority of patients do not give a history of acute attacks. Their symptoms vary considerably in severity from time to time. At one time the pain and indigestion may be quite marked, extending over a period of several days or weeks, but not severe enough to confine the patient to bed, though work may have to be discontinued. The condition improves, but does not entirely disappear, and this period of partial relief from symptoms may last only a few days, or weeks in the more severe cases, while the interval of subsiding symptoms in other cases may extend over months. Moreover, there are many cases in which symptoms of indigestion remain rather constant. The symptoms in these patients are usually mild but continuous, often lasting for years with little tendency to get worse. Exertion sometimes seems to aggravate them.

The pain is indefinite in time and is described as occurring in the lower abdomen or in the epigastrium. In about twenty-five per cent. of cases it is aggravated by eating. It is usually of an intermittent or colicky character. As in the acute attacks, pain may in a small number of cases be referred to the bladder, or even less often to the left side of the abdomen. Pain in a high appendix may be referred to the region of the gallbladder or duodenum.

The pain, as stated, is indefinite, often discomfort rather than pain, or a bloated feeling in the abdomen, which is increased during digestion, and many of the patients complain of fullness and distress after taking food, only a small percentage being relieved by eating. An increase in the symptoms immediately or soon after eating, is believed to be due to pylorospasm. Some clinicians attribute this increase in the symptoms after meals to intestinal stasis. That both of these conditions, i. e., pylorospasm and intestinal stasis, play a role is probably true. The recognition of pylorospasm is an important factor, and it is perhaps one of the most valuable symptoms in cases of chronic appendicitis in which the local signs in the region of the appendix are indefinite or possibly absent. Belching is complained of in about one half of the cases, while constipation is also present in nearly one half. Irregularity of the bowels or diarrhea occurs in a small number of cases. Nausea, heartburn, regurgitation, headache, vertigo, and vomiting appear about in the order named. Loss of appetite and

*Read before the Lackawanna County Medical Society, Scranton, Pa., January [illegible], 1914.

palpitation of the heart are also not infrequently mentioned.

Of the local signs of chronic appendicitis, tenderness in the region of McBurney's point, when present, is the most important, and although tenderness in this region may be so often due to some other condition, still I believe that in the majority of instances one can state with a fair degree of accuracy whether the appendix is or is not tender.

It has also been stated that pressure over a chronically diseased appendix usually produces pain referred to the epigastrium, and while I have noted this occasionally, it occurs but seldom, too seldom to be of any value.

Rigidity of the overlying abdominal muscles practically never occurs, likewise a mass is rarely present in the region of the appendix. In a small percentage of cases I believe the appendix is palpable, and further believe that one with experience in palpating this region will not very often mistake the abdominal rectus, or the psoas muscles, for a diseased appendix.

The diseases most commonly confounded with appendicitis are stone in the kidney or ureter, gastric ulcer, duodenal ulcer, and gallstones, and we know that any of these conditions may simulate a diseased appendix.

The results of gastric analysis are also variable, and while one may not gain much positive evidence from such analysis, it at least shows the condition of the functions of the stomach. It will also shed some light on diseased conditions of the stomach itself, if present, and incidentally will give one an estimate of how much relief to expect in a case where removal of the appendix is contemplated. There are no gastric findings, so far as I know, that one can definitely associate with chronic appendicitis. There may be signs of catarrhal gastritis, hyperacidity, hypacidity, hyperchlorhydria, occasionally hypersecretion of gastric juice, and in some cases stagnation of gastric contents with dilatation of the stomach.

An examination of the blood may show a slight increase of leucocytes. Inflation of the colon and incidentally the appendix with air has been suggested, as well as x ray or fluoroscopic examination of the appendix in obscure cases, but as far as the appendix itself is concerned, it is my opinion that if one cannot make a diagnosis without inflation and x ray examination of the appendix, one cannot make a diagnosis with them.

In some of these cases, even at the time of operation when the appendix is exposed, there may be some doubt as to whether the appendix could be accountable for the symptoms present, and, to the casual observer, the appendix appears normal. That is because he has been accustomed to looking at the appendix when it is the seat of acute inflammation. In the chronic cases, however, the appendix is often covered with a network of blood-vessels, is angulated, feels thicker and harder than normal, as it may contain strictures and fecal concretions; microscopic examination reveals the presence of inflammatory changes. On the removal of such an appendix the symptoms when due to a diseased appendix only, entirely disappear.

As to the cases which are most suitable for operation, one must feel reasonably certain that other conditions are not present which may keep up the symptoms and fail to give the patient the anticipated relief. Then, again, one must not always expect complete relief of symptoms immediately after operation, as in many cases careful medical after-treatment is necessary, continued over several months before recovery takes place.

1934 Chestnut Street.

TOBACCO SMOKING AND MENTAL EFFICIENCY.

By Arthur Dermont Bush, M. D.,
Burlington, Vt.

This investigation was undertaken principally for the purpose of determining whether or no the smoking of tobacco has any effect on mental processes. Associated with this study was the inevitable query as to what constitutes the so called "toxic factor" in tobacco smoke. The results of the main investigation appear positive. The minor investigation has demonstrated chiefly how little certainty exists as to what may be the toxic factor.

From a review of the literature available it would appear that extensive studies had been made as to the effect on living organisms of the alkaloid, nicotine. From such studies a great number of writers, especially laymen, have adopted the hasty conclusion that tobacco smoking entailed like results. Comparatively few studies have been made of the effect of tobacco smoking on human beings; and, such as have been made, fail to state if the tobacco used, or the smoke produced, was examined for nicotine or its congeners. The absence of an examination necessarily casts some doubt on the causative factors of the phenomena. Otherwise, these studies help to a wider understanding of what results ensue from the smoking of tobacco. Fourteen experiments on two subjects, by Bruce, Miller and Hooker (1) show that smoking causes a moderate vasoconstriction. Lee (2) observed a continuous rise in blood pressure (systolic) varying from two to twenty mm. Hg., and rapidly falling as soon as smoking ceased. Fleig and Visme (3) found that inhaled tobacco produced a primary slowing and a secondary quickening of heart action. They also found an acceleration and an increase of amplitude of respiratory movements. Seaver (4), while physical director at Yale, found that in from five to ten minutes after beginning to smoke an ordinary cigar, muscular power began to diminish; and in an hour, when the cigar was burnt, muscular power had fallen to about twenty-five per cent. of its initial value.

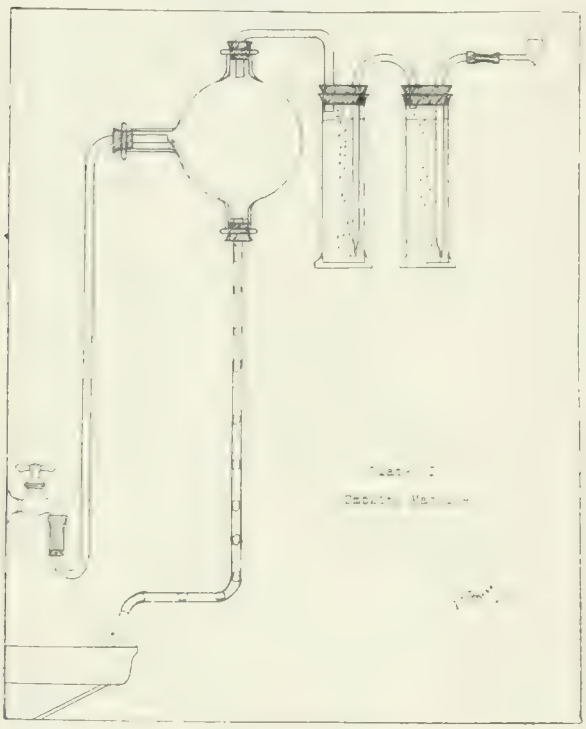
All of these investigations refer to the *physical* effects of tobacco smoking. So far as can be ascertained no extensive investigation of the effect on mentality of tobacco smoking has heretofore been attempted. Cushny (5) makes passing notice of sundry experiments of this nature that bore inconclusive or contradictory results, but no reports of these experiments have been obtainable. There is, however, an accumulation of clinical evidence which

may well serve to introduce the prolonged series of mental tests presented below. Taylor (6) made a study of the average grades of 500 boys in a private school, Germantown Academy, and found that the grades of smokers were invariably lower than the grades of nonsmokers. He presents the following tabular results:

AVERAGE GRADES OF 500 BOYS.

Age	12	13	14	15	16	17
Grades of nonsmokers	83	90	89	84	87	85
Grades of smokers	73	75	73	75	75	68
Percentage of smokers in school	15	20	38	29	57	71

It might be urged that the lower marks of the smokers were due to the frequent correlation of inferior diligence, though the inverse ratio of grades at seventeen with percentage of smokers indicates something more. Meylan (7) studied the records of scholarship of 223 students at Columbia and



found that "students who use tobacco, invariably rank lower in scholarship than students who do not smoke"; and he submits the following table:

RECORDS OF 223 STUDENTS AT COLUMBIA UNIVERSITY.

	Average marks at entrance.	Marks during first two years.	Failures in first two years.
223 students	90%	66%	7%
115 smokers	87%	62%	10%
108 nonsmokers	91%	69%	4%

E. L. Clarke (8) made an investigation of the students in attendance at Clark College. He found that of 201 students 46.3 per cent. were smokers. Of the smokers 18.3 per cent. won academic honors; whereas of the nonsmokers 68.5 per cent. won academic honors. Shall we here say that the smoker is constitutionally a mental inferior or shall we conclude that, if intellectually equal with the nonsmoker, he is handicapped in his mental processes by his habit? Seaver (9) makes this statement: "Out of our highest scholarship men, only a very small percentage (about five) use tobacco."

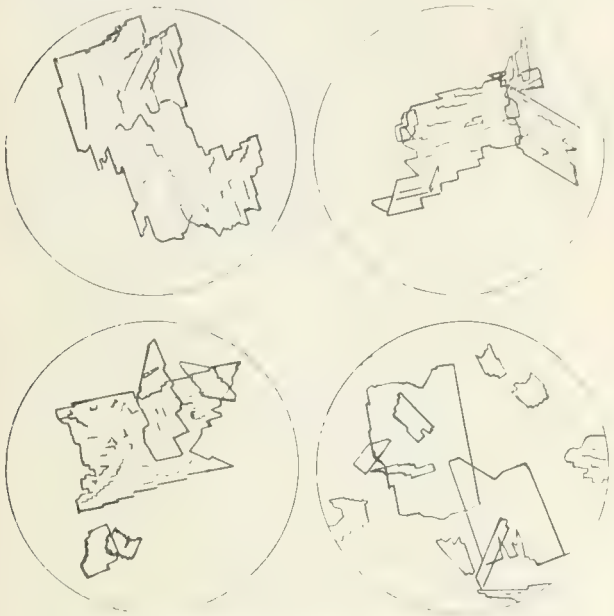
Suggestive as these clinical reports may seem, they are not conclusive. Therefore it has appeared advisable to make a series of tests on regular smokers for the purpose of ascertaining their mental agility, both before and after smoking. These tests were arranged to try out, in ascending order of psychic evolution, the various intellectual functions; then after a period of smoking, to repeat these tests with a similar series of equal difficulty. Some limitations being inevitable, it was decided that this first series of tests should be given immediately after the period of smoking was completed. Whether the effect of the smoking would be increased or diminished after an interval awaits further determination.

METHODS EMPLOYED.

The methods employed were similar to those used by Professor Thorndike and others, at Columbia University; and are herewith given in some detail. The subject being seated, at ease, and reasonably free from the effects of any immediately recent smoking, was requested to respond to the tests with the greatest possible speed and spontaneity, inasmuch as each test would be accurately timed or otherwise gauged. The first test employed was the so called E tests[1], wherein the subject is required to cross out all the E's in several lines of unspaced capitals; this experiment tests simple perception. (To obviate any undue gain from experience the secondary test employs A instead of E.) The second test was that of "chain association." In this test the subject is required to say in ten seconds all the words that flow through his mind, the initial word being one suggested each time by the operator from a given series. An average is made of five tests, no test being counted unless it contains six or more words. This test shows the freedom of linking association, one object memory leading with varying rapidity into another. The third test was "limited association." Sets of cards were prepared, each card containing ten meaningless syllables of two letters each. The subject was required to write down in the briefest possible time whatever words the syllables suggested, one word for each syllable. The fourth and fifth tests carried the faculty of association higher in the psychical scale. The fourth, "controlled association," required the subject to name an antonym for each of ten words on a card. The fifth test, "genus species," required the naming of a particular kind for each of ten words representing general classes. The sixth test concerned itself with visual memory. A series of spaced capital letters were arranged in rows of arithmetical progression, beginning with four; only one row was exposed at a time, the exposure being for as many seconds as there were individual letters in the row. If a subject could memorize five discrete letters in five seconds, could he memorize nine in nine seconds, and would smoking increase or diminish his memory capacity? In the seventh test, ten words were slowly read; the subject was then required to write from memory as many words as he could recall, thereby testing auditory memory. In the eighth test a series of ten nouns was given

[1] An example of each test is appended; see page 521.

and the subject requested to write down swiftly whatever each word suggested to his mind. This series was followed by a series of ten verbs for a second like test; thereby measuring rapidity of imagery. The ninth and tenth tests were similar,



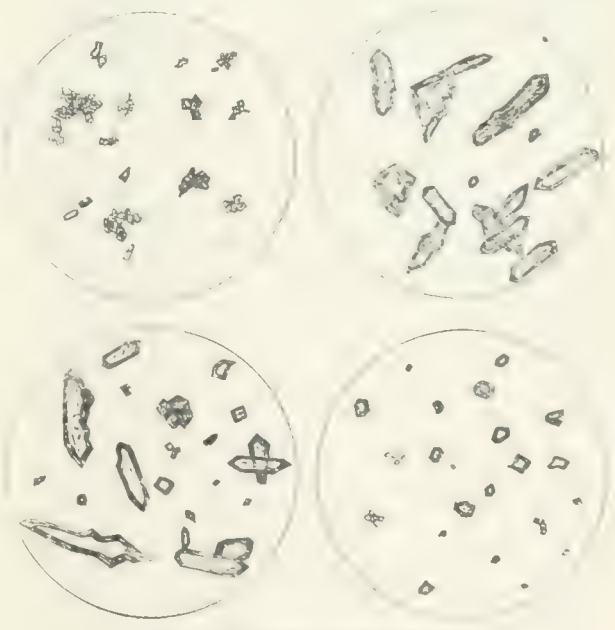
the ninth being tests of speed in adding several columns of figures, and the tenth tests of speed in problems of subtraction. Higher tests were contemplated, but all such were later abandoned because of the apparent impossibility of arranging a series (of syllogisms, for instance) of acceptable equality of degree.

Great care was taken in arranging these tests that there should be no disparity of ease between the tests given before smoking and those given after smoking. The subjects were earnestly cautioned to use the greatest possible dispatch in completing each test (seventh excepted); they were also warned not to hesitate over any word; words not *immediately* apperceived and correlated must be skipped, and the attention focused on the next word. A few tests where these cautions seemed not to be rigidly heeded were thrown out as unreliable. To add to the value of the tests, each subject was required to undergo five completely different sets of tests, one set only to be taken on any given day. From these five an average was taken which represented the man's response both before and after smoking. There being twelve tests in all (numbers 4 and 8 double) means that for the final conclusion a total of over 2,000 tests were made, half before smoking and half after, and ranging from simple perception to simple reasoning.[2]

The subjects volunteering for this series of experiments were all medical students, ranging in age from twenty-one to thirty-two years, of varying previous experience from the farm laborer to the life-long student, of divergent mental capacity from the failure to the honor student, and of differing habits as to tobacco addiction. Their work was all checked for experience gained by a nonsmoking prize student who went through the entire series of experiments under similar conditions, his gains (or losses) modifying to that extent the percentage of the other men for the same tests.

Below is a tabulated statement of the results obtained from this series of experiments. These figures represent for each subject the average of five experiments. All errors of fact have been corrected on a strict ratio basis; they have been further corrected in percentage for experience gain, as previously stated. Experiments 4 and 5 have also been corrected for errors of rhetorical fact, i. e., in 4, demanding antonyms, corrections were made for words not construably antoymic; likewise, in 5, a word not definitely specific was eliminated, and its loss in time estimated at an arbitrary five per cent. Experimenters in other fields have recommended for such errors an arbitrary deduction of ten per cent., but this seems hardly just, inasmuch as some account should be taken of the time expended in writing even the wrong word; therefore, it has seemed advisable to limit this correction to but five per cent. of the total time for each error of fact.

One might question the accuracy of comparative times in a succession of experiments in antonyms, inasmuch as the concepts of the second experiment might require longer words than those of the first experiment. To ascertain if such a criticism would be justified, several results of tests were taken at random, the entire number of letters counted in both the first and second tests, then a proportion made of the ratio of the number of letters to time consumed in experiment A to the like ratio in ex-



periment P, and it was found that the variable in each case and either way was under 0.3 per cent.—a factor too small in such experiments to justify the computations for the entire series (over 8,500 words.)

[2] Psychogenetic scale from Romanes (10).

Attention is called first to this table to descriptive points. The figures, 1 to 10, represent the specific laboratory experiments already described. The letter A represents the average of five experiments *before* smoking; the letter P, the average of five experiments *after* smoking; the per cent. represents the percentage *gain* or *loss* for each individual average in each class of experiments. The first column of figures at the left represents the laboratory number of the students. Twenty-five were arranged for originally, but several failed to complete the experiments, and some were eliminated for failing to apply themselves sufficiently. Following column to may be found the final average for each individual, as well as other personal data. Succeeding subject 17 will be found the averages of all the subjects for each experiment, terminating with the final average of all the subjects for all the experiments. (The slight discrepancy of 0.1 per cent. between the final average in the vertical column and the final average in the horizontal column is due to disregard of fourth place decimals.)

This table, based on the accumulated data, shows the average smoker loses 10.5 per cent. in mental efficiency after fifteen minutes of quiet smoking.

The least effect was produced by the cheapest kind of tobacco, that retailing in five and ten cent tins and bags, the variations ranging from 0.048 decrease in efficiency (which is but little more than that for cubebs, *quæ vide* laboratory No. 24) to that of 0.08, the average being 0.064. The three so called strong tobaccos produced decreases of efficiency ranging from the Havana average of 0.084 to an average of 0.094 for the Burley-Perique-Virginia mixture, and 0.098 for Perique. Turkish tobacco (a guaranteed brand) produced an average depression of 0.125; while the greatest average decrease of efficiency, as well as the greatest individual decrease, accompanied the smoking of the cigarettes, —0.150.

It would seem from some of the results that habituation qualified the degree of mental inhibition resulting from smoking. The man who had the highest percentage decrease of efficiency was the one who used tobacco the least; likewise, the man who smoked fifteen to twenty cigarettes daily had less decrease than the one who smoked but two or three. On the other hand the man, 3, who smokes about one cigar a month had far less reaction than the one, 18, who smokes three to ten pipefuls daily.

From the data given it would seem as if there were but slight relationship between efficiency of scholarship and susceptibility to tobacco smoke. In a broad way, it would appear that the men of higher rank averaged the greater losses, though other factors may readily explain the differences. For example, would 15, whose yearly average is 85.1 per cent., have suffered an efficiency inhibition of 20.4 per cent. had he been smoking the cheap mixture instead of the cigarettes; or would 8, whose yearly average is 81.9 per cent., have scored the low mark of 4.8 per cent. had he been smoking Turkish? These are problems yet awaiting determination.

Of even greater interest is it to note in what mental faculties the greatest obtunding effects were produced. Whereas the average decrease in efficiency was about 0.105, the minimal effect was but 0.029 in the experiment of visual recall, while the maximal decrease in efficiency was 0.222, in the experiment of imagery tests. The next highest degree of impairment was in the perception test with an average score of 0.171, and an individual average of 0.45 (1), the greatest lowering of efficiency in the entire series.[4] The two next higher are tests 4 and 5, "controlled associations," where the decreases in efficiency are respectively 0.141 and 0.124. It is very important to note here that the greatest impairments of mental efficiency are in the psychological fields of imagery, perception, and associa-

BALANCE SHEET OF EXPERIMENTS.

Laboratory No.	1 Simple Perception *E* Test. Per cent.	2 Apperception Free Chain. Per cent.	3 Limited Apperception. Per cent.	4 Controlled Associations (Opposites) Per cent.	5 Controlled Associations (Genus Species) Per cent.	6 Memory Visual Recall Per cent.	7 Memory Auditory Recall Per cent.	8 Imagery. Per cent.	9 Intellection (Addition). Per cent.	10 Intellection (Subtraction) Per cent.	Individual Averages. Per cent.	Averages in Relation to Tobacco. Per cent.	Age.	Previous Occupation.	Scholarship 1912-1913	Tobacco Indulgence (Daily).	Alcohol Indulgence	Coffee Indulgence.
23	—.043	—.044	—.025	—.164	+.028	—.09	—.057	—.271	+.051	+.010	—.048		20	Student	81.0	8 to 10 pipes P. A.	Temperate	u. i. d.
14*	—.034	—.010	—.032	—.067	—.098	+.034	—.060	—.211	—.129	—.136	—.086		22	Student	79.6	7-8 pipes L. S.	Abstinent	u. i. d.
10	—.164	—.003	+.103	—.041	—.190	—.055	+.012	—.151	—.001	—.079	—.064	—.064	23	Student	80.3	10 pipes P. A.	Temperate	u. i. d.
19	—.085	—.075	—.10	—.061	—.098	—.055	—.014	—.321	—.054	—.153	—.103		25	Student	87.3	15-20 "Murads"	Abstinent	u. i. d.
14	—.230	—.113	—.327	—.324	—.021	—.64	—.118	—.317	—.211	—.391	—.204		21	Clerk	85.1	Cigar infreq.	Abstinent	u. i. d.
15	—.099	—.138	—.96	—.281	—.361	—.117	—.12	—.370	—.054	—.168	—.120		24	Student	90.8	3-10 pipes L. S.	Temperate	
5	—.110	—.090	—.207	—.164	—.326	+.029	—.08	—.260	—.279	—.134	—.158		23	Student	75.3	1-3 "Murads"	Abstinent	t. i. d.
26	—.410	—.048	+.117	—.123	+.011	—.074	+.076	—.312	—.184	—.008	—.088		23	Student	85.0	2 pipes L. S.	Abstinent	u. i. d.
8	—.353	+.048	—.170	—.025	—.145	—.028	+.069	—.234	—.216	—.083	—.098		30	Farmer	83.5	1 cig. a month	Abstinent	u. i. d.
13	—.006	—.211	—.101	—.098	+.046	—.069	—.015	—.156	—.072	—.401	—.102		24	Clerk	90.0	Mascot	Seldom	u. i. d.
17	—.073	—.127	—.111	—.101	—.043	—.000	+.013	—.246	—.126	—.429	—.067		20	Clerk	82.9	5 pipes Tuxedo	Abstinent	u. i. d.
18	—.288	—.055	—.010	—.109	—.057	—.142	—.144	—.227	—.042	—.023	—.098		20	R. R.	62.3	3 pipes P. A.	Abstinent	None
7	—.450	—.057	+.067	—.107	—.052	+.092	+.049	—.218	—.079	+.052	—.072	—.084	23	Student	90.9	6 pipes P. A.	Temperate	u. i. d.
9	—.052	—.135	—.290	—.311	—.030	+.007	—.012	—.060	—.041	—.039	—.111		22	Student	80.0	10 pipes L. S.	Temperate	u. i. d.
12	—.290	—.138	—.946	—.099	+.002	+.029	—.060	—.295	—.218	—.060	—.094	—.125	23	Student	71.7	12 pipes L. S.	Temperate	u. i. d.
Av.	—.171	—.087	—.08	—.141	—.124	—.029	—.043	—.222	—.094	—.067	—.105							
*Control.	+.034	+.002	+.016	+.010	+.054	.000	+.019	+.183	+.012	+.010	+.027					Non-smoker	Abstinent	

[2]Owing to limitations of space, it has been possible to print in the JOURNAL only the percentage columns of this important table. Those who are interested in the complete tabular presentation of the facts, can probably obtain it by application to the author, as it will be issued in reprint form.—EDS.

[4]This deficiency of laboratory No. 1 in the "perception" test could hardly have been due to acute ocular disturbance inasmuch as in experiment 6, where he was again tested on letters, the deficiency disappeared; from which it would seem that the earlier depression was concerned with the field of recognition—unless, indeed, there occurred an ocular disturbance of very transitory nature.

tion, on which fundamentals of mentality are based all constructive thought and reasoning.

It being reasonably demonstrated that the smoking of tobacco is accompanied by a decrease of mental efficiency, there immediately arises the question as to the cause of this depression. Some authors

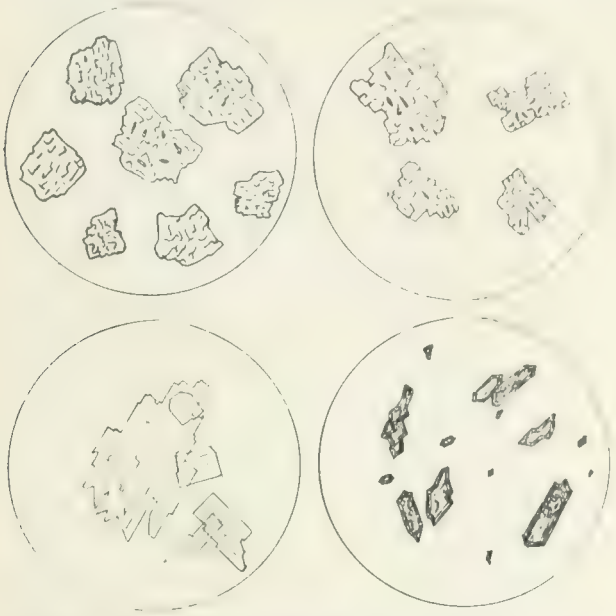


FIG. 1. The upper two, acid silicotungstic; the lower left, nicotine salt, and lower right, pyridine salt.

(*vide infra*) are rather hastily inclined to conclude that nicotine alone is the pathogenic factor in tobacco smoking; but since the presence of nicotine *per se* in tobacco smoke is debatable, and since other toxic substances are demonstrable, it would seem as if the whole subject still remained open for investigation. In tobacco smoke there occur furfurol, marsh gas, hydrogen sulphide, hydrogen cyanide, organic acids, phenols, an empyreumatic oil, pyridine, the whole picoline series, carbon monoxide and dioxide, and possibly some nicotine. Do none of these in the quantities present, other than pyridine and nicotine, possess poisonous properties? The amount of furfurol present is too small to have much effect, unless through cumulative action, doses of 0.096 gram "producing in man a persistent headache" (11). Hydrogen sulphide in a very dilute form "produces nausea, pain in the head and general weakness" (12); but who knows how much hydrogen disulphide there may be in tobacco smoke? One drop of the empyreumatic oil is fatal to the cat (13); but it is apparently not easily absorbable by man. "The picoline bases resemble nicotine greatly, both in smell and in physiological action" (14); they, like nicotine, cause miosis and dyspnea. Marsh gas, hydrogen cyanide, and the phenols may each exert some influence, but how much who shall say? Students who willingly inhale the smoke products *en masse* object to being experimented upon with the separate constituents.

The presence of carbon monoxide in the blood of a man who is smoking may be readily demonstrated by the spectroscopic test. In the foregoing series the test was positive in every instance applied. Authors differ as to the amount of carbon monoxide in tobacco smoke. Gréhant says (15) one gram of burning tobacco yields 82 c. c. carbon monoxide; whereas Thoms (16) is quoted as follows: "The carbon monoxide in the smoke from one kilo of tobacco, estimated by the precipitation of palladium chloride solutions, amounted to about 20 c. c." If Gréhant is correct, then from four fifths of a cigar weighing 6.85 gram, there should be obtained 449.36 c. c. carbon monoxide. If a man occupies twenty minutes for smoking his cigar, and if he takes a puff every twenty seconds, then at each inhalation he should draw in 7.49 c. c. carbon monoxide; but as only one half of the carbon monoxide inhaled is absorbed (Haldane [17]), then the amount absorbed would be but 3.74 c. c.; and as this represents a concentration of 0.75 per cent., distinct symptoms should be produced (Haldane, *loco citato*), even though the lungs are immediately ventilated by four or five breaths of normal air. Are, then, some of the symptoms commonly ascribed to nicotine due to carbon monoxide, or are Gréhant's figures wrong and Thoms's right, or is carbon monoxide not as toxic as we are accustomed to think?

The amount of carbon dioxide in a cigar was determined by passing the smoke through liquor calcis to the point of neutrality, then weighing the unconsumed portion, and by molecular formula computing the carbon dioxide. Thus a cigar weighing 6.85 gram was burned with its smoke passing through 400 c. c. liquor calcis contained in two separate vials (see plate I). Neutrality of the liquor calcis was reached when 3.03 grams had been burned. Neutralization of 400 c. c. liquor calcis with carbon di-

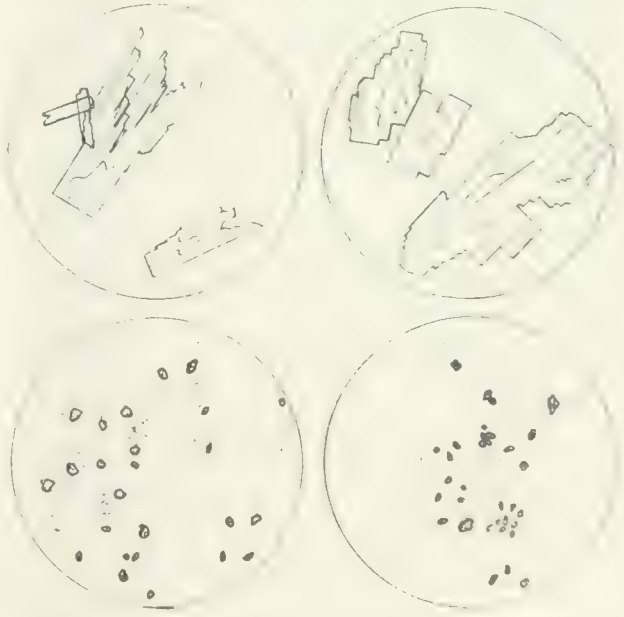


FIG. 5.—Burleigh mixture No. 035; the upper two, distillate; the

oxide means the consumption of 205.1 c. c. carbon dioxide; or the equivalent of 463.67 c. c. carbon dioxide for the entire cigar.[5]

If a man occupied fifteen minutes in smoking

[5] Lime water calcis of 0.15 per cent. strength was used; 400 c. c. contain $Ca(OH)_2$ = 0.592 gm. $Ca_2OH)_2$ = 4586 gm. CaO which, in turn, requires 0.3584 gm. CO_2 for saturation; 0.3586 gm. CO_2 = 205.1 c. c. 1 c. c. CO_2 = 0.0564 gm. *Simon's Chemistry*, 8th ed., p. 335.

four fifths of a cigar, and if he puffed four times a minute, he would inspire at each puff about six c. c. carbon dioxide, which would raise the carbon dioxide content of the inspiration from 0.04 per cent. to 1.24 per cent., after which would follow three inspi-

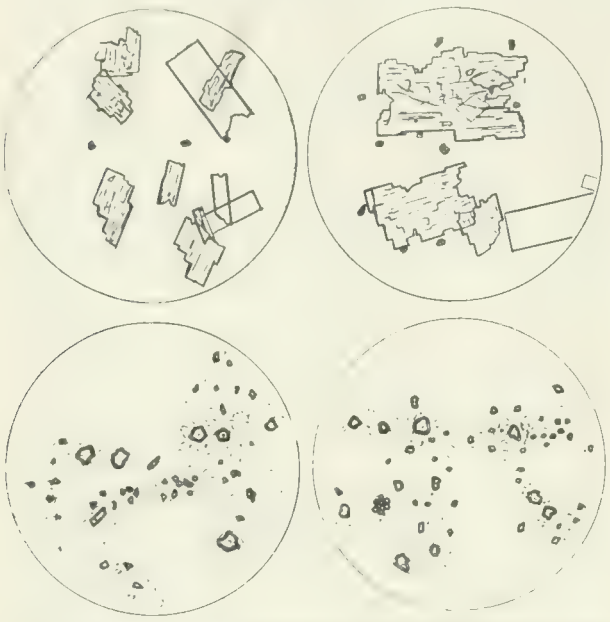


Fig. [illegible].—Hexane No. 047; the upper two, distil[illegible] the lower two, smoke solution.

rations of normal air. Would this amount of carbon dioxide be injurious? Howells says (18): "Individuals kept in a confined space for a number of hours show no evil effects, except when the accumulation of carbon dioxide has reached a concentration of over four per cent."

It is customarily assumed, however, that whatever the ill effects are that have been more or less willingly ascribed to tobacco smoking, those ill effects must be due to the powerful poison, nicotine, known to exist in the leaf. The great inconsistency between the possible effects arising from the administration of the amount of nicotine contained in a cigar, and the actual effect on the smoker consuming that cigar seems to have been overlooked by the average writer, though perfectly patent to the small boy devotee forcedly attending a Y. M. C. A. lecture on tobacco. If a cigar contains 0.085 gm. nicotine (19), and if one seventh of the nicotine of the tobacco is present in the smoke (20), and if but 0.004 gm. is capable of producing death (21), why does not the smoker of the cigar absorb enough nicotine to cause his demise?

Bruce, Miller, and Hooker (22) quote Lehmann as concluding that nicotine is the only toxic factor in tobacco smoke, though they fail to give the proof. Cushny states (*loco citato*), but without giving his authority: "In smoking, nicotine is absorbed, . . . as a large proportion of that contained in the tobacco passes over in the smoke." C. Fleig (23) says: "In tobacco smoke nicotine is the toxic factor; repeated extracts of smoke denicotinized by tannin, of ammonia salts, and of pyridin bases in the same proportion in which these products are found in smoke, have never produced troubles comparable to those of the normal extract." This conclusion is vitiated by the fact that the tannin would precipitate the pyridin from the smoke solution as well as the nicotine; moreover, experiments with the individual products would manifestly not produce the same results as experiments with the sum of the products. A strikingly similar error of deduction is made in the *Lancet* (24). An operator in the *Lancet* laboratory made use of the well known iodine-potassioiodide test for alkaloids, obtaining the iodide of nicotine which he then titrated with sodium thiosulphate. This serves very well to determine nicotine content in commercial solutions *with known freedom from other alkaloids;* but this common reaction the operator seems to have largely overlooked. He pumps tobacco smoke through a tube containing filter paper saturated with solution of sulphuric acid; he then washes paper and tube, and treats the washings with strong iodine-potassioiodide, obtaining a dark brown precipitate which he, without further inquiry, assumes to be nicotine, and showing a ratio as high in some cases as seventy-seven per cent. of the original nicotine content! But how does he know but that which he is assuming to be nicotine may be pyridine? Solutions of pyridine in my laboratory yield with iodine-potassioiodide appearances closely similar to those that nicotine yield with the same reagent. Did the operator make any tests to eliminate pyridin? None is stated. Then of what value are his assumptions that his smoke solution precipitates are nicotine compounds? They may be part or all pyridine for aught the *Lancet* investigation indicates. Kissling asserts (20) that at least one seventh of the original nicotine content of the leaf is present in the smoke. But an examination of Kissling's method seems to indicate that he must have counted as nicotine all the pyridine prod-



Fig. 7. Cheap mixture No. 041; the upper two, distil[illegible] the lower two, smoke solution.

ucts as well as small amounts of inevitably retained ammonia and amines (*vide infra,* Chapin). Says Allen (20): "When tobacco is smoked the greater part of the nicotine is converted into pyridine and other pyrogenous compounds." Vohl and Eulen-

berg, in their investigations (14), found no nicotine whatever in tobacco smoke. The value of having this matter further investigated consists, not in escaping the fallacy at which the gamin jeers, but in recognizing the importance of the relative toxicity of nicotine and pyridine. Hatcher (25) gives the average fatal dose of nicotine for the adult guinea-pig as about 0.040 gm. per kilo; and Brunton and Tunnicliffe (26) state that pyridine is lethal to guineapigs in doses of 0.870 gm, per kilo. This is a relative toxicity of nicotine to pyridine of one to 21.75. Most of the other physiological actions being known to be similar, if we can now ascertain it to be true, that in tobacco smoke the highly toxic nicotine has become decomposed into the less toxic pyridine, then our present pharmacological discrepancies on the subject may be dissipated. A step in this direction may have been made by the following experiments.

To discover if the results obtained in the preceding mental tests should be ascribed to nicotine or to nicotine decomposition products plus other smoke components, an analysis was made of all the tobaccos used and also of the smoke of each tobacco. The methods used are herewith given in some detail.

In place of the Kissling ether extraction method, the newer method worked out by Chapin was used. The Chapin method (27) uses silicotungstic acid as reagent, and was developed from earlier work by Bertrand and Javillier. Silicotungstic acid, when added to acid solutions of tobacco, gives reactions with both nicotine and pyridine ranging from slight opalescence to heavy white turbidity, and is sensitive to nicotine as high as one to 1,000,000; and to pyridine (coaltar) as high as one



Fig. 8.—Turkish No. 042; the upper two, distillate; the lower two, smoke solution.

to 50,000. The precipitate soon settles; and, in the case of nicotine, crystallizes (after a period of from twenty-four to seventy-two hours, hastened by agitation) in the form of very thin, characteristic, laminal crystals; in the case of pyridine, the precipitate either remains amorphous, or, as in my experiments, yields minute refractile bodies and crystals of various forms (see plates). Ammonia, amines, and anilins are not precipitated by silicotungstic acid; other alkaloids, as well as pyridines, may be eliminated by



Fig. 9.—Perique No. 047; the upper two, distillate; the lower two, smoke solution.

taking advantage of their relative solubilities (*confer* Chapin).

This method as used in these experiments is as follows. A portion of tobacco corresponding in weight to the amount smoked, was placed in a flask containing 350 c. c. water; to this was added 5 c. c. solution of sodium hydroxide, fifty per cent.; one gram paraffin to prevent frothing, and some bits of glass to prevent bumping. The flask was then connected by means of a three bend tube to a Liebig condenser and this last passed into a receiving flask containing ten c. c. solution of hydrochloric acid, twenty-five per cent. Distillation was continued until fresh samples of the distillate, when acidulated with hydrochloric acid one to four, showed no opalescence when treated with silicotungstic acid. The distillate was then filtered, a liberal first portion being set aside; from a second portion thirty c. c. were taken, and to this were added one c. c. solution hydrochloric acid, fifty per cent., and 0.5 c. c. solution acid silicotungstic, twelve per cent. A beautiful, white, cloudy precipitate formed and rapidly settled. This precipitate after one to four days (not agitated), formed islands of acicular crystals; from these, crystallization rapidly extended until complete, the crystals in the meanwhile changing to characteristic micaceous forms (see plate 2). The crystals were then thrown on a weighed filter, repeatedly washed with cold water, containing one c. c. concentrated hydrochloric acid per litre, until washings gave no opalescence with a sample of nicotine distillate. The filter paper with its crystals was then removed, carefully dried at 50° C., then weighed in a quantitative balance. From the weight of this part the total quantity of nicotine silicotungstate contained in the distillate was estimated, and

from this result the percentage of nicotine was computed by the molecular formula—Nicotine silicotungstate $= 2C_{10}H_{14}N_2 . 2H_2O . SiO_2 . 12WO_3 + 5H_2O$.[6].

TABLE OF RESULTS.

Sample.	Kind of tobacco.	Amount. Gm.	Total distillate. c. c.	Salt content. Gm.	Nicotine content.*	Per cent. nicotine.
.035	Burleigh mixture	3.98	330	0.2420	0.02567	0.0065
[illegible]	Havana	[illegible]	315	[illegible]	0.01948	0.0081
[illegible]	Cheap	[illegible]	215	0.2212	0.02346	0.0060
.043	Turkish	3.30	255	0.2159	0.02280	0.0069
.047	Perique	4.00	290	0.2146	0.02276	0.0055
.053	Cigarette	2.10	270	0.1998	0.02119	0.0031

*Factor [illegible]
Amount [illegible] pipefuls or two cigarettes.

For examination of the smoke a definite amount of tobacco was taken as before. This tobacco was placed in a pipe, or used in the form of cigarettes, and connected to an artificial smoking machine (see plate 1). This machine maintains by means of a water pump a constant (or, if desired, intermittent) suction on the burning tobacco, drawing the smoke through attenuated glass tubes and permitting it to bubble up through the solutions. The first solution consisted of 240 c. c. water, *plus* ten c. c. concentrated hydrochloric acid; the solution in the second vial consisted of 240 c. c. water, *plus* ten c. c. fifty per cent. sodium hydroxide. When combustion of the tobacco was complete an aliquot part of the solution in the first vial was taken and treated with silicotungstic acid, as in the experiments with the distillate; precipitates were obtained in the smoke solutions from all the tobaccos (*vide infra*), and these later yielded crystals for study. The solution in the second vial, when acidulated and treated with the reagent, failed to give any precipitate. Its further examination was not attempted.

Next, from a guaranteed sample of nicotine ("highest quality" Merck) 20 c. c. of a one to 5,000 solution was prepared; this was acidulated with hydrochloric acid twenty-five per cent., and to it was added 0.1 c. c. solution of acid silicotungstic twelve per cent. A sample of pyridine ("puriss." Eimer and Amend) strength of 0.1 per cent. was treated in the same way. From the precipitates of both samples crystals were later obtained, mounted in balsam on glass slides, and examined under the microscope. These crystals are illustrated, as drawn to scale with ruled ocular, in Plates 2 and 3. They are to be used for purposes of identification.

Next, at three different periods separated each by ten days, from *each* of the distillates and from *each* of the smoke solutions ten c. c. samples were taken, to each was added 0.5 c. c. solution of hydrochloric acid twenty-five per cent., and 0.1 c. c. solution of acid silicotungstic twelve per cent. From all the ensuing precipitates, crystals were obtained and mounted in balsam on slides; comparisons were then made of the triplicates to insure characteristics; then from the entire series representative fields were selected and illustrations made. Plates 5 to 10 show these crystals, one plate for each of the tobaccos used, and two drawings each for the distillates and the smoke solutions. Comparisons of these drawings of the distillate crystals with the drawings of known nicotine crystals certainly seem to indicate identity; likewise, the identity of the crystals of the smoke solutions with the crystals from the known pyridine seems demonstrated. Certainly the crystals of the smoke solutions are not identical with those of known nicotine, nor are the crystals of the distillates identical with known pyridine crystals. This would seem to indicate that if nicotine is present in tobacco smoke, it behaves differently from nicotine in steam as to solubility in hydrochloric acid solutions. It seems more reasonable to suppose that nicotine is not present in tobacco smoke except in the form of its decomposition products, of which pyridine seems the most pronounced. It will be noted that in the case of the cigarettes, however, there are present a few nicotine crystals. This may possibly be explained by the rapidity with which cigarettes ordinarily burn, opportunity being thereby afforded for the passage into the smoke of a small amount of undecomposed nicotine. In the smoke of 040 and 043, are crystals of other bodies, possibly of the picoline series, though their identity has not yet been established.

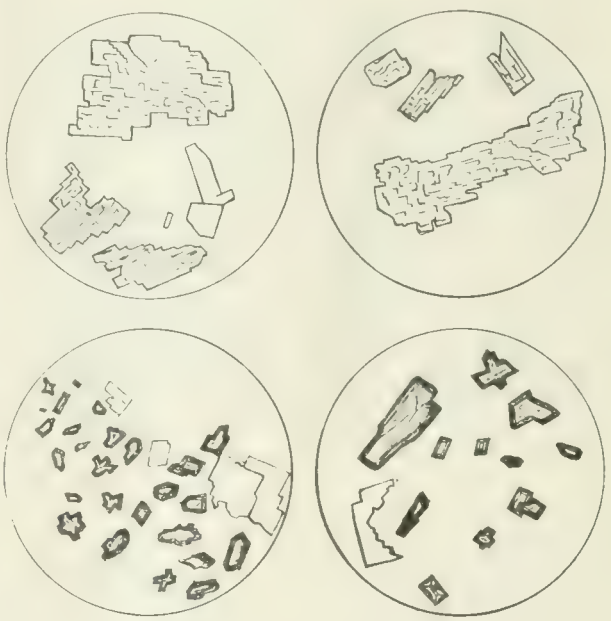


Fig. 10.—Cigarettes No. 053; the upper two, distillate; the lower two, smoke solution.

Repeated analyses shows that this open method does not yield absolutely accurate results, quantitatively, owing to the high hygroscopy of the salt. Either the closed method should be used, or else the salt should be weighed as anhydride—utensils for the manipulation of which were not available to the writer.

SUMMARY.

1. A series of 120 tests on each of fifteen men, in several different psychic fields, show that tobacco smoking produces a 10.5 per cent. decrease in mental efficiency.

2. The greatest actual loss was in the field of imagery, twenty-two per cent

3. The three greatest losses were in the fields of imagery, perception, and association.

4. The greatest loss, in these experiments, occurred with cigarettes.

5. Nicotine was found in the distillates of all tobaccos tested.

6. Nicotine was not found in the smoke of any tobacco, except that of cigarettes, and then only in traces.

7. Pyridine was found in the smoke of all tobaccos tested.

8. Pyridine seems to be the principal toxic factor in the smoke.

ADDENDUM.

Sample Tests.

(1)

THISISTHEFORESTPRIMEVAL
THEMURMURINGPINESANDTHE
HEMLOCKSBEARDEDWITHMOSS
ANDINGARMENTSGREENINDIST
TINCTINTHETWILIGHTSTAND
LIKEDRUIDSOFELDWITHVOIC
ESSADANDPROPHETICSTANDL
IKEHARPERSHOARWITHBEARD
STHATRESTONTHEIRBOSOMSL
OUDFROMTHEROCKYCAVERNST
HEDEEPVOICEDNEIGHBORING
OCEANSPEAKSANDINACCENTS

(2)

Key Words; Cow, Berry, Cane, Dog, Hat, etc. ad numero 50

(3)	(4) easy	(4) hard
Ji	High	Vertical
It	Up	Ignorant
Hi	Dirty	Rude
Ir	New	Simple
Gi	Soft	Deceitful
In	Wider	Stingy
Fi	Wrong	Permanent
Im	Silly	Over
Di	Young	To degrade
Il	Brave	Weary

(5) (6)

Beast	L	H	X	K							
General	H	T	S	L	M						
Republican	H	R	W	X	N	P					
Money	Q	V	F	R	N	Z	H				
University	J	T	K	D	R	C	Q	R			
Study	R	D	V	T	J	D	X	Q	Z		
Automobile	K	H	X	Z	D	Y	J	H	T	D	
Church	N	V	L	R	K	N	C	T	V	D	W
Insect	X	T	H	T	D	K	C	N	V	M	S J
Drink											

(7)	(8) Nouns	(8) Verbs
Fruit	Straw	Furnish
Spider	Canoe	Marry
Mountain	Red	Select
Shallow	Cradle	Level
Carpet	Coral	Judge
Forehead	Tennis	Doubt
Dog	Bicycle	Begin
Iceberg	Citizen	Stand
Narrow	England	Operate
Wish	Monument	Seize

(9)

222	333	444	555	666
777	888	999	444	555
953	795	862	797	458
379	379	370	379	379
793	793	937	793	737

(10)

9421	9643	9765	9862	9753
4789	4789	4789	5784	6789

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433 MAIN STREET.

PSYCHOLOGICAL PITFALLS.

Report of Cases.

BY HOWARD A. KNOX, M. D.,
Ellis Island, N. Y.,
Assistant Surgeon, United States Public Health Service.

In these promising days of "wish fulfillments," "impressions," and "repressions" some of us are even yet attempting to account for delinquency in our youthful offenders by determining their simple intellectual abilities through hard and fast tests, losing sight often of the fact that, when the long hidden and now subconscious traumata of earlier life are unearthed and dispelled, the tendency toward delinquency often disappears and, more than this, the intellectual ability itself often improves and grows like grass in a springtime rain. It is not to be wondered at, then, that women incarcerated for social sins, on whom a Binet test has been done with the result that they may have been called "eight years old mentally," do test out this way and that they return almost immediately to the haunts whence they came, especially when no attempt at analysis has been made.

It is evident that in the case of all defectives, something should be attempted in the way of getting acquainted with the individual and of knowing the stimuli and complexes that go to make him precisely what he is and, further than this, to know how and why he differs so from those who have apparently been exposed to a similar environment during the developmental period of their own lives.

Any one willing to do so may see, from these few suggestions, that the study of defectives is an infinitely complex problem, not one to be delegated to workers with mechanical tests who have no knowledge of the newer psychiatry, although performance tests are instruments of immense value when they are in the hands of people who are qualified to use them intelligently.

Many of us, I believe, look upon deficiency in all cases as being due to heredity, or at least to tangible physical conditions with consequent organic or toxic change, whereas it may be due in any given case to conditions existing purely and solely in the psyche, caused by impressional stimuli that, having a peculiar and intense affective value for that particular individual, may be at the bottom of the whole trouble; until the exact percept can be unearthed, little headway will be made toward a successful termination of the affair. The lesson therefore is that the final disposition of all defectives, delinquents, and others, should be made on the advice of psychiatrists as well as psychologists.

Another kind of pitfalls are sometimes seen by the staff at Ellis Island, and these are the transient disorders that arise as a result of recent psychic shock, such as incidents of the voyage of an unpleasant nature, during which the alien can do practically nothing that requires mentation.[1] These recent psychic shocks are to the conscious mind what the repressed ones are to the subconscious, and the psychogenic depressions, etc., are to the former as the hysterias, psychasthenias, and neurasthenias are to the latter.

The most remarkable mistakes that I have ob-

served, in a way, were made by a young lady who came to Ellis Island armed with a bundle of tests which originated in work that had been done on school children, and of course were not applicable to illiterate aliens. The discoveries that she made were wonderful to contemplate. One was that you could detect defective aliens merely by looking at them, whereupon she proceeded to stand on the inspection line and "tally" the defectives as they passed. Some of the "tallied" ones she proceeded to examine by her tests, after which she turned them over to the staff to be certified and was much disappointed to think that the latter would not do as she suggested. Here another remarkable detail comes out, namely, that by accident even, she did not detect even one defective during her sojourn at Ellis Island. There are on record at Ellis Island thirty-six individuals who Miss X, as I shall call her, averred were feebleminded or imbecile. These were all examined in detail by members of the staff and were in every case discharged, either as normal or too bright to certify under the law, or because their enfeeblement was only apparent and due to physical infirmities, such as defective vision (the latter, of course, being certified for the physical conditions only).

Ten of the most representative cases will now be given, showing race, age, sex, and approximate mental age by our scale for the measurement of intelligence (which see). This scale is based on our work with 10,000 suspected defectives (the tabulations are now complete and available) who were finally discharged as too bright to be certified. It will be seen that, since this scale was founded and based on work with persons somewhat below the average of their race, it must be eminently fair to all. The appearance to us of each case will also be given, and let me go on record as saying that this is as often misleading as it is of help in selecting cases. None of the ten had attended school.

Race	Age.	Sex.	Approximate mental age	Appearance	Nationality by Miss X
Asiatic Russian	29	F.	1 year below adult	Bright	Defective
Italian, South	20	M.	13 or adult	Stupid	Imbecile
Russian	40	M.	11 or 2 yrs. below	Average	No record
Armenian Hebrew	19	M.	12 or 1 yr.	Asymmetric	Imbecile
Russian German	21	F.	13 or adult	Stupid	Feebleminded
Italian, South	24	M.	13 or adult	Average	No record
Italian, South	3	F.	[illegible]	Rhachitic head	Idiot
Italian	24	M.	11 or 2 yrs. below	Stupid	Feebleminded
Russian (Hebrew)	16	M.	10 years	Asymmetry	No record
German	17	F.	12 or adult	Defective	Mental defect

For legal purposes all defectives are certified by us as idiot, imbecile, or feebleminded, but for the sake of accurate classification we divide all our cases into the following classes by ages on the scale as follows:

1. Age six years or over, no intellectual development: *low grade idiot.*
2. Age six years or over, one year mentally: *high grade idiot.*
3. Age eight years or over, two years mentally: *low grade imbeciles.*
4. Age ten years or over, two to four years mentally: *middle grade imbeciles.*
5. Age twelve years or over, four to six years mentally: *high grade imbeciles.*
6. Age twelve years or over, six to eight years mentally: *low morons.*
7. Age fourteen years or over, eight to ten years mentally: *high morons.*

With the aid of the foregoing method and simple proportion, one may correctly grade the younger cases and not, for instance, call a child at six years of age who does the three year requirements, a middle grade imbecile, as he might on casual observation seem to be. It is apparent that the same proportion exists as in No. 6, 12:6::6:X=3, therefore the child is at present, at least, and at the worst, a low moron.

It will be seen that our scale for the estimation of the degree of enfeeblement depends largely on the use of performance tests, illustrations of which will be furnished to those who are especially interested upon request for a reprint of this article. The scale as here given was drawn up from experience gained at Ellis Island, and contains some details from the Binet scale.

SCALE FOR THE ESTIMATION OF THE DEGREE OF DEFICIENCY IN ILLITERATES AND OTHERS.

At one year: Signs described in textbooks. Barr: *Defectives*, edition of 1910; Holt, Diseases of Children.

At two years: Signs described in textbooks. Barr: *Defectives*, edition of 1910; Holt, Diseases of Children.

At Three Years.

1. Recognize toys and simple objects.
2. Point to ear or lips.
3. Repeat two figures, as 7 5.
4. Recognizes objects in child's picture books that it has seen before.
5. Knows own name.

At Four Years.

1. Put some of the pieces in Seguin's form board.
2. Do line "a" of the cube imitation test, or touch any two blocks.
3. Repeats three figures, as 7 9 5.
4. Recognizes ring, pencil, shoe, hat.
5. Knows own sex.

At Five Years.

1. Put all the pieces in Seguin's board in three minutes.
2. Do line "b" of the cube test, or "touch" after the examiner any three blocks.
3. Count any number of the examiner's fingers.
4. Copy a square and a circle.
5. Obey two commands, as "shut the door" and "hand me the pencil."

At Six Years.

1. Do "imbecile test" in five minutes with less than six mistakes.
2. Do line "c" of the cube imitation test.
3. Build structure with four blocks after seeing structure 25 seconds.
4. Knows right or left hand or ear.
5. Knows own age.
6. Obeys three commands as "open door," "shut window," and "bring book."
7. Knows purpose of domestic animals that are familiar.

At Seven Years.

1. Do "geographical" test after being shown, in three minutes.
2. Do "imbecile" with more facility than at six years of age.
3. Imitate construction block structure, using five blocks.
4. Copy a diamond with a lead pencil.
5. Repeat four figures, as 9 3 7 4.
6. Can count readily from one to twenty.
7. Can name the action shown in simple pictures as "driving horses."

At Eight Years.

1. Do five block frame test (Healy)* in five minutes.
2. Do line "d" of the cube imitation test.
3. Counts from twenty to one with not over two errors.
4. Difference between water and milk, horse and cow, if familiar.
5. Repeats five figures, as 7 3 5 9 2.
6. Recognizes primary colors, red, blue, green, and yellow.

At Nine Years.

1. Do diamond frame test in less than ten minutes.
2. Put cut out sections in horse picture (Gwyn) in five minutes.
3. Put pieces in Seguin's board in less than twenty seconds.
4. Knows the date.
5. Names the days of the week and tells the time approximately.
6. Arranges five cubes of the same size, weighing 9, 12, 15, 18, 21 grams, in the order of their weights, twice out of three trials.

At Ten Years.

1. Do "moron" test in less than ten minutes.
2. Perform the details of the visual comparison test (NEW YORK MEDICAL JOURNAL, September 13, 1913).
3. Name months of the year.
4. Simple addition of like, followed by unlike numbers, as 5 and 5=, 5 and 4=, 6 and 6=, 6 and 5=, up to and including 8 and 8=, 8 and 7=.
5. Simple addition of two numbers, one of which is increased each time by 1, as 7 and 1=, 7 and 2=, 7 and 3=, 7 and 4=, 7 and 5=, 7 and 6=, 7 and 7=, finishing with 7 and 8=.
6. Name the days of the week backward.

At Eleven Years.

1. Do "e" line of cube imitation test without being shown over five times.
2. Repeat six figures, as 6 5 8 3 9 7, with not over five trials to a set.
3. Simple story of five details (cowboy story), remember at least three.
4. Difference between feet of horses, dogs, and cows; ice and glass.
5. Give an intelligent account of occupation for the last year.
6. Concrete subtraction of simple numbers from 10, as 10 eggs less 3 eggs =.

At Twelve Years.

1. Do "casuist" test in five minutes with sensible mistakes if any are made.
2. See absurdities as "a man walked down the street, swinging a cane, with his hands in his pockets," "man cut into ten pieces; was it suicide?"
3. Syllogism: "I am taller than my brother and my brother is taller than my father; which of us is the taller?"
4. Common sense problem: "A man was walking in the woods and he saw something hanging from the limb of a tree which frightened him; he ran back to the village and told the police; what do you think he saw?"
5. Concrete subtraction of simple numbers from 20, as 20 cents less 4 cents =.
6. Divide twenty apples into four equal parcels; how many will be in each?

At Thirteen Years and Onward.

1. Do "feature profile" test in ten minutes or less.
2. The picture of a ship (Gluck) pasted to a board and cut into ten equal sized pieces, all oblong in shape and extending from the top to the bottom of the picture, should be properly assembled in ten minutes.
3. Obey four commands.
4. Finish: "My head is to my hat as my hands are to my ————?" (gloves).
5. Define: Justice, pity, truth, goodness, and happiness.
6. Combine factors in addition as, "how many legs have a horse, two men, and three chickens.

Makeup Tests for Failures Beyond Seven "Mental Years."

1. Give good account of technicalities of previous occupation, or incidents of life.
2. Why is it wrong to kill? Which is worse, to lie or to steal?
3. Do Gwyn's "triangle" three times in succession in forty-five seconds.
4. Do Kempf's "diagonal" in three minutes.
5. Incomplete clock face test.
6. Count fifty dots, each one eighth inch in diameter, in ten lines, with less than an error of four.

QUININE AND UREA HYDROCHLORIDE IN NOSE AND THROAT SURGERY.

By ARTHUR J. HERZIG, M. D.,
New York.

The choice of an anesthetic to be used in the adult has always been a subject of great importance to the rhinologist. The anesthetic which would remove the danger of hemorrhage and toxicity and produce a proper anesthesia is the one sought for. Urea and quinine hydrochloride fulfills a long felt want, being nontoxic and antihemorrhagic and at the same time a perfect anesthetic, while the use of cocaine and its allied salts has often been fraught with danger to the patient.

The technic I pursue in adenoid and tonsil resection is as follows: I use a four per cent. solution of urea and quinine, mixed with boric acid, to prevent fermentation, in the proportion of one to 100, after instructions to clear bowels the day previous to operation and no meal four hours before operation. I now have my patient, if a child, prepared in a morning dressing; if an adult, prepared simply with sterile towels and gown. I inject ten minims into the anterior pillar of the fauces, high up, where one would incise a peritonsillar abscess, and ten minims, low down, in the posterior pillar of the fauces. This latter part of the injection cannot always be done where there are very large tonsils present. In fact one half of my cases only have one injection made, namely, in the anterior pillar. No pain is experienced in the single injection method. For the adenoids I use a fifty per cent. solution prepared the same way, but only swab this on with a postnasal applicator. The anesthesia here is nearly as complete as that of the injection. I now have my patient wait from ten to fifteen minutes. I then proceed to perform my tonsillar resection and removal of adenoid tissue, as if any other anesthetic had been used.

My experience, extending over a period of over four years in tonsil and adenoid surgery with urea and quinine, is as follows:

I have operated in 390 cases in hospital and private practice. Of this number 150 were adenoids alone and 240 were adenoids with enlarged tonsils. Of these 240 over one third were in adults over the age of sixteen years. Thirty-three cases of fibrous tonsil were met with. I also resected the lower half of the uvula in six cases. In these cases the injection was made at the junction of the uvula and soft palate. I cauterized four cases of enlarged tonsils in the adult, owing to refusal of removal. All of these patients had no apparent pain, and in older children and adults where one could get an intelligent answer, this was plainly told.

My patients suffered mostly from gagging. This may be overcome in adults by rapid and regular breathing. In none of these cases was there any hemorrhage five minutes after the operation; fur-

thermore, no postoperative hemorrhage occurred at any time. The patients complained of soreness of the throat after operation, although upon testing the fauces I found anesthesia present, which lasted from two to eight days. There need be no fear of edema spreading to the glottis, as this never occurs. The appearance of the throat twenty-four to forty-eight hours after operation, may be as follows: A bruised condition of the anterior pillar of the fauces, also edema, which spreads from one anterior pillar to the other, involving the soft palate and uvula; this disappears usually in from three to ten days. While it lasts, the patient's throat is in a state of partial anesthesia. I tell my patients to suck ice, as this hastens the absorption of the fluid and gives marked comfort.

Sometimes a membrane forms at the site of the injection. This disappears in two to ten days of its own accord, and is due to the urea. The quinine is the anesthetic and the urea, by means of its irritant properties, causes the edema, which acts as a hemostatic. Unless a physician is acquainted with the appearance of this pseudomembrane and edema after operation, he may feel as though he were dealing with a case of infection, or even diphtheria (without a culture being taken), on the appearance of the membrane, which has a tendency to spread upon the soft palate.

I tell my patient to use a spray or gargle of equal parts of hydrogen peroxide and tepid water, every three hours; also to abstain from any solid food for thirty-sir hours after operation. A cathartic is usually given. In case the patient suffers too much soreness (for the postoperative anesthesia only involves the pillars of the fauces and tonsillar area), I prescribe sedative or antiseptic tablets, to be dissolved on the tongue every hour or so; also cold compresses externally.

In conclusion, I wish to emphasize the advantages of urea and quinine hydrochloride over cocaine, in that it is nontoxic and hemostatic. If the use of this local anesthetic proves as efficacious in my readers' hands as in mine, my purpose will have been fulfilled.

103 West 121st Street.

MEDICAL CONTRACT PRACTICE.*

Causes, Abuses, Remedies.

By Samuel A. Tannenbaum, M. D.,
New York.

[illegible]. My [illegible] my will, consents.—Shakspere.

Varieties.—The practice of medicine in New York under the terms of a contract between physicians and patients or between physicians and some medical practice corporation, is quite common. It would not be a difficult matter to estimate the total number of people in greater New York that are treated under the provisions of some such contract. 1. It is a comparatively easy matter to ascertain the number of fraternal organizations known as lodges that have such contracts between their members and physicians, and from their secretaries the actual number of these contracts can be determined. 2. There are the various social clubs and mutual aid associations who give their members the "benefits" of contracts with physicians for medical services at a fixed price per annum. The number of these could also be easily enough ascertained. 3. Then there are the various mutual aid societies organized by the laborers in large shops or factories and by their employers in the large department stores. 4. A fourth kind of medical contract is that between patients suffering from venereal or sexual diseases and the genitourinary specialists, legitimate and quack. 5. A fifth kind of medical contract practice is that offered to the laity by medical practice corporations, consisting of physicians, or of laymen, who practise medicine as a business. 6. A sixth variety of contract practice, one that is not as common as it deserves to be, is that where the head of a family employs a physician by the year at a fixed fee. 7. There is also a seventh variety of contract practice, one that is frowned upon by the general medical body, viz., when a physician makes a contract with an individual patient to cure him of some particular ailment, no matter what, for a definite sum or in a specified period.

Medical insurance.—Tonight we are not concerned with all these different forms of contract practice. Some of these are good, i. e., good for physicians and public, and commendable; whereas others are bad, very bad, bad for physicians and public, and to be condemned. Contracts between physicians and heads of families are good, as are also contracts between honorable physicians and sufferers from venereal disease. The seventh variety of contract practice is not a form of medical insurance and is practised by so few physicians, almost never honorably, that we shall say nothing about it now; it does not affect the profession as a whole, or only remotely. The sixth variety of contract practice is such a sensible and honorable form of medical insurance, so beneficial to both parties, that although it is susceptible to abuses we shall not discuss it now. Our attention now is to be centred wholly on those forms of contract practice that may be designated as "lodge practice" (including clubs, mutual aid societies, etc.) and "medical corporation practice." Both of these are forms of medical insurance which though in theory a great boon to the public and of some benefit to the physician, are in practice a curse to the physician and a very doubtful benefit to the insured. The offenses arising from this kind of medical practice are rank and smell to heaven. The object of this paper is to explain why and how this deplorable state of affairs has come about and to suggest possible remedies, for the sake of the public as well as for the sake of the practitioner of the noble art of medicine. Let it be understood, and this hardly admits of question, that there is no antagonism between the interests of these two parties, much less than generally exists between employer and employed. It is to the interest of the physician to have patients, to treat them well, to help them, to relieve their sufferings, and—where possible—to cure them; to do all these things as quickly, as thoroughly, and as cheaply as possible. If he satisfies his patients he is sure to benefit thereby. It is to the interest of

the layman to have competent and honorable physicians to look after him when he or those dependent on him are stricken with illness. The layman must bear in mind that a physician is an absolutely indispensable member of the community, that he must live and support his family, and that he is entitled to a fair financial return on his investment of capital and time; also that a physician is required to live up to a certain standard of respectability and that he must be comfortably enough situated to keep abreast with modern medicine. A poor physician cannot long remain competent. Poverty begets ignorance as well as criminality. The physician who is confronted with starvation has no patience or means to study and no inclination to be altruistic; his time and attention are devoted to making both ends meet.

Causes of medical insurance.—But the layman cannot be expected to look out for the interests of the physician. In this age of individualism the rule is, every man for himself and the devil take the hindmost. Moreover, the public cannot, even if it would, support in comfort a large body of physicians. Our workingmen have nothing to spare, have no unneeded surplus. The cost of living is mounting steadily; wages do not rise in proportion with expenses. It has been estimated that fifty per cent. of American adults earn less than $500 a year; that ninety per cent. earn less than $800 a year, and seventy-five per cent. less than $600 a year. It has also been estimated that "an income of $900 a year will provide only the minimum of nourishment and comfort." Bearing these facts in mind it is evident that very few families can be prepared for such an emergency as an expensive illness. Most of our people must not only economize in every way possible, but must, in case of sickness, resort to some form of medical charity. Persons earning from $1.50 to $2.50 a day cannot afford to pay a physician a dollar a call and twenty-five to fifty cents for medicine a day for any length of time without feeling the loss keenly. Drugs are even more expensive than doctors.

This is an age of insurance. People insure against death, against accident, against burglary, against fire, against loss of wages, against twins, etc. Considering this, and bearing in mind the poverty of the people, what is more natural than that there should have arisen medical insurance and, what generally goes with it, druggist insurance. The latter is of great importance, for very often, as we shall show, it is "the nigger in the woodpile." Poverty, then, is the cause of medical insurance as far as the public is concerned. And as the poor are an inevitable product of our social system, medical insurance is an absolute necessity. Unfortunately medical insurance has not been taken up in a genuine businesslike way on a large scale, but has been left, in this country, to ignorant laymen managing fraternal associations.

As far as the physician is concerned, poverty is the reason, the sole reason, for engaging in medical contract practice. A young physician finds that he has to compete with older men on even terms; rents are high; food and clothing are costly; telephone, gas and coal bills must be paid; the public has little confidence in him; he must live and he must appear to be prosperous. The foolish public judges a physician's ability by the money he makes. The proportion of physicians to laymen in New York is about one to 400. The dispensaries and hospitals are doing a rushing business; nostrum vendors are thriving on the sale of medicines to persons who treat themselves; Christian scientists, osteopaths, and other irregular practitioners are prospering on another portion of his possible clientele of 400; druggists are treating others; the board of health is also making inroads into the private physician's practice; improved hygiene has materially reduced the number of the sick; preventive medicine has reduced the sick rate; vaccination and immunization have further decreased the number of invalids; safety devices have lessened the number of surgical accidents, etc. Not only are fewer people sick nowadays, but they are not sick as long as they were before the days of antitoxins. And serious cases, and even obstetric cases, are much more often sent to hospitals than formerly; the hospital habit and sanitarium habit are a great menace to the private physician's existence. Then there is the specialist craze, which is characteristic of these days; many persons, especially those who consider themselves "smart," rush to a specialist for whatever ails them. The number of possible patients left for the general practitioner, especially the young one, is very small. What then is he to do? Where are his patients to come from? Ethics forbids him to advertise under the penalty of expulsion from the medical associations; he cannot hire agents to secure him patients. The only thing left for him to do is to enlarge his acquaintance and to insure some income by joining lodges and fraternal associations in the hope of being elected to the office of physician or to accept a contract with a medical practice corporation. Poverty on the part of layman and on the part of physician is responsible for medical contract practice.

Fees and contracts.—Before we can answer the question whether this sort of practice pays, let us consider the cost of such medical insurance. In most lodges and sick benefit associations each member pays one dollar a year for himself or two dollars a year for himself and his whole family. Some lodges pay three dollars a year for each member and family. Fifteen years ago, the prices were exactly double; competition has halved the cost notwithstanding that there are now relatively fewer physicians, that it costs more to become a physician, that physicians are now better equipped and more skilled, and that the cost of living is almost doubled. In consideration of this premium, the insured is entitled to the services of the physician at the patient's home or at the doctor's office at any time and anywhere in greater New York for all but surgical and venereal ailments. Obstetrics is not included in the contract. In addition, most lodges also arrange with some pharmacist to supply all medicines prescribed by the lodge doctor at twenty-five cents for each prescription. Usually the pharmacist is recommended to the lodge by the physician who has been elected. The average lodge contains, let us say, one hundred members, and the average family consists of five persons. Several physicians who do lodge work have assured me that, deducting all

expenses—car fares, membership dues, treating the members on election night to beer and cigars and treating the officers on pay nights—they averaged six and one half cents for each outside call! This, I am convinced, is a very high estimate, but I am willing to let it stand.

Most lodges also employ a physician as a sort of detective to visit their sick members twice a week for the purpose of seeing if they are really sick and entitled to benefit. For this service the lodges pay from $20 to $200 a year according to the number of members. In addition, lodges elect a physician to examine their candidates for membership; a single candidate pays fifty cents for an examination and a certificate, and a married couple pay seventy-five cents. It is extremely rare for one physician to render all three kinds of service to a lodge: as a rule two physicians are elected, one to treat the sick and the other to do the other work. I take it for granted that my auditors know that to obtain these positions the physician must, as a rule, be a member of the association and must enter into a more or less undignified competition with one or more (usually more) of his confreres in an election. To make this kind of practice "pay" the physician must succeed in capturing several associations and must work day and night. Some physicians have as many as forty lodges or associations to look after, but the majority have only two or three.

The medical practice companies are of two kinds. A shrewd layman hires agents, whose business it is to make a house to house canvass in various districts and to make contracts with as many families as possible for medical services for the whole family at ten cents a week or one dollar for the quarter year, payable in advance. The agent describes the physicians of the company in glowing terms, dwelling on their hospital connections, and makes all sorts of promises, including the purchase of any medicine that the doctor may prescribe at twenty-five cents the prescription. The contracts are secured and the company then seeks out some impecunious physician in each district and engages his services for twenty-five per cent. of the money collected; in other words, the physician gets two and one half cents a week from each family! Obstetrics is not included in the contract, but the physician is expected to do this kind of work at greatly reduced prices. The company has no difficulty in finding druggists anxious to fill prescriptions at twenty-five cents and they soon do a flourishing business in which every one thrives—except the poor overworked doctor. Here, as in dispensaries, hospitals, and the board of health, everybody's services are of value, except the doctor's.* It is like a production of *Hamlet* in which every one, even the gravedigger's helper, is paid—except Hamlet! One of these unfortunate physicians told me that he had to work very hard and endure the contempt of his patients for an income of four dollars a month! Let me add that the agent gets $1.25 for each contract, and ten per cent. of all he collects. It is almost superfluous to add that the physician has no control over the company's books, and has no means of knowing to what extent he is being done.

A few physicians soon realized that this did not pay and that there were possibilities for wealth in it—if properly managed. Accordingly, two or three physicians clubbed together, hired an office, gave themselves a name, engaged agents to secure contracts at ten cents a week for each family. The size of the family is not limited. The reasons for this ought to be evident to one who knows something of human nature. As soon as a woman—the agent usually talks to the women—hears that the size of the family is not limited, she includes in the contract not only herself, her husband, and her children, but her married children's children and even other relatives. The larger the "family," the better for the company. The contract guarantees the services of a physician at any time, at the patient's home or at the company's office; but house calls that are telephoned to the office after 10 p. m. must be paid for at half the customary fee. Obstetrical work is done at reduced rates. The medical services are rendered, not by hired physicians, but by the members of the company. Medicines are supplied by the company at twenty cents each: in fact the physician gives no prescription, but tells the family that he will send the medicines to the house.

A modification of this practice common among the Italians of New York is deserving of special mention. A fraternal association is organized and one or more physicians are elected as the physicians of the society. Single men pay one dollar a year and families pay two dollars a year for medical insurance. The doctor gets no other fee for his consultation and is required to provide all medicines for fifty cents. In other words, the physician gets not only an annual salary but also fifty cents for each consultation and is required to supply all necessary drugs. That one may in this way have a lucrative practice goes without saying.

Objections to contract practice.—As society is at present organized this kind of medical practice is objectionable for several reasons. The interests of a patient are best served only if, 1, his physician is adequately compensated for his services; 2, if the physician's interests are not diverted into other channels which may expose him to temptation; and, 3, if the relationship of doctor and patient can be terminated at any time on either side for adequate cause. Any arrangement that violates these conditions must result in almost incalculable evils—evils to the public, the patient, the physician, and medical science.

Abuses from contract practice.—Poverty is the cause of the physician's engaging in contract practice. No man is so base that he would not prefer to make his living ethically and honorably. A man, especially an intellectual man, is humiliated every time he makes a dollar dishonestly. Physicians have from time immemorial been characterized by charity, humanitarianism, and altruism; but the public, forgetting that they take our life when they take from us the means whereby we live, have never failed to impose on our goodness and to take advantage of our unpractical and unbusinesslike ways. The poor physician's very existence being threatened, he is likely, like the drowning man, to grasp at a straw. Contract practice promises him a living, perhaps more, and he snatches at it. He

soon finds, very soon, that he is again being victimized. Two and a half cents from each family a week, or six cents (and less) for each outside call will not keep the wolf from the door. Starvation stares him in the face; the landlord, the butcher, the grocer, the telephone company, the gas company, the clothier, etc., know no charity. Necessity finds a way out of the slough of misery. As one fire drives out another fire, so trickery is met with trickery. And gradually the following abuses of medical practice arise, which unfortunately do not confine themselves to contract practice, but spread to those who have to compete with the contract doctor.

1. *Neglect of the patient.*—To lighten his labors and reduce his traveling expenses, the doctor understates the gravity of the patient's illness, thus reducing the frequency of his calls. As soon as the invalid is able to leave his bed, he is instructed to consult the doctor at his office, although it may be advisable for him to keep in the house. Besides, no physician who feels that he is not being adequately compensated for his work, can take adequate interest in the patient or devote as much time and attention to him as the case deserves; he can hardly be expected to make several calls a day even where the patient's interests require it. The analysis of the patient's urine, feces, sputum, blood, etc., cannot be expected of a lodge doctor or a "ten cent doctor." Not infrequently such a doctor will not scruple to hurry an unprofitable patient off to the hospital so as to be rid of him. While this is undoubtedly to the patient's good, it is often a great hardship on a family when the patient happens to be the mother, for it is better to have even a sick mother at home than none at all.

2. *Improper medicines.*—In cases in which the patient is entitled to "doctor and medicine," the latter at twenty-five cents a prescription, you may trust human nature that the pharmacist and the physician will have an arrangement between them whereby the latter will never see a patient without prescribing at least two or three medicines, and those only of the cheapest nature, such as calomel tablets, mistura rhei et sodæ, compound cathartic pills, epsom salts in solution, a so called "cough mixture," etc. Now and then the doctor prescribes "something special," something that he tells the patient is an expensive "patent medicine" (laymen are always greatly impressed by the words "patent medicine") which must be paid for "extra." In this way the druggist gets rid of proprietary preparations and of the sample medicines supplied to him by the physician. For the pharmacist, the arrangement is usually sufficiently profitable to enable him to pay the physician a certain commission. It is only fair to add that such trickery is never practised by physicians or pharmacists who do not engage in contract work. As might be surmised, the worst offenders in this matter are the companies that contract to fill any prescription for twenty cents and the physicians who supply all medicines at each consultation for fifty cents. This sort of business can be made so profitable that the physician's services can be thrown in for nothing, like the optician's who charges nothing for examining the eyes, but collects handsomely for the glasses.

3. *Antitoxin abuse.*—One of the commonest tricks resorted to by contract doctors is the administration of diphtheria antitoxin in as many cases of acute tonsillitis as he can. Our foreigners are frightened by nothing so much as by "spots in the throat." All that the physician has to do is to suggest the possibility of diphtheria and to explain the wondrous effects of the use of antitoxin, and in almost every case he is told to do whatever he thinks will save the child. But antitoxin is a "patent medicine" and costs anywhere from five dollars to ten dollars. The anxious mother will spare no expense to save her baby; if necessary she will pawn her pillows. The physician then purchases 1,000 units of antitoxin for seventy-five cents or $1.25, injects the antitoxin, pockets the difference, and considers it as having done a good day's business. In these cases he can always salve his conscience with the reflection that, after all, the case may be one of mild diphtheria, the administration of antitoxin does no harm and may even serve to immunize the patient. I have even heard it said that some are unscrupulous enough to inject only water, not even sterilized.

4. *Superfluous consultations.*—The foreign portion of our population stands in great awe of the title "professor" and they never think they have done their duty by a patient unless they have had a professor in consultation. In surgical cases especially they will rarely dispense with such a consultation. The contract doctor cannot bear to stand by and see a superfluous consultant come in and take away ten dollars to twenty-five dollars for a single consultation, while he is getting from two to four cents a week. It is not human nature. With a superfluity of consultants and professors at one's disposal it becomes a very easy matter to find consultants who will gladly give up to the physician who calls him or recommends him a portion of his fee, usually from twenty-five to fifty per cent. It needs no ghost come from the grave to tell us that almost every case will need at least one consultation with a professor. That gudgeon, the public, always has money for a professor (and for gold teeth), even though he do no more than shake his head wisely and agree with the attending physician. Truth compels me to confess that this abuse is practised by others than contract doctors. The physician who has to compete with the contract doctor must adopt some of his tactics. Where several physicians have united to form a medical practice company one of their number plays the role of consultant.

Our hospital system is also largely responsible for the consultation abuse. Almost invariably when a physician desires to send a patient to the hospital, the superintendent informs him that there is no room. But if one of the physicians connected with the hospital sees the patient in private consultation, a little note from him will "fix" it. In this way the consultant becomes the physician's catspaw. Hospitals always have work for the men connected with them.

5. *Division of fees and specialism.*—Another of the weaknesses of humanity of which the underpaid contract doctor takes advantage, is the belief in specialists. To most foreigners a specialist is a "pro-

fessor" who has distinguished himself in some particular branch of medicine. The general practitioner becomes a sort of directory or guide to the specialist's office. What follows? If the patient has an earache, an aural specialist must be consulted; if he has a bellyache, a surgeon must be consulted; if he has a cough, a lung specialist must be consulted, if he has heartburn, a stomach specialist must be consulted, if he is troubled with "nervousness," a neurologist must be consulted; if a child is sick, a pediatrist must be consulted, and so on. Specialists, too, are made of flesh and blood, and considering that, owing to the restriction against advertising, they are dependent upon the good will of their confreres for patients, it is inevitable that the physician who plays the role of agent gets a part of the specialist's fee. Only a few physicians can advertise themselves in their own medical journals or through their association with millionaires or by reporting wondrous new cures.

Clinical medicine is not an exact science. A positive diagnosis is not always possible. All sorts of contrary opinions can be defended. Arguments can be found in the defense of whatever course cupidity may prompt. If the patient can pay for an operation, an attack of colic may be an exacerbation of a chronic appendicitis in which it is best to operate; an obscure dysmenorrhea may be a rupturing ectopic gestation sac; fits of sneezing may be the result of a deflected septum or a hypertrophied turbinate, etc. The patient is induced, to his great advantage, to submit to an operation; the surgeon pockets the fee and gives the doctor a liberal commission, twenty-five to fifty per cent., for his assistance. This division of fees is practised on an enormous scale throughout the country and even abroad, notwithstanding that all attempts to justify it have necessarily failed. The secret division of fees is wrong; no man can serve two masters honestly. Physicians may insist that they call in only those surgeons in whom they have absolute confidence; but they are always open to the suspicion that they place their confidence in the man who gives a commission and preferably in the man who gives the largest commission. And they would not be human if they did not. But the medical profession ought to be like Cæsar's wife—above suspicion. To the credit of the profession, however, be it said that not even a contract doctor will have a case operated in when there is not justification for it—perhaps because no surgeon will stoop so low.

6. *Accouchement forcé.*—One of the worst evils growing out of cheap contract practice, and one that cannot be sufficiently condemned, is the unnecessary application of forceps in obstetric cases. Confinements at reduced prices is one of the inducements for laymen signing up with a lodge doctor or "ten cent doctor." When the time comes to deliver the prospective mother the physician finds a complication which makes it necessary "to take the baby with instruments," and to do this an assistant, a friendly physician, or one of the company, is called in to administer an anesthetic. In this way the patient is mulcted out of at least ten dollars, five dollars for the anesthetist and five dollars for the obstetrician.

7. *Commissions.*—A lesser evil is the collection of a commission from opticians, manufacturers of trusses, artificial limbs, artificial eyes, orthopedic appliances, etc. This is regarded as a kind of "honest graft" because the manufacturers assert that the patient has to pay the same price whether the doctor gets a commission or not. From what we know of American methods of keeping up the prices of commodities, this may be true. It may be to the credit of the profession that this practice originated with the manufacturers, not with the physicians. Less justifiable and more likely to become an abuse is the collection of a commission from laboratories for the analysis of blood, sputum, urine, etc., and from x ray specialists.

REMEDIES.

Such, in brief, are the chief evils resulting from cheap contract practice. How is this deplorable state of affairs, which brings the noblest of professions into disrepute, to be remedied? That is the problem we would solve tonight. But inasmuch as this subject is assigned to another speaker, I shall mention only briefly the measures to which I believe we should direct our efforts. These are as follows:

1. *Publicity.*—To take the public into our confidence will benefit the profession in two ways. In the first place, crookedness can never endure when the light is turned on it. Secondly, the public will see its folly and cooperate with us to bring about a state of affairs in which the interests of both parties will be conserved and promoted. The sense of justice inherent in humanity must be appealed to.

2. *Unionization of physicians.*—All physicians, of whatever school, practising in New York, should be members of one body that shall have the power to fix minimum rates, to revise the code of ethics from time to time, to punish offenders against medical ethics, to look after the economic interests of physicians, to watch over the public's medical welfare, to move for the cancellation of the licenses of physicians convicted of certain offenses, etc. The movement now afoot to organize the medical profession into such a union—The Associated Physicians' Economic League—deserves every encouragement and support.

3. *Correction of abuse of charities.*—The abuse of charity in our dispensaries and hospitals must cease. Dispensaries should not be private money-making institutions, but should be public institutions in which only the poor are entitled to treatment. Physicians working in dispensaries and hospitals should be paid salaries just as are the physicians employed by the board of health. The district attorney should be required to prosecute any one taking undeserved charity. So, too, all hospitals should be owned by the public and the physicians in them should be appointed in accordance with civil service requirements. Nor should the board of health engage in unfair competition with private physicians by vaccinating all children gratuitously, treating the victims of venereal disease free of charge and even advertising for them in the daily papers, sending nurses and physicians to instruct parents as to infant feeding, etc.

4. *The secret division of fees* should be made a misdemeanor punishable by fine and (or) temporary suspension from the practice of medicine.

The attending physician should be entitled to extra compensation for engaging in a consultation or cooperating with a surgeon. Consultant's fees should be fixed and easily ascertainable. Physicians of moderate means should consult more with one another instead of calling in the physicians of the plutocracy.

5. *Advertising.*—Every physician should be permitted to advertise his specialty on his sign and on his stationery and to publish his card in a newspaper. This would make the specialist independent of commission seeking confreres.

6. *Hospitals.*—Hospitals, like dispensaries, should be public institutions, and any properly qualified physician should have the right to take a patient into a hospital and treat him there. No hospital charter should be issued to groups of schemers banded together for the purpose of posing as specialists and "professors." So, too, the study of medicine should be restricted to those having a collegiate education, and no physician should be permitted to practise medicine unless—as in Minnesota—he has spent at least one year in a hospital as an interne.

7. *Physicians as public officers.*—When all is said and done, however, these measures can only ameliorate present conditions; they cannot eradicate them. Poverty and ignorance are the inevitable outcome of our capitalistic system. As long as physicians have to contend with starvation, they are compelled to resort to the business methods now in vogue everywhere. We live in an age when to be poor is disgraceful; when no one cares how one makes one's money provided one makes it and is not "caught with the goods"; when "success" means a large bank account. We see corruption everywhere; every sphere of human activity is graftridden. And, in addition, the physician is constantly being imposed upon. Necessity forces him to follow the example of others; he executes the villany he is taught. Medicine and business are incompatible. The health and life of the community are too precious and sacred to be bought and sold like merchandise. The health of the community should be the business of the community. We are beginning to realize this as regards the school child; then why not also as regards the adult? Physicians should be public servants just as policemen, firemen, letter carriers, street cleaners, judges, and schoolteachers are. That this is remote I know, but that it will come is certain.

For the present let me say that, notwithstanding the existence in the profession of many and undoubted evils, the following words of R. L. Stevenson are truer than ever. He says: "There are men and classes of men that stand above the common herd: the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarelier still the clergyman; the physician almost as a rule. He is the flower of our civilization; and when that stage of man is done with and only remembered to be marveled at in history, he will be thought to have shared as little as any in the defects of the period and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practise an art, never to those who drive a trade; discretion, tried by a hundred secrets; tact, tried by a thousand embarrassments; and what are more important, Herculean cheerfulness and courage. So it is that he brings air and cheer into the sickroom, and often enough, though not so often as he wishes, brings healing."

243 SEVENTH STREET.

Abstracts and Reviews.

THE ETIOLOGY OF OROYA FEVER AND VERRUGA PERUVIANA.*

BY PROFESSOR RICHARD P. STRONG,
Cambridge, Mass.,
Harvard [illegible]

Within the past two generations many of the baffling diseases of tropical and subtropical regions have yielded their secrets to scientific investigators, and we now know the cause of malaria, sleeping sickness, Malta fever, and a number of others, but there remain several diseases which are still clouded in obscurity. Among these Oroya fever and Verruga peruviana were to be numbered until the end of the past year, when our investigations established the cause of one, and the nature of the cause of the other.

These diseases have been known in Peru from the most ancient times, and have been commonly considered as a single disease in different stages of development. They have caused an enormous mortality. Daniel Carrion vaccinated both arms with the blood from a verruga tumor, in 1885, and, after an incubation period of twenty-three days, became ill with Oroya fever, dying therefrom in a few days. This was believed to confirm the unity of Oroya fever and Verruga peruviana, and the initial febrile stage which was described by the martyr has since become known as "Carrion's fever." Much doubt has recently been thrown on his experiment, and it is suggested that his patient had Oroya fever in addition to verruga, or that Carrion died of typhoid fever, and not of Oroya fever.

At the time of our arrival in Peru the medical profession there held the view that verruga in its severe type begins with the initial stage of "Carrion's fever," which lasts from two to four weeks: that there are profound anemia, great prostration, and a high mortality. In the nonfatal cases the fever begins to subside at the end of this period and the verruga stage begins. There is more or less fever of the intermittent or remittent type, pains in the joints, and anemia, in addition to the eruptions in the milder forms of the disease. This eruption is supposed to be the final form of both types of disease—the acute, when survived, and the mild form. The more abundant the eruption, the more certain is recovery, according to the belief prevalent in Peru. The eruption may occur anywhere on the body, but is commonest on the extremities. It may be miliary, nodular, or *miliaire* (pustular), and is associated with some edema of the extremities in its earlier stages.

Our investigations into the literature showed that

[illegible] Harvard Medical [illegible]

Barton had described a bacillus in the blood of patients dying from Carrion's fever which was similar to the colon bacillus in many respects. He believed this to be the cause of the fever, and found that it was capable of producing a fatal septicemia in animals, or a warty eruption on the skin. Others also found this organism, but placed it among the typhoid coli group, and were not able to induce any eruption with it in animals. It was believed, therefore, not to be the specific cause of the disease.

We very soon came to the conclusion that verruga and Oroya fever were different diseases, though they were found in the same localities and probably often existed simultaneously in man. Oroya fever proper is caused by a blood parasite which gives rise to severe infection, fever, rapid and very intense anemia, and great prostration, and often ends fatally.

The parasite which causes Oroya fever may be found in the blood in both fresh and stained specimens, often in very large numbers, so that no field of the oil immersion lens is free from infected red cells. It is present in two typical forms: First as a rod shaped bacillary organism, about two microns long and two tenths to five tenths thick. These are usually slightly curved, although never S shaped, may lie in short chains, often are found in branching forms, or in Y and V shapes, but never are crossed. When stained they are intensely dyed, and in some of the rods there may be a deep red granule, probably of chromatin, while the rest of the rod is bluish. Some rods have these granules at both ends. The second form is that of a small rounded body, about one micron or less in diameter; it is usually oval or pear shaped, and also has contained granules like those in the rods. In both forms in fresh blood on a warmed stage there is some independent slow motility, which is not a pedesis, but a gradual progression in the cells. These bodies are always present within the red cells, and are often very hard to see in the fresh blood.

This organism has not been successfully cultivated by any means yet tried, and it has not been possible to transmit the disease to experimental animals. The organism is not a bacterium, but a true parasite of the red cells, of the type of *Protista*, allied probably to *Grahamella*. It has been named Bartonia bacilliformis, and is probably the same as the organism described by Barton as the cause of Oroya fever and Verruga peruviana. It, however, is not the causative agent of the latter disease.

Aside from the anemia, which has been mentioned as a marked phenomenon of the disease, the pathology of Oroya fever shows characteristic lesions in the liver, spleen, and bone marrow. In the liver there are found areas of degeneration about the hepatic veins; that is of the central type. In these areas of necrosis there is a yellow or yellowish brown pigment which is neither melanin nor an iron compound. The spleen is enlarged, shows multiple infarctions and areas of necrosis in the pulp, but not in the splenic nodules. The same type of pigment is found in these necrotic areas as was found in those of the liver. The bone marrow shows proliferation, necrosis, and marked phagocytosis by large endothelial cells. The hepatic and splenic lesions are probably due to the action of some toxin liberated by the parasite.

The characteristics of Verruga peruviana are the several types of eruption and the joint pains, together with the mild fever. The causative agent has never been seen and has not been cultivated, unless, possibly, some of our recent trials have been successful, for in these we have occasionally obtained a clouding of the medium and an accumulation of a precipitate on the sides of the tubes, when the nodules have been planted by a modified Noguchi method. It is possible, however, to cause intratesticular and intraperitoneal infection of animals such as the rabbit and dog by direct inoculation of fluid obtained from the ground nodules of man. It is further possible to cause a typical lesion in the monkey at the site of inoculation, by infecting abraded areas of the eyebrows. The monkey apparently has considerable resistance to the disease, for it has never been observed to become generalized in that animal. The disease may be transmitted from one monkey to another, and it has been kept going in some thirty-five monkeys up to the present time. Filtration of the ground and macerated nodules from man, and injection of the filtrate do not lead to infection, though inoculation of the residue is successful. It is probable that the virus is too large to pass the filter, and it does not seem to produce a toxin.

Many observers have described the human lesions of verruga, the typical feature of which is, briefly, the formation of new bloodvessels in edematous tissue in the early stages. These vessels have more than one layer of endothelial cells, and the outer layers of these show marked proliferation, leading to the formation of nodules of angioblasts which are characteristic of the disease. In the later stages these nodules are invaded by fibroblasts and collagen.

Experiments conducted on the monkey have shown that the cutaneous inoculation of material from the nodules leads to the production of an immunity such that these animals cannot subsequently be infected. In one case we have observed a similar result in man. It is hoped that it may be possible to make use of these observations in the elaboration of a means of vaccination of man by which an artificial immunity may be produced, and experiments are now under way to determine the mode of procedure. Possibly the virus may be sufficiently attenuated by a few passages through the rabbit's testicle to be available for human vaccination.

Both Verruga peruviana and Oroya fever occur in the same regions, and malaria is also prevalent, hence efforts to determine the nature of either of the first mentioned diseases have been fraught with difficulty and have led to confusion. This is probably one of the chief reasons why the earlier investigations did not lead to definite results. It is possible, however, to find persons who are infected with either Oroya fever or Verruga peruviana alone, and in these there is no possibility of confusion arising from the symptoms, the blood or inoculation tests, or the post mortem findings. The two diseases are absolutely separate and distinct entities, as our investigations have established. Efforts are being made to discover the nature of the virus of verruga, but these have been fruitless up to the present time.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXLIII.—How do you treat gallstone colic? (Closed.)

CXLIV.—How do you treat diphtheria? (Answers due not later than March 16, 1914.)

CXLV.—How do you treat alcoholic cirrhosis of the liver? (Answers due not later than April 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The Prize of $25 for the best essay submitted in answer to Question CXLII was awarded to Dr. E. S. McIlvain, of Nashville, Tenn., whose article appeared on page 484.

PRIZE QUESTION NO. CXLII.

THE TREATMENT OF CONSTIPATION.

(Continued from page 487.)

Dr. William Brady, of Elmira, N. Y., writes entertainingly as follows:

Excluding organic conditions of which inadequate stools may be a symptom, such as lead poisoning, anal fissure, hemorrhoids, rectal stricture, chronic appendicitis, and hurry to catch the 8:38 train, constipation is usually dependent on dietetic errors, habit, or neglect of the normal impulse for evacuation.

The latter two factors are concerned with cases in which the rectum is found loaded with fecal masses. When the rectum is empty, as it normally should be, constipation probably depends upon a too concentrated diet.

The desire being to restore normal function, rather than merely to afford temporary relief for stasis, we must try to avoid the use of drugs, enemas, or suppositories. Although certain vegetable cathartics are called "tonics to the bowel muscle," it seems evident in practice that the more frequently a patient resorts to artificial spurs for defecation, the greater will be the ultimate demand of the innervation of the bowel for such stimulation.

However, if medicinal aids are imperative in a given case, we should exercise judgment in the selection and combination of the ingredients of the prescription, and not supinely dispense somebody's cut and dried formula just because it is an old standby. Some of the sure fire physics, both official and proprietary, are pretty nearly as unsatisfactory as a physic can be. For instance, why in the name of reason should belladonna ever be incorporated with aloes or cascara or any other slowly acting cathartic? It will not prevent griping, for by the time the gripe begins, the antispasmodic action of the belladonna will have been exhausted —the atropine will have been absorbed and eliminated from the body. Or why mix a four hour cathartic with a ten hour purge—such as the illustrious C. C. Pill of our staid old Pharmacopeia—unless to keep the patient uncomfortable all night long? And incidentally why should an aperient require any pepper?

General instructions for the patient. Four pints of water daily, between meals or with meals as may be preferred. Unboiled tea or coffee in moderation; well made coffee, far from being binding, is an effective laxative for many individuals. A fruit breakfast, or at least fresh fruit before cereal every morning; fruits with skin or seeds are best. Whole wheat bread and corn cakes. Bulky vegetables, green garden truck especially. As for oils and fats, these are of doubtful value unless the appetite calls for them. Some patients find popcorn a reliable regulator.

Avoid nothing but worry; constipation alone never makes any one seriously ill. If a day slips by without a movement, be of good cheer, for the morrow cometh. DuBois's psychotherapy is no sort of business for the family doctor to fool with, though a grain of logic and a pinch of persuasion are sometimes as useful as a colicky little liver pill. There is no question that individual habit is as readily formed for as against regularity in defecation. A regular effort at the most suitable time of day; patience without straining at stool; no light reading to distract attention; a pipe, perhaps, will serve to make the time and the stool pass more quickly.

The "setting up drill" and daily exercise directed toward toning the recti should be advised. Automassage in the course of the colon; sometimes an abdominal supporter for ptosis; and daily outdoor walks are all natural aids. The squatting posture in defecation is worth a trial in certain cases.

He who can control chronic constipation without the treacherous help of cathartics makes a "booster" of his patient.

Personal preferences for medicinal agents vary greatly. I find phenolphthalein in one grain tablets having a cocoa sugar base, satisfactory for many individuals, provided they masticate the insoluble phenolphthalein. It never gripes at any rate.

In families where one is not particularly anxious for a "return order," and yet good will is to be fostered, a useful recipe to suggest is a mixture of figs and senna leaves in equal quantities, well chopped up together, and kept in the family jar. Whenever a "liver" needs stirring up any member of the household can dip into the jar and have a "chaw"—in the morning rather than the evening, for senna acts in about four hours. This secret may be no secret to many readers, but it is worth knowing. It has helped me "put the skids under" many a nice little family trade in "Indian Herbs" or "Native Pills" or "Old Doctor Schneider's Liver, Stomach, and Bowel Beans." And senna can do little injury compared with the habit forming ingredients of most proprietary cathartics.

Dr. J. F. Elder, of Youngstown, Ohio, states:

We will divide our treatment for chronic constipation under three heads—dietetic, medicinal, and mechanical. In outlining these treatments we are taking the average case of habitual constipation,

without complications which would require special treatment.

The treatment by diet is based on the observation of certain foods; certain combinations of foods have a stimulating effect on the intestinal peristalsis, while others have a constipating effect. To the former class vegetables and fruits belong; of the latter are the albuminous foods. Those foods which leave little residue after digestion, such as meat, eggs, spaghetti, cheese, and cocoa, should be partially or wholly excluded. Others of astringent properties, such as tea, red wines, and blackberries, should be eliminated from the diet. Foods which favor catharsis may do so as a result of a laxative principle or simply because of the bulk of their indigestible residue (chiefly cellulose). Those with a laxative effect are most of the fruits, especially oranges, grapefruit, apples, prunes, watermelon, grapes, peaches; some of the vegetables, such as tomatoes, cucumbers, potatoes, carrots, beets, onions, and spinach. Other foodstuffs, such as honey, buttermilk, syrup, and cider, are decidedly laxative. The foods with a large residue are the coarser grains and vegetables, such as rye, corn, oatmeal, cabbage, turnips, string beans, oyster plant, squash, kale, etc. Plenty of the oils and fats, such as butter, suet, olive oil and cream should be used. Soft water should be used plentifully between meals. A good daily menu is as follows: On arising a glass of cool water; breakfast, a porridge of oatmeal or crushed whole wheat, graham bread, with raw fruit, such as oranges or grapefruit; during the forenoon a glass of buttermilk, cider, or one day old kefir; lunch, two vegetables, coarse bread and butter, cooked fruit, such as prunes; dinner, fish or sea food, a small portion of meat, such as roast pork or lamb, two vegetables, coarse bread and butter, salad with plenty of oil, with a dessert of fruit, either cooked or raw, and nuts. In the afternoon and at bedtime repeat the forenoon procedure. This routine may be varied according to the whims and tastes of the patient. In a hyperacid stomach this diet may cause some distress at first, but this is usually overcome easily by giving a mixture of calcined magnesia and bicarbonate of soda an hour after eating Parched bran is very useful and may be given either mixed with breakfast foods or in the prepared bran cakes. Medicinal treatment may be varied, but I consider the single drug *par excellence* to be cascara sagrada, in the form of the bitter fluid extract, to which may be added small doses of nux vomica, this to be given three times daily in small decreasing doses. Rhubarb, aloes, senna, and phenolphthalein are all useful. Enemas of either olive oil or liquid petrolatum, four to eight ounces on retiring, are good. These oils may also be used by mouth, thus increasing lubrication and fatty food intake. Flaxseed tea is a good household remedy. Agaragar is used extensively by some, with good results, and may be used either by itself or in combination with cascara, in doses of one fourth to one half ounce, twice a day. It resists the action of intestinal bacteria and enzymes and adds to the bulk of the feces. The extract of the pituitary body is recommended lately for the atonic form, but I have not tried it; from its action on muscular tissue, it looks good.

In the mechanical treatment we may mention massage, electricity, and the different exercises, but they should be left to those skilled in their use. For the average general practitioner, ordinary outdoor exercises with lots of fresh air meet all requirements generally. Obstipation is purely a surgical condition and should be left to the surgeon with his various operations. We have not touched upon the treatment of the spastic constipation, as the treatment is entirely different and we should have to use too much space. To sum up, the treatment of chronic constipation is a suitable diet, regular hours for eating, rest and defecation, proper mastication, plenty of water and outdoor exercise, with the assistance of a properly prescribed medicinal aid, all of which should be strenuously but tactfully enforced by the physician.

Dr. Lyndon M. Hill, of Atlanta, Ga., remarks:

The patient should be informed that it is important to give close attention to the diet. Have the patient eat plenty of vegetables, fruits, butter, and figs, and such foods as leave behind undigested residue; and drink a considerable quantity of mineral waters daily. Muscular exercise, outdoor exercises, and baths, considering the surrounding conditions, should be prescribed for patients who are accustomed to a sedentary life. Systematic regularity as to time and frequency and sufficiency of movements of the bowels should be enjoined upon and practised by the patient.

From a remedial viewpoint, the outline of methods offered for the cure of chronic constipation number legion. Combine belladonna or strychnine with the purgative drugs. In addition to the purgatives, have the patient take an enema occasionally to stimulate the peristaltic action of the intestines. But the effect of a continual or too frequent use of the enemata is injurious rather than helpful.

The following prescriptions are suggested:

℞ Olei olivæ, ... ℥iii.
Syrupi limonis, q. s. . . . . ℥iv.
M. Sig.: Two teaspoonfuls morning and evening.

℞ Strychninæ sulphatis, ... gr. ss;
Extracti belladonnæ . . . . . gr. v;
Extracti nucis vomicæ . . . . . gr. iii;
Extracti Rhamni purshianæ. . . . . gr. xxx.
M. et ft. caps. No. xvi.
Sig.: One capsule night and morning.

In case of an anemic patient, supply iron to the latter prescription.

For infants and children:

℞ Tincturæ belladonnæ, ... ℥ii;
Extracti Rhamni purshianæ. . . . . ℥ss;
Syrupi aurantii, q. . . . . ℥ii.
M. Sig.: Teaspoonful every two hours until the bowels move.

Good results are sometimes obtained by using mineral oil in injection for enemata. I feel that this mode of treatment will bring satisfaction to the physician and great personal relief to the patient.

Dr. L. K. Hirshberg, of Baltimore, writes:

Swinish gluttony never looks to heaven amidst its gorgeous feast, says the seer, but with besotted base ingratitude crams and blasphemes his feeder. Constipation is such a fat paunched, pipe clogging, inconsiderate malady.

Fairly to meet constipation is strictly a matter of

restoring, renovating, rejuvenating, tempering, and repairing the bodily habits and health. Constipation as a chronic trouble is undoubtedly less common since the introduction, a score of years or so ago, of the sanitary, comfortable, indoor toilets. In former days the cold, dirty, outdoor closets were responsible for inattention and suppression of the alimentary toilet. Moreover, mothers these days begin with infants three months old. They are placed at a regular, routine morning hour upon a little chair and soon establish the correct habit which becomes lifelong in its firmness.

It is, however, never too late to start these proper habits of evacuation. Men and women fifty years of age can, after years and years of chronic, intractable constipation, be trained to have a stool movement each morning after breakfast. If all such sources as defective toilet habits, failure to drink a liberal amount of water and harmless fluids each day, absence of certain tissue juices, or pathological and mechanical interferences have been eliminated, constipation may be treated successfully in the following ways:

It is important to bear well in mind the fact that many habitually prescribed and indeed at times useful purgatives, have certain limitations and injurious properties. Castor oil is not only incompatible and indirectly poisonous when given after male fern and other tapeworm remedies, but, given daily, often sets up chronic constipation. In fact, one of the virtues of castor oil as an eliminant is its astringent and constipating properties after it has acted.

Such popular medical purgatives as magnesium sulphate, citrate of magnesia, and the cluster of saline purgatives now the medical vogue, both in waters and as salty mixtures, have their virtues as measures to relieve constipation, but they are in some respects vicious. The frequent use of saline purges, not only exhausts to excess the tissue fluids of their victims and hence depletes them of their opsonins, but directly causes the mucosa of the bowel to take on a chronic turgidity and flabbiness.

Epsom salts, a habitually prescribed saline for new mothers, is perhaps as responsible as many other wrongly blamed things for dry breasts and the absence of human milk for infants. Many a bottle fed baby owes its precariously prepared pabulum to doses of such salts given daily to the mother. The magnesium ion in many of these salines is also somewhat toxic to the heart muscle and other tissues. This is not so worrisome a matter in the case of milk of magnesia, because the relative amount of the ions is decidedly less.

Milk of magnesia, partly because of its osmotic power, partly because it is a mild alkali, and partly because of its ability to saponify fats and oils, is usually an excellent antidote to constipation both in infants and adults. The more vigorous chemical agents, such as calomel, aloes, podophyllin, gamboge, senna, mercury, and the whole gamut of well known and here needlessly mentioned purgatives are to be used sparingly, rarely, and upon special occasions. It is advisable rather to depend upon other measures for relief.

Exercises, gymnastics, massage, electricity, iron ball rolling, crawling, dancing, and all the forms of muscle exertion play a bit of a part in alleviating the constipation, but none of these is sufficient by itself as a "cure." Milk, which increases the constipation of some persons, is an invaluable "cure" as long as it is taken once or twice a day by others. Buttermilk and sour milks of various breeds of bacilli are often laxative. There is no one or even several things which can be used as a "sure laxative" upon all individuals. Each one must be studied for himself alone. Fruit juice, such as orange and lemon juice, often helps infants as well as adults.

Plain emulsions and emollient oil, such as cotton seed, olive, sesame, cocoanut, and codliver oil—even petroleum oil—are useful in removing the bugbear of constipation. Bran biscuits and potato flour, oatmeal, and apple peelings, in short any inert, mechanical irritant, such as these taken with meals, will stimulate the sluggish gut, the unsecreting liver, and the other lazy tissues.

Prunes, figs, dates, peaches, grapes, apples, and other fruits, for some sufferers stewed, for others fresh, are aids to evacuation. Thus the various types of anticonstipation measures may be divided into natural, dietetic, habit inducing, mechanical, physical (indirectly chemical and mechanical), electrical, emollient, chemical, bacterial, irritant, and gravitational or by bulk.

Finally, it is advisable to apply all means in the morning, before breakfast, when the oxidizing powers of the tissues are fresh; when there is an absence of fatigue; when there is the after breakfast toilet effort to help counteract the constipation. This, with fresh air, cheerful spirits, and normal health in the other tissues, will permit enemas and other artificial maneuvres to be dispensed with entirely.

Dr. William C. Thro, of New York, points out that—

In the treatment of chronic constipation it is necessary to ascertain, first, the cause of the trouble. This may lie in the intestinal tract, requiring surgical interference, or it may be found that some organ far from the intestines is at fault. But most of the cases arise from errors in diet, bad habits, or nonconformity to hygienic rules. It is this type that is to receive consideration in this paper.

Chronic constipation can many times be traced to the simple neglect of the calls of Nature. In the hurry to get to school, to business, or to engage in some pursuit this important function is postponed, and then when a rest period comes the desire has passed away. Victims of chronic constipation should make it their duty to be regular and never neglect the warnings of Nature.

The laborer who bends over and who exercises all the muscles of the body, and who eats his fill of cabbage and coarse vegetables, is not troubled with constipation. Exercise then is useful, such as walking, swimming, golf, riding, and if these cannot be indulged in, there are regular set exercises that may be performed in the leisure moments. Among these are bending over from the hips and touching the floor with the finger tips; lying on the back and flexing the legs at the hips; or keeping the legs down and raising the body in a position at right angles to them.

Massage of the abdomen, beginning with the region of the appendix and following the course of

the colon up, across, and down to the region of the sigmoid, has cured many a stubborn case.

Above all, the diet should not be neglected. Such vegetables as cabbage, raw, and sauerkraut, carrots, turnips, string beans, spinach, and celery fill the intestines with nonabsorbed residue and so stimulate it to renewed activity. Whole wheat bread or graham, a form of the whole wheat which can be most readily procured, is valuable. Oatmeal is better than most of the other cereals Potatoes always, and milk usually, produce constipation.

Of the fluids the best aperient is plain water a glassful or two before breakfast. Coffee acts as a laxative with many, while tea has the opposite effect. Among the fruits there may be mentioned apples, raw or baked, bananas, dates, figs, and the plebeian prune. An apple, eaten before retiring, leaves a far better taste in the mouth than a glass of milk or a piece of bread and butter, and with many takes the place of a cathartic pill. Besides, the apple juice is beneficial to the teeth.

Buttermilk or the artificially soured milks are excellent and with many, Bacillus bulgaricus tablets, or the culture which comes in vials, keep the bowels in normal condition. As a general rule, too much proteid is eaten, with the result that a condition of proteid putrefaction is set up in the intestine and the taking of these lactic acid producing bacilli produces a change in the bacterial flora of the intestinal tract.

We all say, "do not use drugs," but in the old obstinate cases it is necessary to use these aids as preliminaries to the previously mentioned regimen. Of the drugs, cascara and the saline cathartics are the safest and best. A teaspoonful of powdered agaragar mixed with oatmeal in the morning and with a mashed vegetable in the evening meal, has produced eminently satisfactory results in a large number of cases.

The treatment of constipation in small children is one of the most difficult problems with which the practitioner has to deal. In this case the establishment of regular habits is of the greatest importance. By the use of the juices of fruits, olive oil, and variable amounts of cream, in those children that are artificially fed, satisfactory results can usually be obtained. In breastfed children the cause of the trouble may be found in the milk of the mother.

To summarize then, regularity, exercise, massage, coarse vegetables, fruits, and water form a combination that should relieve the great majority of the cases of chronic constipation.

(To be concluded.)

Therapeutic Notes.

Epinephrine in the Prophylaxis of Salvarsan Untoward Effects.—Galliot, in *Paris médical* for January 24, 1914, points out that the "nitritoid" manifestations—facial congestion, tingling in the throat, nausea, and at times even vomiting—which not infrequently appear immediately after an intravenous injection of salvarsan or neosalvarsan in persons with an idiosyncrasy, can be effectually prevented by previous administration of epinephrine. Milian, who first called attention to the utility of this prophylactic measure, injects one mgm. (1/64 grain) of epinephrine under the skin. Galliot has found it equally effectual, however, to give 15 to 20 drops of the one in 1,000 solution by mouth, diluted in a little water, ten to fifteen minutes before the salvarsan injection. In two patients he refers to who had always exhibited the "nitritoid" phenomena after several previous injections of 0.3 to 0.45 gram of neosalvarsan, the epinephrine used before subsequent administrations of the arsenical drug prevented their appearance entirely, and the dosage of neosalvarsan was raised to 0.6 gram without the slightest untoward manifestation following the injections.

Treatment of Tinea imbricata.—Aldo Castellani, in the *British Journal of Dermatology* for December, 1913, reports the results of a detailed study of the efficacy of various forms of treatment in tinea imbricata, a group of tropical dermatomycoses due to fungi of the genus Endodermyphyton and characterized clinically by extensive scaly patches. The scales are large, tissue paperlike, firmly adherent, and arranged in concentric rings or parallel lines. The disease is common in some districts of the Philippine Islands, and in certain other Pacific islands one third to one half the population is affected.

Castellani compared the value of different ointments, etc., by applying them simultaneously to symmetrical parts of the body. Calomel and other mercurials, thymol, betanaphthol, phenol, sulphur, turpentine, salicylic acid, and methyl salicylate all proved nearly or quite useless. Neither resorcinol nor compound tincture of benzoin, used alone, had much effect, but when these two agents were combined the results were so good as to lead the author to adopt the following formula for routine treatment:

℞ Resorcinolis, ...3i-ii (4-8 grams);
Tincturæ benzoini compositæ, ...℥i (30 grams).
Solve.

This is applied freely once or twice daily to the affected regions. Where the entire skin surface is involved, the two halves of the body are painted on alternate days. The treatment must be continued for several weeks. Once or twice a week the patient is given a very hot bath, and may be scrubbed with sand soap. Symptoms resulting from absorption of the resorcinol are rare, but one should proceed with care at first, as it is well known that some individuals possess an idiosyncrasy toward this drug.

A 40 per cent. solution of formaldehyde, applied with care, exerts a very good effect on localized patches. Only a small portion of the eruption should be treated at a time. It often causes pain and some degree of inflammation, which may be relieved by applications of ice water. A 5 to 10 per cent. chrysarobin ointment in repeated applications often induces strikingly rapid improvement in cases not of long standing. The eruption tends soon to recur, however. The last statement applies also to the use of the British iodine tincture (2.5 per cent.) and the liniment of iodine (12 per cent.).

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EDITORS
CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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A LOW ATTACK ON THE PROFESSION.

During the past few months, charges at once outrageous, nasty, and silly have been made and printed in certain newspapers that children treated at city hospitals and in the hospitals of the department of health have been experimented on by certain well known bacteriologists and so infected with "loathsome diseases." The average reader of these accusations would conclude that, in the name of science, children had been inoculated with syphilis and gonorrhea. The commissioner of health made a careful investigation of the charges, despite their absurd nature, and as regards syphilis, replied as follows: "Two physicians, representing this department, visited forty families named in the list. Of this number, fifteen were not found at the given addresses. Interviews were obtained, with twenty-five families in which there were thirty-four children. Among these, not a single case of syphilis or of suspected syphilis was found. There was no evidence of the inoculation of any of these children with serum or vaccine."

The "gonorrhea" turned out to be the common and intractable vaginitis of children, which has its source most probably in dirty towels and bedclothes and is almost as universal among certain classes of the population as a running nose.

Some priggish custom, whether it took origin in the postoffice, or in the editorial rooms of the newspapers, prevents publication of any fairly understandable explanation, for these pure minded journals must not publish such horrid words as syphilis and gonorrhea, and without these words explanation would be difficult. Besides, perhaps their readers might not like to know that their little girls have a nasty disease due to parental carelessness and lack of cleanliness, and not to witchcraft or the work of some wicked doctor. We do not believe the charges were fair news or square news; and if the reporters had sufficiently infantile minds to believe them, the editors, being older, might have undertaken a little investigation, which, as is proved by our citation from Commissioner Goldwater's answer, would have quickly convinced them of their absolute lack of foundation. As it is, the foul calumny has been read and believed by ignorant thousands, while the convincing reply is confined to the comparatively few readers of the bulletins of the department of health.

THE TREATMENT OF BURNS.

A principle of considerable importance in the management of burns, and one which is too frequently overlooked, is noninterference with the normal processes of superficial epidermization. Granting the advisability of preventing, in so far as is possible, the pullulation of microorganisms over the involved surface, antiseptic applications should be of neither such nature or strength as to retard healing. The good results obtained by Sneve's "dry, open air treatment" afford evidence of the validity of this principle, dryness of the open surface here being availed of as a restraining influence on bacterial growth, while exerting little or no unfavorable effect on the reparative processes, the skin itself being normally exposed to the dry air. As summarized by W. A. Jack, Jr. (*Washington Medical Annals*, May, 1912), the Sneve treatment consists in preliminary cleansing of the burned area with soap and water and gasoline (an anesthetic being administered if necessary), followed by a dusting with stearate of zinc powder, just sufficient to form a thin coating. Morphine is given to relieve pain and minimize shock. Once daily all heavy crusts are removed, the exudate is wiped off with dry sponges, and a light coating of powder again dusted on. Throughout the treatment the burn is kept entirely exposed, without dressing. Healing is rapid, little scarring results, and where the destruction of skin has been extensive, an excellent firm surface for the placing of grafts results. Mumford (*Practice of Surgery*) advises frequent gentle

washing of burns with warm boric acid or normal salt solution, followed by dressing with boric acid ointment; but where granulation is persistent and healing slow, he strongly recommends exposure of the wound, properly protected from dust and insects, to the open air for many hours each day.

A second factor tending to delay healing of a burn is the direct application of gauze to the involved area. Subsequent adhesion of the gauze results, not only in an interruption of the process of repair, but also in unnecessary pain and drain of nervous energy each time the dressing is removed. In some instances, even, where the burn is extensive, a by no means inconsequential loss of blood may occur from repeated disruption of the tissues at these periods. The formation of thick, contractile scar tissue and probably subsequent keloid transformation are also favored. Oily preparations, especially the old favorite carron oil, have been used to prevent adhesion, but these are apt to hinder absorption of pus by the dressings, and may even, as pointed out by G. Küss (*Paris médical*, February 21, 1914), thereby cause fever (39.5° to 40° C.) and anorexia, which will promptly disappear when the liniment is removed. On the whole, one of the best procedures seems to be to interpose a layer of nonadhering and supple material between the wound and gauze dressing, as advised by Quénu. After a preliminary cleansing of the burn by squeezing out at some distance above it cotton pledgets saturated with tepid one in 10,000 or 12,000 mercury bichloride solution, this surgeon covers the area with a piece of silk protective cut so as to overlap by two centimetres all around, and perforated with five millimetre openings not over ten to fifteen millimetres apart. Before application the silk protective is sterilized by boiling and moistened with normal saline solution. Over the protective is placed sterile gauze, previously moistened with the same solution, but then squeezed out thoroughly, damp gauze absorbing the wound secretions much better than dry. Finally, a covering of cotton and a light supporting bandage, preferably elastic, are applied. Dressings are continued in exactly the same way, but with gradual reduction in size, until the wound is almost entirely covered, when exposure of the remaining open area directly to the air for an hour daily will be found to accelerate the final completion of repair. Comparison of this treatment with one consisting of the application of a highly recommended topical agent in symmetrical burns on the same patient showed an advantage of a number of days in favor of the former as regards rapidity of healing. Pain upon renewal of dressings and resorption of toxic material are also entirely obviated, according to Kuss, by this procedure.

THE RELATIONSHIP BETWEEN ORAL SEPSIS AND INTESTINAL STASIS.

That there is a close relationship between oral sepsis and alimentary toxemia, brought about, as Sir Arbuthnot Lane and his followers assert, by intestinal stasis, is evident. Whether it is one of cause or effect, however, is as yet an open question. Lane asserts that pyorrhœa alveolaris is caused by intestinal stasis, and Dr. William Hunter attributes the condition to toxic agents engendered in the intestinal tract. According to the reasoning of Lane, intestinal stasis generally, although not always, accompanied by chronic constipation, after a time produces alimentary toxemia. In some persons the entire system becomes poisoned and functional complaints and organic diseases ensue of a more or less serious nature. The gums and oral cavity, providing fruitful soil and excellent opportunities for the spread of infection, are soon included in the infective process and a vicious circle is established. The mouth and gums continually irritated by the septic state of the gastrointestinal tract get worse day by day. Pus which has formed in the dental cavities is taken into the intestinal canal, and as a matter of course greatly aggravates the existing gastrointestinal condition already sufficiently serious; grave complications supervene unless prompt steps are taken for relief. There are two diseases which Lane and others especially regard as indirectly due to autointoxication, brought about by intestinal stasis. These are tuberculous infection, when not produced by direct inoculation, and rheumatoid arthritis. It is contended that autointoxication so devitalizes the system that it breaks down the body's powers of resistance to invading organisms, or perhaps, arguing on the ground that every person has the latent germs of tuberculosis in the system, the poisons generated in the first instance by intestinal stasis, combined with oral sepsis, stir these germs to activity after having reduced the body's powers of resistance to a minimum. It may be said that Dr. Eric Pritchard agrees with Lane in regard to the association between intestinal stasis and the tuberculous process in children and believes that stasis and intestinal toxemia are among the most unfavorable elements in tuberculosis in children. A close connection has been traced by many authorities between attacks of rheumatoid arthritis and intestinal stasis and oral sepsis. That the occurrence of both tuberculosis and rheumatoid arthritis, together with intestinal stasis and oral sepsis, is much more than a coincidence would seem to be proved by the fact that therapeutic or operative measures which have successfully relieved or cured intestinal stasis and oral sepsis have also relieved or cured joint tuberculosis

and rheumatoid arthritis, and even, it is said, pulmonary tuberculosis. One might possibly not go far wrong if one suggested that the gums and mouth are infected as a result of alimentary toxemia produced by intestinal stasis, and that in order to cure these conditions the trouble must be attacked at the root, the intestinal tract.

THE DORSAL POSITION AS A CAUSE OF UTERINE RETROVERSION.

There can be no question that formerly it was the universal practice in English speaking countries, inculcated by teachers of obstetrics and followed by the profession at large, to keep the parturient woman strictly in the dorsal decubitus for a number of days after birth of the child. Ramsbotham, in his *Principles and Practice of Obstetric Medicine and Surgery,* American edition, 1855, expresses the typical teaching of the past, and, while a change from one side of the bed to the other is advised, there is no hint that the patient ought to have from time to time a change in her own posture. Some teachers, like Lusk, appear to accept the supine position as a matter of course and, without referring to it particularly, simply warn against the upright and sitting postures at too early a period. There have been a few men, however, who long ago recognized the danger of retroversion as a result of continued lying on the back, and chief among them was that keen observer T. Gaillard Thomas, who, in discussing the causes of retroversion, in his *Diseases of Women,* second edition, 1869, pointed out how with the woman lying almost constantly on her back, the heavy fundus naturally tended to fall backward into the hollow of the sacrum. Many nurses insisted upon this position, and often for days refused the patient the privilege of lying upon the side.

The teaching of Thomas has not been without its effect, at least in this section of the country, and it can be authoritatively stated that at the Lying-in Hospital of the City of New York, the largest institution of the kind in America, it has long been the rule, unless the dorsal position is required by special conditions, to encourage the patient, after the first twenty-four hours, to change to the right and left side and even to the prone position. The same is the practice of leading obstetricians here, whatever may be that of other practitioners and of midwives. It appears, however, that this course is still not properly appreciated in many parts of the country, where the old idea of keeping a woman on her back yet prevails; and in a paper on the dorsal position as a cause of retroversion, W. C. Gayler, instructor in gynecology in the St. Louis School of Medicine, who speaks of the matter as an entirely new discovery, has recently made an urgent plea for the abandonment of this position (*Journal A. M. A.,* February 21st). He thinks that the dorsal position should be prohibited during the puerperium, unless there seems to be interference with the flow of the lochial discharge while the woman is in other positions.

THE UNRELIABILITY OF TESTIMONIALS.

It has been said—was it by Captain Marryatt?—that one could get exceedingly strong testimonials to the efficacy of brick dust as a medicine. The experience of the United States Post Office Department in its efforts to prevent the sale of fraudulent medicines shows that this statement is no exaggeration. It seems that there are more fraudulent cancer cures than almost any other kind of medical fraud. One of these on analysis proved to be composed of water with a very small quantity of quinine in solution. The makers announced that it contained a large amount of radium, so large an amount, in fact, as to be in excess of all the known quantities of radium in the United States; the mixture would have been worth several million dollars if the assertions of the manufacturers had been true. The manufacturers were denied the use of the mails by fraud order, but for more than eighteen months after this order was issued, the post office department was bombarded with letters from people who asserted that they had been benefited by this cure, and begged the department to vacate the fraud order, and allow them to obtain the only medicine that would save their lives. In view of such faith, it need not be a matter of surprise to physicians that the advocates of drugless therapy of all kinds have a large following.

A NEW BACILLUS?

We are introduced by a communication in an esteemed contemporary to a new organism said to confer agglutinative powers upon the tissues in which it is found; perhaps a culture would be useful to individuals lacking in the valuable gift of sticktoitiveness. Will the editor of the contemporary in question transfer to his excellent dictionary the astonishing name given to this apparently shy and recalcitrant newcomer into the bacteriological fold, viz., Bacillus adhæsioformis? If that means anything, it is that the organism is shaped like adhesion (!). Bacillus adhæsioformans was probably intended, although Bacillus tenax or glutinans would be more easily remembered.

AN INVALUABLE PUBLICATION.

Volume XVIII of the second series of the *Index-Catalogue* of the Library of the Surgeon General's Office, United States Army, comprising authors and subjects from Tetamore to Tzschirner, has been received; it includes, according to Lieutenant-Colonel C. C. McCulloch, Jr., of the medical corps, librarian of the office, 3,865 author titles, representing 4,117 volumes and 2,693 pamphlets, as well as 5,223 sub-

ject titles of separate books and pamphlets and 45,525 titles of articles in periodicals. To those who are not familiar with it, this gives but a faint idea of the labor and high intelligence involved in producing this superb and indispensable work.

IMPORTANT STEP BY THE DEPARTMENT OF HEALTH.

The Department of Health of the City of New York, realizing that the efficiency of its work depends largely on the cooperation of the medical profession, their intelligent grasp of public health problems, and a correct understanding of the attitude of the health authorities toward their solution, has decided to increase the edition of the *Weekly Bulletin* so that it can be sent regularly to every physician in this city and to a limited number of other persons interested in public health matters. The editor will appreciate criticisms and comment and will be glad to answer inquiries addressed to the Bureau of Public Health Education, Department of Health, 149 Centre Street, New York.

SEWAGE AND GARBAGE.

The rapidly increasing density of population in the United States makes the study of sewage and garbage disposal a matter of the first consequence. An interesting contribution to this study has been made by the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce, and has been issued in pamphlet form under the title of *Scientific Sewage and Garbage Disposal*. The pamphlet gives summaries of a series of consular reports concerning the practice followed in those European cities of 50,000 population and upward, which make some attempt at sewage purification; this excludes nearly all the municipalities of southern and eastern Europe. No reports were asked for from London, Berlin, and Paris. Physicians and sanitarians interested in the subject should apply to the United States Department of Commerce for this interesting and informing monograph.

Obituary.

THOMAS MORGAN ROTCH, A. B., M. D.,

of Boston.

Doctor Rotch died at his home in Boston on March 9th, aged sixty-five years. He was born in Philadelphia, December 9, 1849, and was educated at Harvard University, taking his degree in arts in 1870 and in medicine in 1874; he was subsequently house surgeon in the Massachusetts General Hospital, then passed two years in study in Europe. On his return he became successively lecturer, assistant professor, and professor of pediatrics, attaining the chair at Harvard in 1903. He was visiting physician to the Children's Hospital and to the Thomas Morgan Rotch, Jr., Memorial Hospital for Infants, Boston, at various times president of the American Pediatric Society and Suffolk District Medical Society, and councillor of the Massachusetts Medical Society. Doctor Rotch was the author of a work on pediatrics and one on the x ray as applied in diseases of children, beside being a frequent contributor to periodical literature, including the New York Medical Journal.

News Items.

Change of Address.—Dr. Harry G. Watson, from New York to suite 1018, Brockman Building, Los Angeles.

Smallpox in Philadelphia.—There have been reported eight cases of smallpox in Philadelphia since the beginning of winter, and more than 15,000 persons have been vaccinated by physicians of the bureau of health. There have been no deaths from the disease. The health authorities state that the number of cases is not unusually large, and that none has been severe.

Eugenic Marriages for New York.—Mr. Robert Lee Tudor, of New York, has introduced a bill into the Assembly of New York State providing that, before a marriage license may be issued, both parties to the application for the license must file certificates from physicians showing that they are not affected with any disease, physical or mental, which is contagious or likely to be hereditary.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, March 16th, Philadelphia Clinical Association, Medical Society of the Woman's Hospital, and the Episcopal Hospital Clinical Society; Tuesday, March 17th, West Branch of the County Society and the Philadelphia Laryngological Society; Wednesday, March 18th, Section in Otology and Laryngology of the College of Physicians; Thursday, March 19th, Section in Ophthalmology of the College of Physicians and the Northeast Branch of the County Society; Friday, March 20th, Southeast Branch of the County Society.

Appointments to Exempt Positions in the Department of Health.—To keep all appointments free from favoritism and to secure the best possible appointees, Commissioner Goldwater has decided that hereafter no appointments in the exempt class will be sanctioned unless and until such positions have been thoroughly advertised. The so called "exempt" positions embrace that of hospital intern, hospital physician, assistant attending physician to the tuberculosis clinics, and attending physician to the tuberculosis clinics. All vacancies in the exempt class occurring in any bureau of the Department of Health will be promptly announced hereafter in the *Weekly Bulletin*.

Medical Association of the Greater City of New York.—A stated meeting of this association will be held in Du Bois Hall, New York Academy of Medicine, on Monday evening, March 16th, at 8:30 o'clock. Dr. Julius London will present a new cystoscope and gastroscope, and papers will be read as follows: The Differential Value of Cyclic Indicanuria in Gastrointestinal Diseases, by Dr. Gustav Baar, of Portland, Ore.; Report of Fifty-six Cases of Lobar Pneumonia Treated by a Special Method, by Dr. Edward E. Cornwall, of Brooklyn; A New Operative Treatment for Spastic Paralysis, by Dr. William Sharpe. Doctor Cornwall's paper will be discussed by Dr. Frank S. Meara, Dr. Austin W. Hollis, and Dr. Walter L. Niles.

The Cost of Clean and Wholesome Food.—A conference on this subject will be held at the Academy of Medicine, Thursday, March 19, 1914, from 4 to 6 p. m., with the following program: 1. Mr. Paul E. Taylor, of the New York Milk Committee, Milk Supply; the Cost of Cleanliness and Safety; 2, Miss Laura A. Cauble, of the Bureau Food Supply, A. I. C. P., The Cost of Uncleanliness in Retail Food Stores; 3, Dr. Marian McMillan, of the New York City Department of Health, The Cost of Municipal Food Inspection; 4, Miss Pauline Goldmark, of the New York Consumers League, How to Get Clean Bakeries; 5, Mr. Alfred D. Woodruff, of the Bureau Food Supply, A. I. C. P., The Responsibility of the Consumer in Food Cost; 6, Mr. F. A. Horne, of the Merchants Refrigerating Company, The Relation of Storage to the Cost of Food. Haven Emerson, M. D., chairman, Committee on Public Health, Academy of Medicine.

Cholera in the Philippines.—Surgeon Heiser, of the United States Public Health Service, chief quarantine officer and director of health for the Philippine Islands, reports that during the three weeks ending January 24, 1914, there were 25 cases of cholera with 14 deaths reported in Manila. Cholera continues to make its appearance in widely separated sections of the islands and in persons who have apparently not come in contact with individuals suffering from cholera. Prompt measures have been taken in each instance and the disease has been eradicated

Annual Banquet of Philadelphia Alumni of the University of Pennsylvania.—Three hundred physicians attended the twenty-second banquet of the Philadelphia Alumni Society of the medical department of the University of Pennsylvania, held on Saturday evening, February 21st. At the business meeting which preceded the dinner, the following officers were elected: President, Dr. William A. Hughes; vice-presidents, Dr. Howard A. Sutton, Dr. Samuel M. Wilson, and Dr. William A. Guilfoyle; honorary vice-president, Dr. Edgar F. Smith, provost of the university; corresponding secretary, Dr. B. F. Stahl; recording secretary, Dr. William S. Wray; treasurer, Dr. Morris B. Miller; executive committee, Dr. Harvey E. Shock, Dr. H. B. Carpenter, Dr. C. P. Franklin, Dr. B. A. Thomas, and Dr. A. Bishop.

Mortality Statistics of New York.—During the week ending February 28, 1914, there were reported 1,812 deaths from all causes in the city of New York, corresponding to an annual death rate of 16.93 in a thousand of population, compared with a rate of 16.50 in the corresponding week in 1913.

During the week ending March 7th there were 1,957 deaths from all causes, with a death rate of 18.28 in a thousand of population, against 1,723 deaths and a death rate of 16.73 for the corresponding period in 1913. Measles and diphtheria showed a considerably increased mortality, but the most important factor in the increased mortality for the week was the increased number of deaths reported from influenza itself and the greatly increased mortality from chronic organic diseases, the termination of which was hastened by the presence of the influenza epidemic. Its effect was most marked in the increased mortality from chronic organic diseases of the heart, pulmonary tuberculosis, digestive diseases, and diseases of the nervous system.

Medical Society of the Missouri Valley.—The twenty-sixth semi-annual meeting of this society will be held in Lincoln, Neb., on Thursday and Friday, March 26th and 27th, under the presidency of Dr. Flavel B. Tiffany, of Kansas City. On Thursday evening Dr. Joseph Rilus Eastman, of Indianapolis, will deliver the address in surgery and Dr. J. M. Bell, of St. Joseph, the address in medicine. On Friday morning a clinical session will be held at the Orthopedic Hospital. The Committee of Arrangements is composed of Dr. A. I. McKinnon, Dr. R. B. Adams, and Dr. R. L. Smith. Other officers of the society are: First vice-president, Dr. Granville N. Ryan, of Des Moines; second vice-president, Dr. Austin McMichael, of Rockport, Mo.; treasurer, Dr. O. C. Gebhart, of St. Joseph; secretary, Dr. Charles Wood Fassett, of St. Joseph.

Personal.—The Cameron prize of the University of Edinburgh has been awarded to Professor Paul Ehrlich in recognition of his contributions to medical science, particularly the discovery of salvarsan.

Dr. J. W. Babcock, of Columbia, S. C., has resigned as superintendent of the South Carolina State Hospital for the Insane, after serving for twenty-five years.

Dr. Francis W. Peabody, resident physician at the Peter Bent Brigham Hospital, Boston, has been appointed by the Rockefeller Foundation secretary to the commission which is to go to China to study the system of medical education there. President Judson, of the University of Chicago, is chairman of the commission, which will leave for China on March 25th, to make its headquarters in Pekin.

Dr. James P. Simonds has resigned as professor of preventive medicine in the medical department of Texas State University, after two years' service, to take a similar position in the Northwestern University, Chicago. He will assume his new duties this month.

Dr. F. V. Meriwether and Dr. R. C. Williams, of Russell County, Alabama, have been appointed assistant State directors of the Rockefeller sanitary commission in Alabama, by Dr. W. W. Dinsmore, State director, and have been assigned to work in connection with the hookworm eradication campaign.

To License Midwives.—The Committee for the Prevention of Blindness has announced its intention of placing before the Public Health Council of the State proposals for the regulation, examination, and inspection of midwives. In the report that the committee has prepared for the council it is stated that the deaths of hundreds of babies and thousands of cases of blindness among babies are caused annually by the ignorance and carelessness of midwives. Statistics have been gathered showing that forty per cent. of all births in the State are attended by midwives and that 10 per cent. of the deaths of all children under one year occur during the first twenty-four hours after birth. At least one out of every twenty-two of these deaths, according to the figures, results from injuries received at birth. The report also points out that in England, following the adoption of the act for the regulation of midwives, the deaths of children immediately following birth decreased 30 per cent., and the deaths of mothers more than 20 per cent.

Resolutions on the Death of Dr. William Kelly Simpson.—Dr. William Kelly Simpson came into the New York Foundling Hospital in the days when Dr. Joseph O'Dwyer was perfecting intubation. He was, in fact, the first one to intubate an adult, at the request of Doctor O'Dwyer. For many years Doctor Simpson cheerfully responded to all calls from the hospital for the Sisters of Charity as well as the children. It is in grateful remembrance of these services that the Medical Board wishes to make this record.

While recognizing his well known skill and professional services, the medical board desires to make mention of his good comradeship, his cheery, joy bringing presence. It has been truly said that in his death the medical profession has lost something of cheerfulness in the daily toil of all those who knew him.

WHEREAS, The medical board of the New York Foundling Hospital has lost a much prized counsellor and friend in the death of Doctor Simpson; therefore be it

Resolved, The board herewith records its high appreciation of him as a consultant, of his untiring devotion to the hospital, and of his genial presence.

Resolved, That a copy of these resolutions be spread upon the minutes of the board, and that a copy be sent to each of the current weekly journals of medicine, and that a copy of the same be sent to the family.

W. P. NORTHRUP, *President*;
COLMAN W. CUTLER, *Secretary*.

The Late Dr. S. Weir Mitchell.—At a regular meeting of the New York Neurological Society held at the New York Academy of Medicine, March 3, 1914, the following memorial record on the life and character of Dr. S. Weir Mitchell, an honorary member of the society, was unanimously adopted by a rising vote:

The members of the New York Neurological Society desire to record their appreciation of the achievements and character of Dr. S. Weir Mitchell and to give expression to their sorrow at his death.

Doctor Mitchell was not only a pioneer in American neurology, but he was also one of the earliest and most important contributors to the science and art of neurology the world over. His work, enriched by contributory arts, continued without abatement of value until the time of his death. No American has done more to give to the science which this society represents a proper standing, or to keep it in its rank among the special departments of medicine.

We record our deep appreciation, and we who knew him our affectionate personal acknowledgment, of the endearing qualities of his character, his ready thoughtfulness, and wide and instant sympathy. He stood for what was best in medicine and in life. These things made him a perpetual object lesson and stimulant to ideals for all the followers of our craft.

A certain merit is reflected on neurology in the fact that Dr. S. Weir Mitchell, a neurologist, added high distinction to American letters as well as to American science, and showed to the medical profession and the world that a fine imagination and poetic vision may exist along with exact knowledge, imparting wisdom to it.

In the history of neurology the records will show, what we wish here to record, that Doctor Mitchell was a founder and builder of our science, an original contributor to our art, a worthy master of letters and poetic verse, of a character without reproach, greatly successful in all his lines, and, best of all, a man having very many friends who loved him.

C. E. ATWOOD, *Secretary*.

Pith of Progressive Literature.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

January 6, 1914.

Typhus exanthematicus and Roseola.—Eugen Fraenkel has found on examination of sections of skin removed from a patient affected with typhus exanthematicus what he considers characteristic pathologic changes. The lesion consists of circular or semicircular infiltrations of the smaller bloodvessels in the pars reticularis of the skin. The infiltrating cells consist of mononuclear elements with eosinophilic cytoplasm. Occasionally larger cells having the same characteristics are present. The walls of the bloodvessels where the infiltrations are thickest appear homogeneous. The endothelial cells are swollen; the intima is split. Where the endothelial cells are absent the lumen is filled with a finely granular homogeneous material. These changes were also present in another case examined. Specimens were incubated in glucose bouillon for twelve hours, then fixed, and stained with Pappenheim's panoptic method. These changes differ from periarteritis nodosa: in the latter, the coronary, renal, intestinal, pulmonary, and cerebral vessels are the chief places of predilection. The pathologic changes of the latter are chiefly hemorrhage and necrosis of the media, with thrombosis of the entire region. Here there does not seem to be infiltration of the wall of the vessel, but rather adventitial proliferation. In typhoid the pathology of the roseola is chiefly an affection of the papillæ of the skin, while in typhus it is an affection of the smaller bloodvessels.

Abderhalden's Dialysis Method.—A. Mayer reports his experiences with this method. The reaction was positive in several cases of questionable pregnancy, postabortive. In four per cent. of positive pregnancies that did not give this reaction, anemia and hyperemesis were complicating factors Serums from eclamptics did not react with their own placentas. Protective substances were found present in the mother's milk, as well as in the blood of the newborn infant. Fourteen negative reactions in pregnant women resulted positively when repeated with larger doses. In climacteric neurasthenia the serum reacts with ovary and can be used to differentiate it from an organic psychosis.

Quantitative Wassermann Reaction.—Fritz Lesser insists that the positive Wassermann reaction indicates the presence of spirochetes and that the reaction can be made to disappear gradually by appropriate treatment. To determine the effect of the treatment he uses a high dilution of serum to be tested, and determines in what dilution a positive reaction is present. If it is necessary to increase the concentration in order to obtain a positive reaction, he considers this a marked improvement. It also indicates the therapeutic value of the remedial agent employed. To determine whether spirochetes are resistant or not to the medicament, or where the inunction cure is employed, the quantitative reaction is of decided value. Where salvarsan is employed, its use may occasionally "provoke" a positive Wassermann reaction. Where other medication is employed the quantitative Wassermann should be determined after a fourteen day inunction cure, or after four injections of insoluble mercurial salts. The best method of determining the quantitative reaction is to employ ascending dilutions of the patient's serum.

Technic of the Pallidin Reaction.—E. Klausmer describes the technic employed in inoculating the skin with pallidin (lungs of a syphilitic fetus showing a pneumonia alba). In tertiary or congenital syphilis the area inoculated should show a distinct infiltration within twenty-four to forty-eight hours. Occasionally this infiltration is surrounded by an erythematous areola. In some cases showing a negative Wassermann reaction with latent syphilis the reaction becomes positive after the use of the cutaneous inoculation with pallidin. The pallidin reaction is negative in tabes, general paralysis, and in luetic affections of the aorta.

Clinical Studies with the Abderhalden Dialysis Method.—Hans Oeller and Richard Stephan conclude that to determine the possible organ specificity of a ferment, it is necessary to have as control several nonspecific organ substrates. It is also necessary to test the organ with active as well as inactivated serum. A suspicious serum should never be examined alone and should always be controlled by an absolutely positive and an absolutely negative serum. To obviate sources of error due to unreliable dialysers it is necessary always to repeat the test. If constant in both sets of dialysers, reaction is to be considered dependable. If a negative or a suspicious reaction is present, it is necessary to boil the dialysate again after the additional mixing with 0.2 c. c. of a one per cent. ninhydrin solution.

January 20, 1914.

Ray Therapy in Gynecology.—M. Henkel considers the following cases not amenable to radiotherapy, especially the Röntgen ray: 1. Acute hemorrhagic conditions threatening life; 2, tumor causing compression symptoms; 3, submucous myomas which bleed a great deal; 4, malignant degeneration; 5, myomas occurring at a comparatively early age; 6, all cases where the diagnosis is not clear. Rays should be applied with the greatest caution, if during treatment, such complications as intestinal disturbances, increase of hemorrhage, etc., set in. The chief disorders indicated are climacterium and hemorrhages of positively nonmalignant nature occurring in old women.

Combined Treatment of Carcinoma with Mesothorium, X Ray, and Intravenous Injections.—Gustav Klein sums up his results with this combined method of treatment, and suggests the following: One and three quarter days' radiation with mesothorium. Duration of treatment is from one to twelve hours, depending on location of the affection; 2, after this a pause is to be made, following which x ray treatment is instituted for a period of three to five successive days; fourteen days after the first mesothorium treatment the second mesothorium application is made; 3, intravenous injections follow regularly during treatment with mesothorium, and are occasionally given in the interim. Mesothorium applications consisted on an average of 1,000 to

4,000 milligram hours. Intravenous injections were limited chiefly to enzytol and radium barium selenate.

Cutaneous and Subcutaneous Connective Tissue as Plastic Material.—E. Rehn has used experimentally in dogs subcutaneous connective tissue taken from a flap of skin of the back, as a substitute for the tendo Achillis. By preliminary twisting with a silk thread, he says he has obviated the possibility of stretching. The tensile strength is increased and it can be made to serve as an excellent substitute for the fascial flaps formerly employed. He suggests that the epidermis and cutis be previously removed.

Etiology of Heine-Medin Disease (Acute Anterior Poliomyelitis).—Lust and Rosenberg have investigated thoroughly with regard to contact infection an epidemic of seventy-one cases occurring in the neighborhood of Heidelberg. In 39.4 per cent. they found no possible grounds for this assumption. The possibility of infection by means of domestic animals was next considered. In certain localities where disease was epidemic, chickens were found to be suffering from paralytic affections. Histologic changes showed hemorrhage in the central nervous system and peripheral nerves. The spinal cord was not affected. They were unable to demonstrate an infective causal agent for this disease, nor were they able to infect chickens with human virus or that derived from monkeys.

Healing of Skin Cancer with Salicylic Acid.—Weinbrenner professes to have cured skin carcinomas by application of powdered salicylic acid, covered with a zinc plaster cotton bandage of Beyersdorf. At the most dependent point he placed absorbent cotton for drainage, between the skin and plaster. At first the treatment consisted of daily dressing, changing bandage, and removal of the grayish white crust; later this was done every second day and then at more distant intervals.

Röntgen Picture and Operative Findings in Carcinomata of the Pylorus.—Hans Reichel emphasizes the value of the x ray in early diagnosis of carcinomas of the stomach, especially in view of the latency of these processes. In scirrhus cancer it is only extension to the esophagus that often calls attention to the condition. Three main diagnostic symptoms are circumscribed areas with absence of complete filling with bismuth, contraction processes, and disturbances of motility. He cites a number of cases in which one or more of these symptoms were present, and operation confirmed the previous diagnosis.

Journal of Surgery

Is Overproduction of Sugar Primary in Diabetes mellitus?—Fr. Rolly and H. David have attempted to prove on the ground of animal experimentation that the contention of Porges is not true. They have succeeded in showing a decided increase in the respiratory quotient, even after the liver had been removed. This, they observe, cannot be attributed to an increased combustion of sugar. Porges's contention that increase of the respiratory quotient is referable for the greater part to a combustion of carbohydrates, and is only partly due to acid intoxication, is denied by the authors. They assert that the maximum increase occurs only after several hours, Porges's observations being premature. By overdosing animals with strychnine, they have succeeded in making them glycogen free, and after removing the liver, have shown that there is a consequent increase in the respiratory quotient. In these animals, an increased carbohydrate combustion is entirely out of the question. From this they conclude that the primary factor in diabetes is insufficient utilization of carbohydrates. In severe diabetes, abnormal production of sugar, in addition to inability of the organism properly to decompose it, can be explained only as a secondary phenomenon attendant upon the carbohydrate hunger of body tissues.

Choledocotomy retroduodenalis or transduodenalis.—Franz Fink suggests that in cases of cholelithiasis where the stones become lodged in the common bile duct, it is advisable first to attempt to mobilize them manually and push them back of the retroduodenal portion of the duct. Here, by a small incision in the upper portion of the duct, the stones can be removed. If they are too firmly lodged, it is better to go in by the transduodenal route with splitting of the papilla of Vater, removal, and consequent suturing.

Benzine Poisoning and Animal Experimentation.—Rudolf Jaffé finds on experiment that benzine is excreted for the greater part through the lungs. If it is resorbed quickly, extensive pulmonary hemorrhages occur. It is only slowly absorbed from the stomach, however. There occur extensive necrotic and inflammatory processes in the lungs, even following chronic benzine poisoning. In man, pulmonary hemorrhages seem to be the only constant autopsy findings. In animals, inflammatory changes are rarely found in the stomach and intestines.

Secondary Tumors of the Pituitary and Diabetes insipidus.—M. Simmonds reports three cases of secondary metastases into the pituitary body with preceding intractable polyuria. He cites, in addition, two other cases, in one of which, despite extensive destruction of the neurohypophysis, there was no polyuria. He considers that in these cases polyuria is to be considered as a malfunction of the hypophysis, and suggests that in mamma carcinomas, it is advisable to watch the excretion of urine.

Animal Investigations with Tuberal.—Tuberal is supposed to be the bacteriolytic and immunizing substance of the tubercle bacillus. Experiments on animals seem to indicate that this substance possesses none of the curative properties ascribed to it.

Treatment of Hay Fever with Calcium Chloride.—Rudolf Hoffman denies the view of Emmerich and Loew that protracted use of calcium chloride will cure hay fever, for the patients are not free from attacks after the drug is withdrawn. It is doubtful if it can be given without injurious effects for long periods of time.

Narcophin in Labor.—H. Klaus asserts that the effective dose was one c. c. of a solution containing 0.03 of pure narcophin. Where several doses were employed, an interval of three hours was allowed to elapse between doses. The effect was quite

prompt, occurring after one quarter of an hour. Only in 3.3 per cent. of children born asphyxiated could narcophin be considered the direct cause. Asphyxia occurs more rarely than after pantopon. The afterpains are also decidedly influenced by narcophin, which can be administered in tablet form, each tablet containing 0.015 gram.

ZENTRALBLATT FUR CHIRURGIE.

January [illegible], 1914

Operation for the Closure of Artificial Anus.—Carl Bayer describes two cases in which he dissected up the mucous membrane for a short distance in both intestinal loops and sutured one to the other, thus rendering the tube of mucous membrane continuous without meddling with the other layers of intestine. The result in both cases was excellent.

Experimental Examinations of the Blood after Splenectomy on Account of Traumatic Rupture of the Spleen.—Kreuter tells the case of a boy fifteen years old, whose spleen was extirpated on account of rupture. The spleen was histologically normal. Two and a half weeks after the operation the blood showed a marked hypoglobulia, a consequence of the great loss of blood, and an enormous hyperleucocytosis, the specific consequence of the extirpation of the spleen. Six weeks after the loss of the organ, blood was almost completely regenerated. Experiments with adrenalin and pilocarpine showed that the reactions to these were similar in all respects to those seen in persons with healthy spleens.

ZENTRALBLATT FUR GYNAKOLOGIE.

January [illegible], 1914.

Abderhalden's Reaction in the Early Diagnosis of Pregnancy in Cows.—Behne, to rule out various confusing factors present when the Abderhalden reaction is tried with human beings, tried out the method on cows. Abderhalden's technic was closely observed; the serum from thirty-seven cows, twenty-four pregnant and thirteen nonpregnant, was employed. The author concluded that, as far as the early diagnosis of pregnancy in cows is concerned, this method is of no value.

Abderhalden's Reaction.—Akimoto, as a result of experiments with a small number of cases, believes that the reaction as a method for the diagnosis of pregnancy in women may be approved.

Treatment of Post Partum Hemorrhage by Intravenous Injections of Hypophyseal Extract.—Kreiss differentiates between atony and hypotony of the uterus, the latter being a condition in which the uterus can still react to stimulation. In such instances post partum hemorrhage has very largely lost its seriousness on account of the ready response to the intravenous injection of hypophyseal extract. Kreiss reports three cases in which the hemorrhage was controlled and a permanent contraction of the uterus obtained by this method. Attention is called to the technic employed. From 0.5 to one c. c. of hypophysin is used. Injection should be comparatively slow, not less than half a minute, otherwise the patient may collapse, with slow, shallow breathing and a small running pulse. This, however, does not appear to be serious, as the patient recovers in the course of a few seconds.

Danger of Tampons in Placenta prævia.—Reinhardt affirms that most clinicians now believe the use of tampons in the foregoing condition is of little value, and is even dangerous. Comparing 115 cases in which tampons were used with 160 in which they were not, he finds fifty-three per cent. of the former showed fever, and but thirty-four per cent. of the latter. There were also five deaths from puerperal fever in those tamponed against one death in those not so treated. Reinhardt agrees with Zweifel, who says that when tampons are used one must constantly be on the lookout for fever and must use increased care during the puerperium.

Eclampsia Following Total Extirpation of the Uterus.—Zweifel reports the case of a woman whose uterus was removed on account of rupture during the birth of her fourth child. Three and a half hours after operation, the first eclamptic seizure made its appearance. This was followed by a second, in the course of a few minutes, and a third about an hour later. Three days after the operation the patient slowly recovered from her coma, but had lost her power of speech; she could answer questions by nodding her head. At the end of thirty days the patient was able to speak quite well. As a result of the rupture and the operation a large amount of blood was lost, and the question arose whether the symptoms were due to eclampsia or to severe anemia. The author believes that the case was one of eclampsia.

LYON MÉDICAL.

February 1, 1914.

Use of the Heliothermometer.—R. Lépine calls attention to the advisability, in the practice of heliotherapy or sunlight treatment, of taking into account both the actinic activity of the sun's rays and the temperature of the air. Whereas ordinary forms of thermometer are useless in connection herewith, exhibiting great discrepancies in the temperature marked when placed in the sun, Vallot's heliothermometer, an instrument enclosed in a sphere of blackened brass, answers the purpose. Where the instrument records at least 35° C., heliotherapy may be practised with impunity; below this, precautions are necessary. Thus, even where the actinic effect is intense, exposure of the patient to air at the freezing point appears to be attended with risk.

[illegible] 15, 1914

Reeducation in Motor Aphasia.—J. Froment and O. Monod advocate what they term the psychophysiological method of speech reeducation as an alternative to the classic or pedagogic method, which attempts simply to reteach to the subject the motor acts of articulation in the same way as is done with young children and deaf mutes. The object in the new method is to restore the memory of sounds and the association between visual and auditory (word) impressions, beginning with individual syllables—some of which the patient can still articulate—and later building up polysyllabic words. The method is available, among other cases, in those where the ordinary procedure is hardly applicable because of weakened intellection and attention, or associated apraxia.

PRESSE MÉDICALE.

February 7, 1914.

Periodic Spasm of the Descending Colon in Children.—Hutinel reports a series of cases of this condition, which occurs especially in children, four to fifteen years of age, the offspring of neuropathic, arthritic, and frequently diabetic parents. The past history usually includes digestive disturbances more or less severe, particularly recurring attacks of colitis. Hepatic insufficiency is sometimes indicated by the symptoms. Constipation almost always precedes the attack of colonic spasm; appetite is lost, the tongue coated, and the breath fetid. Pain suddenly develops in the left flank, localized anteriorly, occasionally posteriorly and at the epigastrium. Palpation reveals the descending colon in spasm, the bowel at this level feeling like a rope or rubber tube; the splenic flexure and transverse colon are also at times in spasm, and between the points of tightest contraction, gurgling may be felt. Passing of the spasm is marked by a sudden cessation of the pain and free evacuation of feces, at first hard and of small diameter, later mucoid, and occasionally blood stained, and nearly always malodorous. Weight is rapidly lost during periods of spasm, but is soon regained, the child appearing healthy during the intervals. At times there is appendicular tenderness; the appendix may become diseased as a result of the functional colonic disturbance, and when once involved, tends to perpetuate the colonic trouble. The abdomen is often retracted during the attacks, and at times pyloric spasm coexists, as shown by bismuth meal and x ray examination. The periodicity of the spasmodic attacks is very noticeable, and the condition seems to be analogous to bronchial asthma and cyclic vomiting; in fact, spasmodic rhinitis and asthmatic attacks were observed sometimes as accompaniments of, or in alternation with the paroxysms. Treatment of the attack is effectual and consists in applying very hot compresses to the abdomen and giving cautiously small hot enemas. As a sedative, belladonna, with or without opium, may be used. Vichy water and hot beverages should alone be permitted, and at the close of the attack, castor oil in small doses or sodium sulphate given. The interval treatment consists of daily massage of the abdomen, application of large cold and moist compresses, rubbing of the whole body, gymnastic exercises, and the use of mild laxative drugs by mouth and rectum. The diet should be rich in carbohydrates.

Combined Induction of Abortion and Sterilization.—A. Sarkissiantz advocates induction of abortion and sterilization at one sitting in certain cases of pregnancy in subjects with tuberculosis, cardiac valvular disease, and rarely, nephritis or anemia. The combined operation was performed by him in thirty cases at some time during the first four and a half months of pregnancy, with uniformly satisfactory results. An injection of two c. c. of secacornin was first given, the cervix drawn down and dilated with Hegar bougies, the ovum removed with Winter's forceps, and the uterine cavity curetted and disinfected with tincture of iodine, introduced on gauze. The anterior wall of the vagina was then at once incised, the bladder displaced upward, the cul-de-sac incised transversely, the uterus drawn out as far as practicable, and the tubes severed between ligatures. The anterior uterine wall was finally fixed with two or three strands of catgut to the vaginal incision, and the latter closed. The operation is simple and easily borne by the patient, but is contraindicated where there is local sepsis.

Tuberculous Bacillemia.—A. Calmette reviews the work of various authors on the question of the presence of tubercle bacilli in the blood in tuberculosis, and reports the results of experiments conducted in his laboratory by Massol and Breton. The method used was direct transfusion of blood from tuberculous to normal guineapigs, and the results proved conclusively that even in mild tuberculous infection the blood almost always contains bacilli. Failure of investigators of this question in man to agree as to the constant presence of the bacilli in the blood seems due to the fact that not enough blood has been used. The guineapig experiments showed that, if tuberculization of the animal is to take place, at least thirty or forty tubercle bacilli of average virulence must be intravenously introduced. If the number is less, lymphatic lesions may be produced, but these remain benign for months and would ordinarily escape observation at post mortem examination. Ameuille and Kindberg, inoculating animals with fragments of kidney, skin, muscle, hypophysis, etc., apparently normal and secured under aseptic conditions from tuberculous subjects immediately after death, obtained fifty-seven per cent. of positive results, in spite of the fact that not a single bacillus could be detected in the tissues used. The infective power of the fragments, on account of the class of cases from which they had been obtained, must have been due to circulation of bacilli in the blood during life. On the whole, great caution is necessary in passing judgment upon negative results of inoculation experiments based on a small amount of blood from tuberculous subjects. Even at the beginning of tuberculous infection, bacillemia is far more frequent than has hitherto been believed.

BRITISH MEDICAL JOURNAL.

Appendicitis in Children.—H. M. W. Gray and Alexander Mitchell base their findings on a study of two hundred cases in children under thirteen years of age. Of this number seventy-four were chronic and recurrent, the remaining 126 being acute. Among the acute cases there were twenty-eight of the uncomplicated catarrhal type, and eighty-six gangrenous cases, of which forty-five had some degree of peritonitis. The acute cases gave a mortality of fifteen per cent., including one case which ended fatally under the anesthetic. From a detailed analysis of sixty acute cases, the records of which are full, they find: "The classical symptoms of abdominal pain and tenderness, and vomiting or sickness, accompanied by some elevation of the temperature and of the pulse rate, appear to have been present in practically all these cases; but frequently one of these symptoms predominated over the others." Except in a few cases of localized abscess, abdominal respiratory

movement was greatly diminished. Diarrhea was a prominent symptom in six cases, and four of these were fatal. In all six there was diffuse peritonitis. This type of case is likely to be misleading, for the distinct symptoms of appendicitis are apt to be overlooked and the case thought simple enteritis. Cases with early diarrhea seem to be virulent; the prognosis should be guarded. Pain and frequent micturition characterized four cases, and seems indicative of a localization of the process in the pelvis. A streptococcus or the colon bacillus, or more frequently both together, were found in the majority of cases. The authors' experience is opposed to the general, in that they find that the percentage of cases with diffuse peritonitis is much greater in children than in adults, and that there is gangrene and perforation in a very large proportion. It seems, also, that the omentum is likely to be very small and does not tend to limit the process of inflammation in the peritoneal cavity. While acute appendicitis is a most serious condition in a child, they find that every case which was operated in in the first two days of illness recovered.

Congenital Deformity of the Femur.—Conor Maguire reports the case of a full grown girl whose right leg reached only to the level of the left knee. Skiagrams show a perfectly developed extremity, except that the shaft of the femur is wholly wanting, the upper and lower epiphyses being directly united.

Chimney Sweep's Cancer.—D. A. Crow's patient, a man, fifty-seven years old, had a very slowly progressing epithelioma on the scrotum for five years before removal. He had an epitheliomatous wart removed from his hand several years before, and has had no recurrence. His skin presented areas of thinning, hyperemia, and scaly patches, as well as numerous warty thickenings. Crow suggests that in these cases a possible explanation for cancer may be found in the diminished nutrition of the skin and impaired oxidation. He recalls that cancer does not occur primarily in organs or tissues with abundant blood supply and efficient oxidation; that it is almost always found under circumstances which indicate an impairment of the oxygen supply to the cells. The family history of this patient is interesting. The father was a sweep and had cancer of the scrotum; two brothers who were sweeps had cancer of the cheek, a sister also had cancer of the cheek, two of the father's sisters had cancer, and the son of one of the sisters died from cancer of the stomach. In this record there is strong evidence of a family tendency to the disease.

Epidemic Cervical Adenitis with Cardiac Complications.—S. T. Pruen and Robert Kirkland, in two papers, present accounts of such an epidemic in Cheltenham. The symptoms are of two types; in one there is slight tonsillitis, very red pharynx, many and greatly enlarged glands in the neck, and sometimes in the axillæ, fever, prostration, and a tendency to heart murmurs; in the other the symptoms are all very slight, but there is a disproportionately greater tendency to cardiac complications and it is often possible to isolate a form of streptococcus from the blood in these cases. The cardiac and endocardial phenomena usually disappear after a few months or less, and rarely leave a permanent lesion. Characteristic of the disease is its marked infectiousness. The average incubation period is about four days, adults are more susceptible than children, and the gland most characteristically enlarged lies in the junction of the facial and jugular veins.

LANCET.

February 21, 1914.

Operative Treatment of Fractures.—Ernest W. Hey Groves continues his paper (see this JOURNAL for March 7, 1914), taking up the clinical problem in the light of his experimental observations. Bolting, with the use of two plates, one on each side of the bone, is of particular value in the treatment of fractures in the region of the large joints, especially the ankle, knee ,and elbow. For the shafts of long bones, one of three plate methods may be used: either bolted bilateral plates, a single plate made with two longitudinal bars connected by four cross bars bent to form a quadrant, thus gripping one quarter of the circumference of the bone and having the screws placed at right angles to one another; or by means of a triangular plate bored so that the screws also lie in alternate planes at right angles to each other. Where screws are used they must be metal threaded, and it is well to have a second thread cut near the head of the screw to fit a thread in the metal plate so that when the screws are driven home they cannot become loosened. A new type of intramedullary peg has been devised, consisting of two straight metal bars joined at their ends by transverse bars which act as hinges. These fold into narrow space and can readily be slipped into the bone medulla, when they are then expanded by means of a screw passing through one bar and impinging on the opposite. This enables one to make considerable pressure and to secure firm and lasting maintenance of position of the fragments of the bone. In making bone grafts in the long bones good apposition of the graft and broken bone must be secured and maintained. This can be accomplished by driving the graft, made into the form of a peg at one end, into the medulla of one fragment, then by fitting the other end into the second fragment by means of a groove which has been made in the shaft. The transfixion by two bars connected by parallel rods outside of the extremity is the ideal method for comminuted fractures of long bones of the leg. It has been found unsuitable for the femur or humerus. Groves believes that the old method of reduction and use of a plaster cast or splint is wholly bad in most cases of fracture, if not in all, for, "it does everything that can be done to make the muscles waste, the tendons adhere to their sheaths, and the joints become fixed. And it conceals the prospect of all these evil results.—Massage or manipulation, he believes, is not to be considered a method by itself; it is an adjuvant to others. Methods of extension are capable of giving good results if properly applied, but they confine the patient to bed for an unduly long time. Groves gives the following points as a guide to the choice of method: "Factors which make for success of nonoperative methods: Youth of patient,

i. e., during active bone growth; until puberty there is great capacity for bone repair and restoration of form and function. Subperiosteal or partial fracture. Fractures with little or no displacement. Fractures of one only of the paired bones of the forearm or lower leg, especially of the ulna or fibula. The majority of arm fractures. Factors which indicate the advisability of operation: Adult age. In fully grown bones, especially those of old people, there is good capacity for repair, but little for restitution of malunion. Fractures with gross displacement, especially oblique and spiral fractures. Fractures of the shafts of the femur and of both tibia and fibula. Fractures into or near the elbow, knee, and ankle." Groves suggests that not over a week be allowed for observation of a case to determine whether or not it is necessary to operate, and he emphasizes the need for frequent x ray examinations.

Increasing the Accuracy and Delicacy of the Wassermann Reaction.—Francis H. Thiele and Dennis Embleton state that, "cholesterin merely magnifies any anticomplementary effect, whether already present or induced by the Wassermann reaction. Owing to failure to appreciate this 'anticomplementary adjuvant phenomenon,' people who use anticomplementary antigens are continually reporting positive Wassermann reactions with anticomplementary sera from corpses, after anesthetics and hypnotics, and in scarlet fever, etc. . . . It is easy to obtain with absolute certainty a really powerful antigen for the reaction, free from all anticomplementary substances, so that as little as 0.000003 gram of this antigen will, in the presence of syphilitic serum, cause complete fixation of the quantity of complement used in the Wassermann reaction. The antigen is a purified phosphatide, having the nitrogen phosphorus ratio N_1P_1, obtained from an organ autolysed at room temperature for twenty-four to thirty-six hours." This antigen will keep unaltered for months. By its use no fallacious results have been obtained with other diseases, and the reaction is very delicate, showing positive in cases otherwise giving negative reactions.

MEDICAL RECORD

February 21, 1914.

Extradition of Insane Persons.—H. R. Stedman states that Massachusetts has the only interstate rendition law applicable to the insane to be found on the statute books of any State or any country. In framing the act the commission appointed for revision of the State laws aimed, not only to secure return to the proper authorities of patients who had escaped into Massachusetts, but also, and chiefly, to induce other States, not a few of which had copied others of her laws relating to the insane, to adopt this one as well. New York city, the author says, with its immense and cosmopolitan population, its many insane and its countless opportunities of all kinds, whether for work or pleasure, for crime or its concealment, is more likely than any other city, not only to furnish by far the larger number of escaped insane patients, but to be looked upon as a safe refuge by those from other States. Is the State of New York not in duty bound to make every effort to protect herself and her sister States by some such legislation? Should she follow Massachusetts in adopting an interstate rendition law, her example would have great influence in shaping the policy of other States in the same direction.

Further Study upon Mental Torticollis as a Psychoneurosis.—L. P. Clark presents a second contribution to this subject (see this JOURNAL for February 21, p. 401), and concluding says: The question naturally arises, What about old systems of treatment of mental torticollis, and is psychoanalysis alone sufficient to cure? My short experience is too limited for the formulation of any hard and fast rules of treatment. There is little doubt in my mind, however, that a lifelong maladaptation of the psyche and the defect of inner adaptation to the outside world require years for reconstruction. While the disease phenomenon may be greatly curtailed, the tic neurosis—based, as it probably is in most cases, upon the warring contentions of the hate and love instincts, the most primitive mental infantilism—is almost beyond full correction. Then, too, one has little positive knowledge of the correlation of structure and function of brain and mind. The manner and power of transmutation of thought into physical acts, and vice versa, are beyond even profitable speculation at this time. One can easily understand how a tic habit may continue as a detached pathological function, even after it has been deprived of its potential significance. In such instances the physical, moral, and spiritual training, in their best sense, find a fitting and constructive upbuilding of personality and character. One should be very sure, however, that the psychic ground is thoroughly cleared before assisting at such a delicate task as trying to set up soul ideals for another.

Evolution of the Study of Anatomy and Its Importance to Development of Surgical Knowledge.—J. E. Mears, after careful historical review, says that in the early days of his experience in surgical work, importance was given by the great masters to the necessity of well grounded instruction in the principles of surgery—these were basic in character and preceded instruction in practice. In the hands of the true surgeon the knife is simply an instrument, directed by study, investigation, and the lessons of experience. The study of the etiology of disease claimed earnest attention then, as it does now, when in perfected laboratories of research and faithful devotion of able investigators the causes and cure of disease are unremittingly studied.

Eclampsia; Total Absence of Albumin, and Generalized Hard Edema (Pure Chloride Retention?).—C. K. Austin reports that his patient had never felt better in her life than the day before labor; yet, without any warning, she had a typical attack of eclampsia, quickly followed by a second. Labor began at 3.30 p. m. and was over at 5.30; but she had four more attacks before midnight. Afterward recovery took place without incident. Toward the end of pregnancy the patient put on weight in an unusual manner, the increase in dimensions evenly distributed throughout the body, there was a total absence of intoxication and

of albumin, there were no apparent symptoms of ordinary edema, and the author attributed the condition to real augmentation of tissue. At that time he did not know that cases of this sort, though rare, had been reported—cases of generalized hard edema, without albumin, ending in eclampsia. The treatment adopted in this instance was free bleeding. For the first three days the patient was kept on a water diet, and passed enormous quantities of urine; her body steadily decreasing in size and her outlines resuming their normal appearance.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

January, 1914.

Pharmacological Action of Ecbolic Drugs.—Lieb reports at some length the action of some of the oxytocics on the circulation and on the isolated uterus, and also indicates their therapeutic employment. The effect of these agents is shown by means of tracings of myocardiagrams. In his summary Lieb states that ergot owes its pharmacologic action to several constituents, of which ergotoxin alone is specific. Other substances present are products of the putrefaction which occurs during the manufacture of the preparations. Stimulation of the uterus is characteristic of them all; consequently, in obstetrics at least no single active principle can replace active preparations of whole ergot. Extracts of the posterior lobe of the pituitary gland stimulate all smooth muscle. It has been suggested that the active constituent of the infundibulum is the hormone which initiates normal labor. This extract of the pituitary is the most reliable ecbolic which the obstetrician has at his command; but its promiscuous employment during labor cannot be condemned too strongly. Because of the stimulating action of quinine on the isolated uterus, it may be employed to induce or strengthen labor pains. The improvement that follows the use of isoquinolines in menorrhagia and metrorrhagia is due, not to changes in the circulation or in coagulation time, but to a direct action on the heart Fluidextract of viburnum stimulates the isolated uterus. Its action in dysmenorrhea, therefore, is due, not to an effect upon the uterus, but to a depression of the central nervous system.

Analytical Study of Two Hundred Cases of Pelvic Inflammatory Disease.—Cummings gives an interesting presentation of the relationship of gonorrheal infection and pelvic inflammation in women. Of the two hundred cases, gonorrhea leads the list of etiological factors, showing thirty-eight per cent. If it is true that fully one quarter of the cases of sepsis following abortion and full time labors can be traced to a former gonorrheal infection, the percentage in this table would be raised to forty-eight. If to this were added the greater part of the eight per cent. of cases of questionable origin, gonorrhea would probably be properly represented.

Operative Treatment of Mammary Carcinoma.—Ruth describes a method by which the axillary vessels and nerves are not left unprotected after there has been an operation for cancer of the breast. After most operations, these structures eventually become surrounded by dense scar tissue, which when contracting may cause intense pain. Ruth divides the pectorals from the clavicle to the lower border of the axillary space. The outer portion of the muscles is retracted outward and the inner portion retracted inward. After thoroughly cleaning the axillary space, the inner portion of the pectorals is removed. The outer portion is brought back and carefully sutured to the thoracic wall above, and to the latissimus dorsi and teres major below. It is directly in contact with the axillary nerves and vessels, and thus entirely obliterates the dead space. In no case has a patient suffered edema, pronounced impairment of function of the arm, or pain from compression.

AMERICAN MEDICINE.

January, 1914.

Tuberculosis Following Typhoid Fever.—C. E. Woodruff quotes statements of certain authorities and statistics indicating the previous occurrence of typhoid in cases of tuberculosis, and says that other facts show a relation between the two affections. For instance, the mortality curve of tuberculosis, which rises rapidly from childhood, reaches its maximum before thirty and declines after thirty-four years, while the maximum of typhoid is reached at fifteen and declines after twenty-one. The curve of tuberculosis seems to follow that of typhoid after an interval of about nine years; the average length of life after tuberculosis becomes evident is said to be seven years. It might mean that typhoid, contracted before twenty-five or thirty, is partly responsible for raising the mortality from tuberculosis nine years later. It is significant that males predominate in deaths from both diseases. Where typhoid is prevalent there should be more tuberculosis, and variations in the typhoid death rate should be followed by similar variations in the tuberculosis death rate. These propositions seem to be proved by a series of charts of death rates in the *Office international d'hygiène publique* in Paris. The curves of the two diseases show more or less parallelism throughout the civilized world. Unfortunately, measles and whooping cough, which with typhoid seem to be most frequently followed by consumption, were not considered of sufficient importance to record. The author goes on to state that one of the most remarkable instances of the reduction of tuberculosis by reducing typhoid is in the British army. All other armies show a similar result; though not to such an extent as the troops in India. In the United States army the dependence of tuberculosis is seen after 1890, when bacterial diagnosis had become more common; but in 1911 tuberculosis ceased to decline with the typhoid. Health authorities of New York and Pennsylvania have reported that typhoid and tuberculosis have markedly declined in their respective States in recent years, and at about the same rate. Cities do not show the same accurate correspondence between the two diseases as the country at large, and none of the curves is as regular as in cities and countries of the old world, where the census is more frequently taken. Tuberculosis rates in the table presented, with figures for the principal cities of Europe and

the United States, show a tendency to rise and fall with typhoid.

INTERSTATE MEDICAL JOURNAL.

January, 1914.

Psychological Factors in Medical Practice.—S. I. Franz believes that much nonsuccess of physicians with certain patients has been due to failure to appreciate the mental aspect of diseases, and that the success of mental healers has resulted from their use of mental factors. He has no brief in favor of nonmedical mental healers, for he thinks they usually do more harm than good; but he does have an indictment against the majority of the medical profession for their disregard of a most important element in successful therapy. As a whole they take little account of the psychological factors in practice, ignoring the possible effects of mind upon body, and thus they have indirectly been the cause of exploitation of many of their fellows by mind curists. What may be added is of equal importance: Physicians today should do what they can to correct this state of affairs, and help to have the physicians of tomorrow properly trained on these lines, so that in years to come, they may be of greater benefit to their fellow men, as well as more successful in their profession. Some medical men, indeed, already appreciate the mental aspects of their cases, and hence have been able to help their patients; but if they possess such psychological knowledge, it is because their innate acumen and psychological inclinations combine. A modicum of knowledge of mental states and processes is not sufficient, nor is knowledge obtained casually all that the physician requires. In his own interests, and for the benefit of his patients, he must have more extended knowledge of psychical conditions and events; he will then look at his patients, not as cases, but as persons—not as machines, but as sentient beings.

Relation of General Arteriosclerosis to Certain Ocular Conditions.—Elsworth Smith states that the eye is the organ where arteriosclerosis is often manifested earliest, where it can be most accurately appreciated by study of the background. First among ocular lesions ranks retinitis, especially the degenerative form of albuminuric retinitis, rather than the inflammatory variety. Here arteriosclerosis is most typically shown. Cushing takes the view that choked disc and albuminuric retinitis are practically the same pathological process, produced through increased intracranial pressure along the sheaths of the optic nerves; but the author does not see why, at least in the case of the degenerative form of retinitis, we should go beyond the diseased condition of the retinal arteries for an explanation of the retinal lesion. Arteriosclerosis is apparently not mentioned among the etiological factors of choroiditis, yet he thinks it reasonable to assume that it might be responsible for this, as well as retinitis. In arteriosclerosis, hemorrhages into the vitreous humor follow rupture of vessels of the retina and choroid. As to the possible role of arteriosclerosis in the pathogenesis of glaucoma, he presents certain considerations in support of such a relation. In treatment of these eye affections, apart from appropriate operative measures, the mainstay appears to be mercury bichloride and potassium iodide, in cases with a luetic element or not.

JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS.

January, 1914.

Mode of Action of Strophanthin upon Cardiac Tissue.—A. J. Clark found in perfusion experiments upon the frog's heart that the primary effect of strophanthin is to increase the force of cardiac contraction. In the fresh heart the force of the auricular contraction is increased markedly, and that of the ventricular less; in the hypodynamic heart—one in which force and conduction rate have been impaired by prolonged perfusion—both auricular and ventricular force is greatly increased. The systolic action of strophanthin is opposed by the presence of acid, by the absence of calcium, and by the hypodynamic condition; its action in impairing the rate of conduction is not antagonized, however, but rather increased, by these conditions. Its action upon conduction appears to be largely independent of its action upon contraction. The fact that the acids produced by the heart, and which accumulate when perfusion is stopped, antagonize the systolic action of strophanthin explains why hearts arrested in systole by strophanthin often relax in diastole, and also why hearts in which conduction is impaired before any systolic action has been produced, usually die in diastole instead of systole.

Stimulation of the Medullary Centres by Decreased Oxidation.—H. S. Gasser and A. S. Loevenhart determined the latent periods of stimulation of the medullary centres when the oxidative processes in the latter were decreased by the administration of carbon monoxide or sodium cyanide. The latent periods were found to be so short that the stimulation could not be ascribed to accumulation of acid products, this, in turn, entailed the conclusion that oxygen want is of itself a stimulus to the medullary centres. The authors showed by a direct method that carbon monoxide stimulates the vasomotor centre. The medullary centres are stimulated and then depressed in the following order by this agent: respiratory, vasomotor, and cardioinhibitory. The early fall of blood pressure often produced by carbon monoxide is due to a direct action on the heart.

NEW YORK STATE JOURNAL OF MEDICINE

January, 1914.

Cardiospasm. What Is It?—Anthony Bassler has made careful dissections in five fresh cadavers and finds that the esophagus is narrowest at the point of its passage through the diaphragm; that it is funnel shaped below the opening in the diaphragm; that this lower portion is about one and a half inch long; that it lies nearly horizontally; and that it is narrowest from side to side, even when food is passing. This portion extends from the level of the eleventh to that of the twelfth dorsal vertebra, the latter being the position of the cardiac end of the stomach. The position and extent of this portion of the esophagus, is constant under all conditions. Constriction of the gullet at the level of

the diaphragm is maintained by muscular and tendinous fibres of the diaphragm which surround it, and not by any sphincteric action of the esophagus itself. X ray examinations show that during life the muscle fibres of the diaphragm about the esophagus are maintained in a state of tonus. There is only a very weak sphincter at the cardia proper, the action of which, even when in spasm, is very easily overcome by slight pressure of material from above. "It seems logical to believe that it is not the constriction of the fibres of the gullet or stomach that prevents food from entering the gullet during the normal process of gastric digestion but that this is maintained by certain projections of the mucous membrane of the esophagus into the cardiac orifice of the stomach supported by the resisting liver tissues in front and above it by the resisting esophageal opening of the diaphragm." The muscular fibres of the lower end of the gullet and the cardiac end of the stomach are so arranged and intermingled that a spasm of these would rather open the cardiac orifice than tend to close it. The anatomy of this region, then, seems to offer reason for the belief that cardiospasm is due to the action of the fibres of the diaphragm on the esophagus at the point where this tube passes through this muscle. Careful x ray observations made on a few cases of this condition in man have shown that the constriction is actually present, not in the position of the cardia, but in that of the constriction of the esophagus by the diaphragm. Logical treatment of the condition would seem one which attempted a division of the inner portions of the diaphragmatic crura.

Treatment of Toxemias of Pregnancy with Placental Serum.—Abraham J. Rongy was first led to try this serum by the results of his favorable experiences with the injection of fetal serum as a means of hastening or inducing labor, and by the belief that toxemia may be due to the absorption into the maternal circulation of certain substances derived from the products of conception. Trial has included only six cases so far, and in four of these the toxemic symptoms have been very promptly and completely controlled. Serum has been used in doses of five to twenty c. c., injected subcutaneously at intervals determined by the response and severity of the original symptoms. The main criteria used in the treatment of these patients have been the general appearance of the patient and the pulse rate. "If the pulse remains 100-110 there is no danger, even if they do vomit, the intoxication could not be very severe. A drop in the pulse rate takes place in these patients before the vomiting is controlled." Vomiting is not considered a contraindication to the use of food, but it is better to consult the whims of the patient and to see that she has sufficient nourishment.

SOUTHERN MEDICAL JOURNAL.

Diagnosis and Treatment of Commoner Thyropathies.—L. F. Barker, from the standpoint of the pathological anatomist, states that in Graves's disease the diagnosis is easy. Tachycardia, struma vasculosa, disturbances of the autonomic nervous system, the fine tremor, and mental state, the accelerated metabolism, and blood picture (usually a slight leucopenia; often an increase in the lymphocytes), make it clear. There are, however, many abortive cases, or atypical cases, in which the clinician may find great difficulty in coming to a satisfactory decision. Any one of the following symptoms, even in the absence of others, should make a practitioner keep the possibility of incipient Graves's disease in mind: Persistent tachycardia (pulse above eighty-five), rapid emaciation without apparent cause, excessive sweating, persistent watery diarrhea, neurasthenic and psychasthenic states, marked lymphocytosis, fine tremor of the fingers, and one or more of certain eye signs (among them protusion of the eyeballs; widened lid slits; dissociation between movements of the eyeball and upper lid; insufficiency of convergence; infrequency and incompleteness of winking). In medical treatment the most important elements are rest and general upbuilding measures. Diet should be abundant in calories, but somewhat restricted in meats. Small icebags may be applied over the thyroid and a larger, flat icebag over the heart, to combat the tachycardia. Most valuable drugs, in the opinion of the author, are quinine hydrobromide, given after the method of Forchheimer, and sodium cacodylate hypodermically. If, after a fair trial, patients do not respond well to medical treatment, or if a patient obliged to make his own livelihood, has become incapable of doing so because of the disease, surgical operation can be strongly recommended once the diagnosis is certain. In myxedema, diagnosis is easy in typical "full blown" cases, but at the onset, and in *formes frustes*, many cases are entirely overlooked. Scleroderma will rarely be mistaken for myxedema. Some cases of dystrophia adiposocongenitalis, due to disease of the hypophysis, may simulate it, but eye changes and x ray of the sella turcica help in differentiation. True obesity, though sometimes due to thyroid insufficiency, will not easily be confounded with myxedema, in which the hands are greatly thickened; while the facial appearance differs in the two conditions. Congenital myxedema due to thyroaplasia has to be differentiated from several other conditions, but careful consideration of all the facts will usually permit one to give each its proper nosological position. The *forme fruste* of myxedema, or what Kocher has called thyropenia, should be thought of in children who are dull at school or retarded in growth or habitually constipated without apparent cause. In adults, persistent constipation, endogenous obesity, dry, harsh skin, constant subjective feeling of cold, or recurring drowsiness in daytime should make one think of myxedema. If in such cases there is no improvement whatever from administration of thyroid extract for two weeks, one can feel sure that the symptoms are due to causes other than a lack of thyroid secretion. There is nothing more remarkable in medical experience than the striking changes which take place in myxedema under thyroid treatment. Once the symptoms and signs have been abolished, many patients get on very well with one or two tablets a day, but it is usually necessary for them to keep up this dose during the rest of their lives.

Proceedings of Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting of Wednesday, October 1, 1913.

The President, Dr. JAMES C. WILSON, in the Chair.

Medical Treatment of Surgical Cases.—This article by Dr. JOHN H. JOPSON appeared in the JOURNAL for November 29, 1913.

Dr. J. CHALMERS DACOSTA pointed out that a physician did not have to be a surgeon, but every surgeon was and must be primarily a physician. When a man devoted himself to surgery he must of necessity abandon general practice and he thus lost somewhat his skill in the refinements of medical practice. In a doubtful or difficult case the surgeon should call in a physician, but that did not mean, as he understood it, that the physician ruled the situation. There was no way by which the surgeon could abandon his own individual responsibility. He was the man in charge unless every surgical feature of the case had passed away, when he should at once transfer the case absolutely to the physician. The surgeon's responsibility involved the making of the diagnosis, the decision as to operation, the selection of an anesthetic, the operation, and the postoperative care. The physician was often of the greatest possible help in deciding upon the form of anesthetic in a complicated case. In the aftertreatment of some surgical cases, the patient required skilled medical care; cases which had been medical before coming to operation were again medical after leaving the surgeon.

Dr. M. HOWARD FUSSELL quoted Doctor Riesman, who had said, "team work" was what they should aim at. This was, after all, the solution of the subject discussed. They must have positively clear conceptions of the medical condition, the surgical, the pathology, and the laboratory findings if their cases were to get well. The average case was not being discussed, but the borderline. He agreed with Doctor Riesman that the majority of cases of indigestion were not surgical. When a case rationally treated did not yield, the surgeon should be called for help in diagnosis, to operate, if necessary, and to treat the case during convalescence. He was sure there were many cases of chronic appendicitis, of gallstones, and of ulcer which could not by any possibility be diagnosed without an exploratory operation. Pericarditis certainly could be mistaken for appendicitis. Such a case had come under his notice recently; a lad of five years, with long standing and severe pain in the right iliac fossa. The child was under careful observation and within twelve hours had marked pericardial friction. He went through an attack of pericarditis and did not have appendicitis. In proportion as the medical man realized the surgical needs in his medical case, and the surgeon the medical needs in a given case, so much safer was the patient. Personally, he felt that in severe conditions demanding surgical interference the fact that the patient might die from operation was not a reason for refusing operation. It gave him the one chance for life.

Dr. JOSEPH SAILER, among the complications following surgical operations, had been impressed with the relatively frequent occurrence of acidosis. There seemed to be a considerable difference between those types of acidosis that came on slowly and over long periods of time in which the usual tests for diacetic acid and acetone in the urine were positive, and those cases in which there was sudden solution of these substances in the blood serum. In the former the symptoms were very trivial. In the latter they frequently were of extreme severity and the patient might die. He had records of three cases in which diacetic acid and acetone were continuously present for a period of over two years before death. In the acute forms, particularly in paroxysmal acidosis of children, the picture symptomatically corresponded very closely to the acidosis that came on after anesthesia. In the postanesthetic forms of acidosis of a distinctly morbid type the condition was most alarming. Two such cases had come under his observation. The cause was not clear. The most important symptom was the odor of acetone in the breath. The diagnosis was established upon the discovery of considerable amount of acetone and acetoacetic acid in the urine Treatment lay in the administration of alkalies in sufficient quantity to neutralize the offending substances. The best alkali was probably sodium bicarbonate. The routine practice of lavage of the stomach in all cases of postoperative vomiting was probably not always the best treatment. It was desirable to test the urine for acetone and acetoacetic acid for at least three days following each operation.

Dr. JOHN H. GIBBON insisted that cooperation between a medical man and a surgeon was absolutely necessary for the welfare of the patient. A rule which he thought every surgeon should follow was never to operate, unless convinced that operation was necessary. The conscienceless surgeon was as dangerous as the surgeonless internist.

Dr. RICHARD H. HARTE thought it a great mistake that more "team work" was not done in their hospitals. It was of untold value to the surgeon to have seen a bad case of typhoid fever from time to time in company with the physician where the prospects of perforation were great. The same might be said regarding cases of hemorrhage in typhoid fever and many of the pulmonary conditions ultimately transferred to the surgeon for operation. Medical cases occurring on the surgical side of the house were usually of a character that could be handled as well by a surgeon as by a physician, particularly since a surgeon must first have been a physician.

Doctor JOPSON said that the point which he was especially interested in making, was that by a cooperation or a continuous collaboration of physician and surgeon throughout the case opportunity would be afforded to relieve the discomfort of the patient and to evolve new methods of postoperative treatment; none was so well qualified as the man who devoted the greatest part of his time to therapeutic pursuits.

Stated Meeting, Wednesday, November 5, 1913.

The President, Dr. JAMES C. WILSON, in the Chair.

Treatment of Poliomyelitis by Operative Measures.—This article by Dr. G. G. DAVIS appeared in the JOURNAL for January 3, 1914.

Dr. J. Torrance Rugh did not believe that a subject of greater orthopedic importance could have been presented. Doctor Davis had shown some of the advanced work with this most troublesome class of cases and had obtained about as good results as one could possibly hope for. In Italy he had seen Professor Putti do an operation which to his mind took the place of arthrodesis for the ankle joint, especially in cases of this type. He separated the anterior tendons from the muscles high up on the leg. Then a hole was drilled through the tibia and the tendon ends were drawn through this hole and fastened subperiosteally in front of the tibia, some of the tendons being passed through from one side and others from the other side. He thus shortened the tendons and left purely tendinous structure between attachment and insertion, and the tendon acted as a ligament and would not stretch. It was the badly degenerated muscle tissue which stretched. If there was sufficient contractive power on the part of the posterior tendons the anterior ones could be shortened and the foot maintained in the proper position, or if there were live muscles anteriorly, the posterior tendons were shortened in the same manner and the necessity of an arthrodesis was avoided. The demonstration given in Doctor Davis's case in the transferred power of the hamstring tendons was one of the best examples of what could be done. Operative measures should not be undertaken until it was certain that complete, or all possible regeneration had taken place, and that there was no possibility of return of power in the muscles. Not until about six years after the onset of the paralysis should operative measures be instituted.

Doctor Davis's desire in bringing before them this case was to exhibit one which was practical, a badly crippled patient, a patient who had been wearing apparatus *ad nauseum*, and to show that if one was willing to take the time and trouble, a great deal could be done for such patients. Often they could be enabled to walk entirely without apparatus as in this case. This special boy was selected because he happened to combine in his own person paralysis of three different parts of the body, the foot, the knee, and the hip.

Psoriasis.—Dr. Jay F. Schamberg had pursued a careful study of the protein metabolism of eight psoriasis patients and the following observations had been made: 1. On a given protein diet a psoriatic subject eliminated less nitrogen in the urine than a normal individual on a corresponding diet. The urinary nitrogen in some instances reached a level lower than had ever been recorded. 2. Patients suffering from psoriasis exhibited a remarkable retention of nitrogen. This retention appeared to be proportional, in a general way, to the extent and severity of the eruption. 3. The nitrogen was retained to a greater degree than had been observed in connection with any other condition, and was retained with great ease on a diet low in nitrogen and insufficient in caloric value, and one upon which a normal individual would fail to maintain equilibrium. 4. Experiments with urea feedings showed conclusively that the nitrogen retention could not be attributed to any disturbance in the eliminative capacity of the kidneys. 5. Patients with extensive psoriasis might lose very large amounts of nitrogen in the exfoliated scales which consisted of almost pure protein. 6. The retention of nitrogen in most of their cases was greater than could be accounted for by the protein lost in the scales, and it might persist even after scaling had ceased and the eruption had virtually disappeared. 7. A low nitrogen diet had a most favorable influence upon the eruption of psoriasis, particularly when the latter was extensive. Making all reservation suggested by scientific caution, they felt that there could be no doubt that severe cases of psoriasis improved under such a diet almost to the point of disappearance of the eruption. 8. Conversely, a high nitrogen diet exhibited an unfavorable influence on psoriasis, commonly causing an extension of the eruption. 9. Whether a high nitrogen diet could stimulate an outbreak of psoriasis in a psoriatic subject, who was at the time free of the eruption, had not yet been determined. 10. The great proliferation and exfoliation of cells by the skin in psoriasis demanded a large supply of protein which could be procured only from the lymph and blood streams. This protein supply might be derived from the ingested food, and a possibility existed that the great demand of the diseased skin for protein might also be satisfied by the protein reserve in muscle tissue, which thus might become depleted and later require restoration. This would explain the ready and persistent retention of nitrogen in their cases. 11. A protracted low protein diet might diminish the proliferative activity of the skin by diminishing the supply of the principal building material, namely, protein. On the other hand, a high protein diet might stimulate the proliferative activity of the cells by furnishing an abundant supply of the necessary protein. 12. They deemed it premature at the present stage of their research studies to commit themselves to an hypothesis as to the primary cause of psoriasis. Their investigations were being continued and extended in various directions.

Meeting of Wednesday, February 4, 1914, 8 p. m.

The President, Dr. James C. Wilson, in the Chair.

One Hundred Cases of Malignant Disease Treated with Radium.—Dr. Edward A. Shumway had had a patient under observation since 1900, when he operated upon him for convergent squint. The results of the operation were excellent and he was comfortable until 1911, when he manifested severe headache associated with vomiting and staggering toward the left side. In March, 1912, Doctor Frazier operated, evacuating and removing the wall of a cyst the size of a walnut, found on the upper surface of the left cerebellum. The symptoms were entirely relieved, but there was a recurrence in the spring of 1913. In September, Doctor Frazier did a second operation and found a solid growth in the cerebellum on the left side which proved to be a glioma. The case was considered inoperable, but upon the father demanding that something be done, the boy was referred to Doctor Newcomet. The result as seen now was gratifying. It was possible that the improved condition of the optic nerve head might be the result of the second operation; which, however, did not improve the general symptoms. Whether the im-

provement was only temporary remained to be seen. The case, however, was well worthy of report.

Dr. CHARLES H. FRAZIER thought it evident from the reports that the application of radium had had a very positive influence upon the growth. They had had several cases, however, in which improvement following a simple decompressive operation in conditions precisely similar to this case had continued over a period of at least three years. Regarding the use of radium in tumors of the brain, Dr. Robert Abbe, of New York, and he had discussed the feasibility of using radium directly at the time of operation, not only in brain tumors generally, but possibly in lesions of the pituitary body, and they had under observation two cases in which such procedure might be employed.

Dr. GEORGE E. DE SCHWEINITZ believed that there was a certain use which radium had, even if it was unable to check the progress of a growth; namely, the alleviation of pain. They might not always hope to remove the growth, but even if there was a relief of pain, the application of radium was abundantly justified. Of its value in deep seated growths he could express no opinion, because he had not had any personal experience.

Dr. JAY F. SCHAMBERG thought the results encouraging in the patients exhibited. He felt that they ought to maintain a feeling of hopeful expectancy regarding the results of radium treatment. They were in an experimental period. The most hopeful cases shown were those of pronounced influence upon metastatic lesions in the lymphatic channels. It was fortunate that they had had presented a paper which differed in tone from the extravagant utterances which had appeared in the public press within recent months.

Dr. M. B. HARTZELL said that the most they could say about radium was that it was a hopeful remedy, and that, when they had learned more about it, perhaps they would discover that they had a remedy for a certain class of malignant growths.

Dr. ALFRED GORDON asserted that it would be one of the greatest acquisitions in medicine if radium could be applied to tumors of the brain. When Doctor Abbe, a short time ago, came before the college it occurred to him to ask why this agent should not be tried in tumors of the brain which were otherwise hopeless. Doctor Abbe seemed somewhat surprised by this question and said he would make an effort to make such application of the agent. Literature gave instances of the successful use of radium in some neurological conditions, such as obstinate cases of sciatica. It had also been employed in syringomyelia and in progressive muscular atrophy.

Dr. A. B. HIRSH, in view of the expensive charges being made for the radium emanation waters for internal administration, said that it should be remembered that the Department of Agriculture at Washington had issued a caution that these waters lost their medicinal effect within a few hours after leaving the source of supply.

Dr. JOHN A. MCGLINN had had no experience with radium, except one case. It seemed to him that in these cases of inoperable cancer of the cervix, radium had its greatest field.

Dr. WILLIAM S. NEWCOMET remarked that with reference to the direct application to the brain case referred to by Doctor Frazier, it seemed hardly necessary to open the head to make these applications with the radium, as the "crossfire" should answer and give them as perfect a result. The case presented tonight gave an example of this method and while it was decidedly improved, hasty conclusions must be withheld. It must be admitted that sarcomas were always most irregular in their course, and glioma was of sarcoma type. The cases of spontaneous cure had usually been sarcoma. The ideal method of using radioactivity was to employ the emanations of radium. Emanation waters must be used soon after derivation from their source. Where they had a large supply of radium the emanation should be taken off for use and the radium kept in stock.

Cerebrospinal Fluid and a Special Method of Treatment of Essential Epilepsy.—Dr. ALFRED GORDON described the value of lumbar puncture and the importance of study of cerebrospinal fluid for diagnostic and therapeutic purposes, and mentioned the toxic products usually present in the blood and in the cerebrospinal fluid in epilepsies. He called attention to the work of Ceni and Donath with reference to the toxicity of blood serum in epileptic individuals. It was then estimated that if the cerebrospinal fluid of one epileptic patient could be injected into another epileptic patient, thus bringing into the economy two opposing toxins, gratifying results might be secured. Four patients were subjected to the treatment in a period of ten months. There had been decided diminution in number of attacks and in severity, with general improvement in mentality and all functions. The treatment was shown to be far superior to any other.

Dr. MORRIS J. LEWIS noted that Doctor Gordon had not mentioned whether in any of the cases the Wassermann reaction was present or not. In a rather large experience he had found this reaction present in a large proportion of cases, especially after puberty. He would hesitate about using spinal fluid in the manner mentioned, especially without knowing most definitely that there was no communicable disease present.

Doctor GORDON believed that unquestionable hesitation should be felt in any new treatment. He did not introduce the fluid into the spinal cord, but subcutaneously. He simply took this opportunity to present to the profession the favorable results so far obtained, which, so far as he knew, had not been gained by any other method. The Wassermann test had been made and found negative.

Letters to the Editors.

PROPHYLAXIS OF PROSTATIC TROUBLE.

New York, [illegible]

To the Editors:

You deserve the gratitude of the medical profession for the editorial article in this week's issue of the NEW YORK MEDICAL JOURNAL, in which you outline the measures advocated by Doctor Le Fur for the purpose of avoiding or minimizing the prostatic troubles incident to advancing middle and old age. It would be still better if your article could be read largely by the laity.

It is true, as you say, that following faithfully the regime advised by Doctor Le Fur would keep a patient pretty busy, but it is better to be busy and alive than to have all the time on one's hands and be dead. Then we must remember that half a loaf is better than no bread, and if the patient is not able to do everything Doctor Le Fur advises he can still follow some of the advice with a proportionate amount of benefit.

And we should also bear in mind that the excellent dietetic and hygienic instructions recommended by Doctor Le Fur and other rational urologists are not only of value in preventing or minimizing the dangers of prostatism and prostatic hypertrophy, but have an undoubted, almost immediate effect in improving the patient's general condition. They make him live more fully and more effectively, so that he can accomplish in six hours just as much as he would otherwise accomplish in ten hours. As he also stands good chances of having his life prolonged, it will be seen that the time spent in attending to the above mentioned dietetic and hygienic regime is not wasted, but is eventually a great economizer of time.

And speaking of prostatectomy, there is no question that the technic of the operation has undergone remarkable improvement, that its mortality is much less than it used to be. Nevertheless it is not an operation to be spoken of lightly, and I am quite sure that the most skillful prostatectomist will think twice, and perhaps three times, before he will decide to undergo the operation himself, or before he will subject to it a near member of his family. He who advises and advocates measures which, however time-consuming, will prevent prostatism and prostatic hypertrophy, is therefore entitled to the gratitude of the medical profession and of the laity. WILLIAM J. ROBINSON, M. D.

OPEN AIR TREATMENT OF BURNS.

NEW YORK, *March 9, 1914.*

To the Editors.

In a recent report in one of our daily papers it was stated that in one of our hospitals a new cure had been found by which skin grafting could be discarded. Since I am using a similar and even simpler method for the last sixteen years with the very best results, I think it is not out of place to publish this method in the JOURNAL for the benefit of the medical profession. The mode of procedure is so simple that the mere report of a few important cases will elucidate the method.

In the spring of 1898, I was called to a woman who had been burned three days after her confinement by the explosion of a lamp. The entire back, from the neck to the lumbar region, reaching from side to side, showed a third degree burn. Being a woman in childbed I refused to treat her at home and sent her to a hospital.

Six weeks later, the patient came to see me in my office. She had run away from the hospital where several skin graftings had been unsuccessfully attempted. When the bandage was removed, I found the entire surface of the back turned into a huge ugly ulcer covered with dirty gray granulations. The ulcer was uneven, small elevations alternating with large depressions.

I cleaned the ulcer as best I could and then busied myself in the preparation of an antiseptic salve. This preparation took some time and all the time the wound remained exposed to the air. When I returned, I noticed that the tops of the elevations were perfectly dry, and that a drying process had started along the entire borderline of the ulcer. I now changed my intended treatment and applied the salve only to the wet depressions, while the dry elevations and the edges were dusted with a thick layer of the powder used in the salve. The following day, upon removal of the bandage, I found that most of the elevations and about half an inch along the entire edge of the wound were covered with dry crusts. I cleaned the ulcer and exposed it again to the air for about thirty minutes. The irregular, healed up, elevations or islands grew daily in extent until they fused at different points, turning the large ulcer into several smaller ones. In four weeks the patient was cured.

Another interesting case is the following: I had operated on a young man for an umbilical hernia in a small hospital I was connected with. I had to leave the following day for Boston, and when I returned, a week later, I found that my patient's leg had been burned by a hot water bag that was applied after the operation while the patient was still unconscious. It was another burn of the third degree. The entire calf showed an ulcer of about six by five inches. The patient left the hospital for his home, and I treated him there. I ordered his nurse to remove the bandage about an hour before I was to make my call, clean the wound, and leave it exposed to the air until my arrival. I found daily that a certain part of the ulcer along the edge appeared perfectly dry after each exposure, and I treated the wound in the same way as in the previous case, only changing the powder for a similar one. In two weeks the patient was cured.

The third case is that of a little girl, three years of age, who turned over a cup of hot tea and scalded her entire arm and hand. It was a burn of the second degree. The following day a physician who saw the patient in consultation, advised skin grafting to prevent ugly scars. The wound looked so ugly that I should have agreed with the doctor if I had not had such marked success with the "exposure to air" treatment. I therefore treated my little patient in the same way as the others, only that the exposure to the air was of shorter duration. For when the drying process begins, the patients complain of considerable pain, which the little patient could not stand. In eight days the arm had healed without leaving the least trace of scar.

I wish to add that I tried to treat the ulcers caused by burning, as well as varicose ulcers, by exposing them to the direct sun rays, but I had to abandon the method on account of the terrible pain. By exposure to the direct sun rays the drying process proceeds with such celerity that the patients cannot stand the pain, while with the slower method the pain is more endurable.

B. S. TALMEY, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Abhandlungen über Salvarsan. Gesammelt und mit einer Vorrede und Schlussbemerkungen herausgegeben von Prof. PAUL EHRLICH, Wirkl. Geh. Rat, Direktor des Instituts für experimentelle Therapie. Band III. Mit 2 Tafeln und 40 Figuren im Text. München: J. F. Lehmann, 1913. Pp. 584.

This volume, like its predecessors, consists largely of a collated series of papers by different authors upon various topics relating to salvarsan, such as the proper preparation of water for the injection, the dangers of saline injections, experiences with salvarsan in the German army and navy, the abortive treatment of syphilis, reinfection, neurorecurrences, untoward effects and cases with fatal termination, the use of salvarsan in nonsyphilitic and tropical diseases, and, finally, the mode of administration and utility of neosalvarsan. A few of the articles incorporated are in English and French, but the majority are those of German writers. Ehrlich's closing remarks, occupying about thirty-five pages of the book, deal largely with neurorecurrences, fatal cases, contraindications, and the properties, physiological action, and clinical effects of neosalvarsan. Accounts of numerous experiments in animals are included. Stress is laid on the greater toxicity of neosalvarsan when injected subcutaneously than intravenously, owing to the greater degree of oxidation of the drug to toxic products when the former route of administration is employed. In brief, the book may be said to contain all the most important articles on salvarsan that appeared during 1912 and a part of 1913. Their selection by Ehrlich himself lends authority to the collection as a whole, and the practical nature of the topics discussed renders the work one of peculiar value to the practitioner.

The Bradshaw Lecture on the Diagnosis and Treatment of Incipient Pulmonary Tuberculosis. Delivered before the Royal College of Physicians of London, November 5, 1912. By DAVID BRIDGE LEES, M. D., F. R. C. P., Consulting Physician to St. Mary's Hospital and to the Hospital for Sick Children. London: H. K. Lewis, 1913. Pp. 116. (Price, 5s.)

The author holds that the existence of an incipient pulmonary tuberculosis can be easily demonstrated by careful

percussion, pre[illegible] during [illegible] the [illegible] of the [illegible] the patient is put to bed [illegible] with relaxed muscles, long before [illegible] dence is obtainable, and while the [illegible] still insufficient for a diagnosis. He also lays stress, and wisely, too, on the fact that a negative bacteriological report is often fatally deceptive, and that to wait for the demonstration of bacilli in the sputum is like postponing the diagnosis of cancer until the glands are involved. In the earliest stage of a pulmonary tuberculosis it is always possible, and in a somewhat later stage usually possible, to obtain prompt and permanent arrest of the disease by the employment of the method of continuous antiseptic inhalation. As inhaler the author uses the simple oronasal cage of perforated zinc advocated by Dr. Burney Yeo. It is worn over the nose and mouth, and is kept in place by elastic bands behind the ears; it contains a piece of sponge or felt on which the solution is dropped. The only precaution necessary is to see that the edges of the inhaler, which rest on the skin, are not wetted, lest the skin should be strained or made sore. The antiseptic solution employed has been: Acidi carbolici 5ij, creosoti 5ij, tincturæ iodi 5j, spiritus ætheris 5j, spiritus chloroformi 5ij. Of this solution, six to eight drops are poured on the felt of the inhaler every hour during the daytime, and two or three times during the night, if the patient is awake.

The author submits a table of seventy cases in which recovery took place. It must be somewhat unpleasant to go around muzzled continuously, yet the earnestness of the writer and the fact that his statements constituted the Bradshaw lecture of the Royal College of Physicians, London, give due weight to his assertions. The remedy is worth trying.

Traité du sang. Publié sous la direction de A. Gilbert, professeur de clinique médicale, a l'Hôtel Dieu de Paris, et M. Weinberg, chef de laboratoire a l'Institut Pasteur. Secrétaire de la Rédaction, M. le Dr. Boidin. Avec la collaboration de MM. Achard, Aubertin, Aynaud, Baudouin, Billet, Boidin, Bordet, Breton, et al. Tôme premier. Paris: J. B. Baillière et fils, 1913. Pp. 698.

This work aims to present a complete survey of our knowledge of the blood and of modern technic. Its purpose is to aid the scientist in his investigational work as well as the practitioner who uses hematology as a means of diagnosis and as an aid in prognosis and treatment. The fact that the work is by a large number of hematologists inevitably causes the different subjects to be somewhat unequal in actual value to the reader, some covering their chosen field far more completely than others. Especially noticeable is the splendid chapter on coagulation by P. Nolf, the most complete it has ever been our pleasure to read. The article on blood gases by Niclous compares unfavorably with it, being merely a summary of familiar knowledge while disregarding suggestive investigations, those of Bohr for instance, which have shown that the prevailing doctrines are not as sound as they are believed to be. Conversely, the study of the erythrocyte by F. Weidenreich, is a model of accuracy and completeness, an estimate which applies also to the article of hemoglobin by Tiffeneau and the pathological erythrocyte by Sabrazès. On the whole, the work is a valuable one. It is copiously illustrated, a few of the plates being colored.

Interclinical Notes.

We once treated editorially the idea that if no attempt was made to soften the brutalities of war, that method of settling international difficulties would die out the sooner. In the *Outlook* for March 7th there is a discussion of the opinion of a well known war correspondent, Miss Edith Durham, to the same effect. The *Outlook* believes, however, that the Red Cross produces a friendly feeling between opposing armies and tends therefore to shorten hostilities. We doubt if the feeling between the two armies has anything to do with the length of a war.

* * *

Doctor Grenfell discusses in the February *Wide World Magazine* the question of schooling for the fisherman's children. He states that the Labrador schools are still denominational and are not used for purely educational efficiency—moreover there are no technical schools at all, and in this kind of life a practical acquaintance with mechanics and the rudiments of engineering are more valuable than much theory. He thinks it is better that the Labrador girls should be familiar with domestic matters [illegible] their particular catechism. To us this raises a most interesting question. Precisely at what stage of culture should such practical subjects as those mentioned by Doctor Grenfell, be abandoned to be replaced by Latin, Greek, and pure mathematics?

Meetings of Local Medical Societies.

[illegible] *March 16th.*—New York Academy of Medicine (Section in Ophthalmology); Yorkville Medical Society; Medical Association of the Greater City of New York; Elmira Clinical Society.

Tuesday, *March 17th.*—New York Academy of Medicine (Section in Medicine); Tompkins County Medical Society; Medical Society of the County of Monroe; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Tri-Professional Medical Society of New York; Medical Society of the County of Kings; Binghamton Academy of Medicine; Syracuse Academy of Medicine; Ogdensburgh Medical Association; Oswego Academy of Medicine; Medical Society of the County of Westchester.

[illegible] *March 18th.*—New York Academy of Medicine (Section in Genitourinary Diseases); Alumni Association of City Hospital, New York; Schenectady Academy of Medicine; Women's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; Buffalo Medical Club; Northwestern Medical and Surgical Society of New York

Thursday, *March 19th.*—New York Academy of Medicine (stated meeting); Auburn City Medical Society; Geneva Medical Society; German Medical Society, Brooklyn; Æsculapian Club of Buffalo; New York Celtic Medical Society.

Friday, *March 20th.*—New York Academy of Medicine (Section in Orthopedic Surgery); Mount Vernon Medical Society; University of Virginia Medical Society; Clinical Society of the New York Post-Graduate Medical School and Hospital; New York Microscopical Society; Alumni Association of Roosevelt Hospital.

Official News.

Public Health Service:

[illegible] *missioned and other officers of the United States Public Health Service for the seven days ending March 4, 1914:*

Akin, Charles V., Assistant Surgeon. Directed to proceed to New Orleans, La., and report to the medical officer in charge of the Marine Hospital for duty and assignment to quarters. **Faget,** Frank M., Assistant Surgeon. Directed to report to the medical officer in charge of the New Orleans quarantine station for duty and assignment to quarters. **Galloway,** Thomas C., Jr., Assistant Surgeon. Directed to proceed to San Francisco, Cal., and report to the medical officer in charge of the Marine Hospital, for duty and assignment to quarters. **Linson,** John H., Assistant Surgeon. Directed to proceed to Detroit, Mich., and report to the medical officer in charge of the Marine Hospital for duty. **Lumsden,** L. L., Surgeon. Detailed, at the request of the Maryland Medical and Chirurgical Faculty, to deliver an address before that society at Baltimore, Md., March 9, 1914, on Public Health Service. **Miller,** Knox E., Assistant Surgeon. Directed to proceed to Stapleton, N. Y., and report to the medical officer in charge of the Marine Hospital for duty and assignment to quarters. **Robinson,** D. E., Surgeon. Relieved from temporary duty in the Hygienic Laboratory and directed to proceed, via New York, N. Y., to Cincinnati, Ohio, for investigations of tuberculosis in relation to occupation and environment. **Ruoff,** J. S., Assistant Surgeon. Granted thirty days' leave of absence from January 24, 1914, [illegible] Staton, [illegible]

Assistant Surgeon. Directed to proceed to West Point, Va., for investigation of case of smallpox on schooner *Lizzie Hall*. **Sutton,** Don C., Assistant Surgeon. Directed to proceed to Chicago, Ill., and report to the medical officer in charge of the Marine Hospital for duty and assignment to quarters. **Thometz,** H. M., Assistant Surgeon. Relieved from duty at the Marine Hospital, San Francisco, Cal., and directed to proceed to the San Francisco quarantine station, Angel Island, Cal., and report to the medical officer in charge for duty and assignment to quarters. **von Ezdorf,** R. H., Surgeon. Directed to report at the Bureau, Washington, D. C., March 4, 1914, for conference relative to malaria investigations. **Waller,** Clifford E., Assistant Surgeon. Directed to proceed to Baltimore, Md., and report to the medical officer in charge of the Marine Hospital for duty and assignment to quarters. **Wayson,** Newton E., Assistant Surgeon. Directed to proceed to San Francisco, Cal., and report to Surgeon John D. Long for duty in plague suppressive measures. **Wilson,** Joseph G., Assistant Surgeon. Directed to report to the Chief Medical Officer, Immigration Station, Ellis Island, N. Y., for duty.

Appointments.

Dr. Newton E. Wayson, Dr. Thomas C. Galloway, Jr., Dr. Clifford E. Waller, Dr. Don C. Sutton, Dr. Frank M. Faget, Dr. John H. Linson, Dr. Charles V. Akin, Dr. Knox E. Miller, and Dr. Joseph G. Wilson commissioned Assistant Surgeons in the United States Public Health Service, February 24, 1914.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital, Mobile, Ala., for the physical examination of First Lieutenant of Engineers C. S. Roos, U. S. R. C. S. Detail for the board: Surgeon R. H. von Ezdorf, chairman; Assistant Surgeon R. C. Derivaux, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending March 7, 1914

Baker, David, Major, Medical Corps. Ordered to Oklahoma City, Okla., to inspect the field hospital of the Oklahoma Militia. **Carter,** Henry P., First Lieutenant, Medical Corps. Relieved from duty with Second Division and from duty at Fort D. A. Russell, Wyo., in time to report on April 1, 1914, to the governor of the Panama Canal for assignment to duty as health officer at Colon. **Friedenwald,** Julius, First Lieutenant, Medical Reserve Corps. The resignation of his commission has been accepted to take effect March 3, 1914. **Haig,** C. R., First Lieutenant, Medical Corps. Ordered to Fort Niagara for temporary duty. **Harmon,** Daniel W., Captain, Medical Corps. Relieved from duty at Fort Oglethorpe, Ga., in time to report on April 1, 1914, to the Governor of the Panama Canal for assignment to duty as health officer at Cristobal. **Hereford,** John R., First Lieutenant, Medical Reserve Corps. Joined station at Fort Dade, Florida, February 25, 1914. **Mason,** Charles F., Lieutenant Colonel, Medical Corps. Relieved from duty with the Canal Commission, and will report to the governor of the Panama Canal for duty as chief health officer, about April 1st. **McKellar,** First Lieutenant, Medical Corps. Ordered to Fort Worden, Washington, during the absence of Captain O. G. Brown, Medical Corps, who has been granted three months and ten days' leave of absence. **Phillips,** John L., Colonel, Medical Corps. Relieved from duty with the Isthmian Canal Commission, to take effect April 1st, and will proceed to the United States and report to the Adjutant General of the Army for duty. **Truby,** W. F., Major, Medical Corps. In addition to present duties will temporarily assume charge of the medical supply depot, Fort Mason, Cal., to relieve Lieutenant Colonel George D. Deshon, who will proceed to Ancon, Canal Zone, for duty as superintendent of Ancon Hospital.

The following officers of the Medical Corps have been relieved from duty in the Philippine Islands, by Paragraph 3, Special Orders No. 52, War Department, March 4, 1914: Colonel William H. Arthur, Lieutenant Colonel Alexander N. Stark, Major Edwin P. Wolfe, Major Peter C. Field, Captain Thomas C. Austin, and Captain Wibb E. Cooper. Order will take effect on or about July 15, 1914, and on their arrival in the United States will report by telegraph to the Adjutant General of the Army for further orders.

Births, Marriages, and Deaths.

Born.

Levine.—In New York, on Thursday, February 12th, to Dr. and Mrs. L. E. Levine, a son.

Married.

Griffith—Matthews.—In Afton, Va., on Wednesday, February 18th, Dr. R. S. Griffith, of Basic City, Va., and Miss M. M. Matthews. **Hunter—Durham.**—In Charlotte, N. C., on Wednesday, February 18th, Dr. William Myers Hunter and Miss Camille Durham. **Thompson—Pirkle.**—In Marietta, Ga., on Thursday, February 19th, Dr. A. R. Thompson, of Buckhead, Ga., and Miss Flora Pirkle. **Twadelle—Norris.**—In Braintree, Mass., on Tuesday, March 3d, Dr. Joseph J. Twadelle, of Boston, Mass., and Miss F. Josephine Norris.

Died.

Barton.—In Invergrove, Minn., on Saturday, February 21st, Dr. Percival Barton, aged ninety-one years. **Bass.**—In Lowell, Mass., on Friday, February 27th, Dr. William Bass, aged eighty-two years. **Bates.**—In Wheeling, W. Va., on Wednesday, February 25th, Dr. William J. Bates, aged sixty-seven years. **Beck.**—In Minneapolis, Minn., on Saturday, February 21st, Dr. James F. Beck, aged forty-three years. **Blunk.**—In Terre Haute, Ind., on Monday, February 23d, Dr. Adam G. Blunk, aged seventy-two years. **Browne.**—In Gabriel, La., on Wednesday, February 25th, Dr. O. G. Browne, aged fifty-seven years. **Burke.**—In Brooklyn, N. Y., on Tuesday, March 3d, Dr. Francis M. Burke, aged fifty-three years. **Conley.**—In Naples, Italy, on Wednesday, February 18th, Dr. J. E. Conley, of Riverside, R. I., aged thirty-two years. **Dearborn.**—In Minneapolis, Minn., on Thursday, February 19th, Dr. B. Winslow Dearborn, aged sixty-four years. **Dorris.**—In Lincoln, Neb., on Monday, February 23d, Dr. A. H. Dorris, aged seventy-seven years. **Egglestone.**—In Imlay City, Mich., on Saturday, February 21st, Dr. J. P. Egglestone, aged sixty-two years. **Evans.**—In Palestine, Texas, on Tuesday, February 24th, Dr. J. H. Evans. **Fox.**—In Calcutta, India, on Saturday, February 28th, Dr. Frederick Fox. **Fulda.**—In Greenpoint, L. I., on Thursday, February 26th, Dr. Clemens F. Fulda, aged sixty-nine years. **Gieser.**—In Philadelphia, on Thursday, February 26th, Dr. W. R. Gieser, aged fifty-five years. **Grant.**—In New York, on Sunday, March 1st, Dr. Frank Sargent Grant, aged sixty-two years. **Hodgson.**—In Stoneham, Mass., on Wednesday, February 18th, Dr. Mary C. Hodgson, aged seventy-two years. **Holliday.**—In Cleveland, Ohio, on Thursday, February 19th, Dr. Benjamin W. Holliday, aged sixty-six years. **Kinsler.**—In Omaha, Neb., on Friday, February 20th, Dr. James T. Kinsler, aged seventy-one years. **Nafe.**—In Fremont, Mich., on Tuesday, February 24th, Dr. George W. Nafe, aged sixty-six years. **Nixon.**—In Hans Prairie, Mo., on Monday, February 23d, Dr. Thomas Mills Nixon, aged eighty-five years. **O'Malley.**—In Philadelphia, on Tuesday, March 3d, Dr. Joseph O'Malley, aged forty-nine years. **Proctor.**—In Louisville, Ky., on Monday, February 23d, Dr. David Emmett Proctor, of Stanford, Ky., aged forty-four years. **Root.**—In New Haven, Conn., on Sunday, March 1st, Dr. Francis F. Root. **Sawyer.**—In Cornell, Ill., on Tuesday, February 24th, Dr. Henry C. Sawyer, aged sixty-nine years. **Sayers.**—In Wytheville, Va., on Monday, February 23d, Dr. Samuel R. Sayers, aged eighty-one years. **Stevens.**—In Rock Creek, Mo., on Wednesday, February 18th, Dr. William W. Stevens. **Stratton.**—In Philadelphia, on Thursday, February 26th, Dr. Alfred Carty Stratton, of Florence, N. J., aged twenty-four years. **Vincent.**—In Catskill, N. Y., on Wednesday, February 25th, Dr. Stanley Vincent, aged fifty-seven years. **Walker.**—In Los Angeles, Cal., on Tuesday, February 24th, Dr. C. C. Walker, of Gainesville, Texas, aged seventy-years. **Wellons.**—In Four Oaks, N. C., on Wednesday, February 18th, Dr. J. D. T. Wellons, aged eighty-six years. **Williams.**—In Geneva, Ill., on Friday, February 27th, Dr. Theodore Williams, aged seventy-two years.

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FAIRY TALES AS A DETERMINANT OF DREAMS AND NEUROTIC SYMPTOMS.*

Their Relation to Active and Passive Algolagnia.

BY A. A. BRILL, PH. B., M. D.,

New York.

Chief of Clinic of Psychiatry and Clinical Assistant in Neurology, Columbia University.

That fairy tales should play a part in the determination of dreams and neurotic symptoms is not at all surprising when one thinks of their very intimate relation to child life. It is well known that from the very dawn of civilization no child ever grew up without hearing fairy tales; they are found universally among all nations, savage or enlightened, and it is therefore fair to assume that fairy tales play no mean part in the moulding of the young mind.

It is but natural that those who recognize the importance of early impressions as an influence on the future development of morbid states, should be more interested in fairy tales than those who ignore the past in the examination and treatment of neurotic symptoms. Yet it is a strange fact that, with one exception, no psychanalyst has written anything about the direct influence of fairy tales on dreams and neurotic symptoms. To be sure, much has been published about fairy tales, myths, and folklore (1), showing their analogy to dreams and to the symbolization of præcoxes, but it was left to Professor Freud to report some dreams in which fairy tales played a direct part (2). I was pleased but not surprised to read this interesting contribution, as for years I have been gathering material showing these relations, not only to dreams, but to neurotic symptoms, and I shall here report some of my findings.

An unmarried woman of twenty-nine years related the following dream:

I was in a crowd, and when I got away I was followed by a very hideous looking man. I ran and he followed me, and finally caught me. He first said he would choke me, but then decided to cut my head off with a big carving knife. I could see the blood flowing (terrible fright).

Analysis. The dreamer is somewhat masochistic, and, like most unmarried women of her age, she is very anxious to get a husband. The evening before this dream she danced with a man concerning whom she had many intimate fancies. On going home she saw a disgusting looking drunkard. She often dreams of drunkards, for whom she entertains a particular repugnance. Investigation brought out the fact that years before a man made love to her while under the influence of liquor, and owing to his mental state he was quite brutal in his advances. This was the last man who made love to her.

The cutting off of her head recalled Bluebeard, who was "frightful looking on account of his blue beard." This story was read to her long before she herself could read, and it produced a terrible impression on her. As she grew older, Bluebeard was the subject of her night terrors, and at puberty she often had dreams similar to the one just described. The dream is a coitus wish, and shows the mechanism of displacement from below to above (3). Another young woman of twenty-seven years dreamed as follows:

I was with C. (a little niece) in the menagerie, and all the wild animals came out of the cages at the same time. I was terribly frightened, as I felt myself responsible for C.'s safety, and knew that I was powerless to protect her. I held her tightly; from all sides came lions, tigers, and bears. I saw a stairway, and with great effort we worked our way up, followed closely by the animals. After a long time I reached the top of the flight and saw several doors. All were closed, and on trying each in succession I found them locked. I was looking for a key to open one of them, but was still searching when I awoke.

Analysis. This patient suffered from hysteria, and had a terrible disgust for sex. She had had many oportunities to marry, but whenever she thought of marital relations she rejected all her suitors, and on one occasion she even broke her betrothal. This dream occurred after most of her sexual resistances were removed by psychanalysis. The free associations to the different elements of the dream were as follows: Her little niece typified to her purity, innocence, maidenhood, qualities which she attributed to herself, and the wild animals signified the animal passions that were pursuing her. Although consciously she had a horror for the male sex, she was unconsciously very amorous and craved it.

The great effort to reach the top of the stairs signified the mental conflict about marriage, and getting to the top signified the acceptance of normal sex without running away, as she was wont to do. The whole act symbolizes coitus.

The several closed doors which she could not open signify the many opportunities to marry which she let slip. Most of the men who pursued her were no longer single. The locked doors also recalled the story of Bluebeard. She rejected her former suitors because she feared sexual intercourse, especially the act of defloration which was

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pictured to her as "awfully disgusting and very painful." Since the age of puberty she identified this act with being killed, and thought every man a sort of Bluebeard.

In the dream she was looking for a key to open one of the doors. At this part of the dream she recalled the fairy tale of *The Enchanted Princess*, which runs as follows:

A poor soldier saved an enchanted princess by staying three nights in her castle, where a wicked magician had changed her into a bear. After marrying the princess and living happily for some time, the soldier went on a journey to his old home. During his absence all the trees dried and faded. He met with many adventures, but finally the south wind carried him back to the castle where a number of kings and princes were gathered to woo his wife. As soon as he returned the trees revived, but as he was invisible only his wife knew of his homecoming by this sign. So she gave her guests this riddle to solve: "I had a wonderful handmade casket with a golden key to it. I lost my key and never expected to find it; but suddenly the key has found itself. Whoever shall guess the riddle shall be my husband."

All the kings and princes tried in vain to guess it. Then the princess said, "Come out and show yourself, my beloved!" The soldier took off the cap which had made him invisible, and taking the princess's hand, he kissed her. "Here is the key to my riddle," said the princess. "The casket is myself, and the golden key is my husband." All the wooers had to go home with nothing, and the princess and the soldier lived happily ever after. (4)

This fairy tale as an association to the dream is of double interest; first, it explains the meaning of the dream by showing the patient the true state of her mind. She has overcome most of her sexual resistances; she wishes one of her suitors would come back; she is looking for the key; second, it also shows very nicely the symbolization of the male and female genitals by the key and casket, symbols that are often encountered in dreams and myths.

I could cite any number of dreams showing influences of fairy tales, but I will content myself with these two and proceed to show the part played by fairy tales in neurotic symptoms.

Mr. L. is a young man of about thirty years who suffered from a mixed neurosis, his main phobia being a fear of blood. At first he was afraid of seeing blood because it made him faint. Later the mere idea of blood produced the same effect. He was afraid to talk to certain people because they were likely to speak about accidents which would suggest blood. The sight of a man who looked like a doctor was enough to evoke the idea of operation and blood with the accompanying symptoms of anxiety. By a process of generalization and symbolization the idea of blood became projected to almost everything. Thus, measuring his blood pressure brought on a fainting spell. It is not my intention to go into a lengthy analysis of the case. I merely wish to show some of the determinants of the phobia.

At a very early age L. displayed a striking sexual curiosity. At the age of seven years he took a girl to a water closet and practised with her mutual exhibitionism. He was detected by his parents and severely punished. He received much information about sex from street boys, who taught him to repeat many vulgar expressions. At the same age he was circumcised. His father and the doctor took him off the street one afternoon without warning and put him under the anesthetic. When he regained consciousness he found himself bandaged and suffering from pain. At still an earlier age he was instructed by one of his associates that the vagina was like a piece of raw beef with a cut in the centre. Thereafter whenever he ate steak or beef he thought of this association. During the analysis I found many evidences of early impressions from fairy tales. When he was quite young his nurse told him and read to him some of the most gruesome fairy stories, which he continued to read himself at a later age. These bloody and horrible stories made a strong impression upon him. He would form fancies about them on going to sleep at night, substituting himself for the hero. He continued this fancying for years, and as he grew older they were usually accompanied by masturbation. I noticed that his dreams were usually divided into three parts, and investigation showed that this was due to the fact that events in fairy tales usually go by threes. The prince in disguise has to overcome three obstacles and always succeeds the third time. When he became old enough to say his prayers before going to sleep, he divided them also into three parts, each expressing a distinct wish. This was directly determined by the three wishes from his fairy tale. His dreams, too, usually expressed three distinct wishes. As an illustration the following dream will serve:

"I was looking at some field glasses, and there were three pair that looked exactly alike, but they had different prices. Then I was in a room, and it seemed that there was a woman there who had a good many dogs on one chain—all on the same chain—and we had an awful time trying to separate them. (Later addition: They all wanted to bite one another's tails.) I had sexual intercourse with X. and looked into her."

Following are some of the associations with their analyses: The field glasses symbolize sexual curiosity. This is determined by the fact that at the age of eight years he was often very anxious to get his father's field glasses, and whenever his father was absent he went through his private desk and got them. His object was to look into the rooms across the way in the hope of seeing naked women. On one occasion, while looking through the desk, he found a collection of pictures, representing nude females, belonging to his father, which gave him considerable food for sexual fancies. The *three* field glasses symbolize sexual curiosity about his mother, sister, and wife. When a boy he took every occasion to see his mother and sister naked, and since his marriage he displays the same morbid curiosity about his wife. He likes to see her urinate and defecate, and often begs for this privilege. The idea behind his desire always has been, "How does it look inside?" He often looked through the keyhole when his mother or sister was taking a bath, and frequently saw them naked. This association recalled the story of Bluebeard in which curiosity played a great part. He related this story with these distortions. "Bluebeard had three wives; he lived in a castle on the top of which no one was permitted: he carried a large key, spotted with blood; the keyhole was also bloody," etc. The distortions are explained as follows: The three wives were his mother, sister, and wife, whom he often identifies. In connection with this, I would mention a strange coincidence. When we spoke about this identification, he told me that his wife and sister remarkably resembled each other. They look like twin sisters, and are repeatedly mistaken for each other. I will add that they are not at all related. His sister was born on the Pacific coast, while his wife is a New England girl. The resemblance is so marked that even his own and his wife's relatives and his sister's schoolmates often mistake his wife for his sister. I have in my possession photographs of both. I have shown them to many people, but none could positively distinguish one from the other. His sister is the image of his mother.

The bloody key recalled another dream in which the key was a symbol for the penis. This symbol

did not have to be explained to him. He attended a boys' school in Washington, where the boys used to refer to the penis as "nookie." This neologism stood for "new key," and was well known to all the boys. The bloody key and keyhole correspond to his early conception of the female genitals as a piece of raw beef with a cut in the centre, as well as to his circumcision.

Beside the story of Bluebeard, he used to build many fancies on the story of the princess who was rolled in a barrel into which long pointed spikes were driven, and as he grew older he was fascinated by the Iron Maiden, which he saw in a museum and concerning which he wove many fancies. In other words, his sadistic component was markedly accentuated and kept alive by these bloody fairy stories, which later formed the direct connection between blood, cruelty, and sex. There were other determinants—thus the identification with his mother, who was also afraid of blood—but I cannot take them up here.

The other part of the dream—the dogs holding each other by the tail—refers to *fellatio,* which he practised as a boy, and to some homosexual experiences in later life.

Doing things three times and succeeding only in the end, as is so often found in the different collections of fairy tales, has given rise to many superstitions. A nice example was furnished me by the analysis of this dream:

"I saw three long necked bottles. One was almost broken to pieces, the second was cracked, and the third contained sparkling champagne." This dream was given to me by a widow, aged forty-two years. As far back as she remembered all her important affairs of life went by threes. Before her marriage she measured her suitors in this way. She never expected much of the first suitor, she looked with greater favor on the second, and expected to marry the third. The man whom she actually married had to propose to her three times before she accepted him. This number three ceremonial was determined by the fairy stories she used to hear and read since childhood, especially the following one which she consciously took as a model. It is the story of a princess whom her father put in a castle on the top of a very steep glass mountain. The knight who could get up there on his horse was to receive her in marriage. The youngest of three brothers who was considered a simpleton but who was really the smartest of all of them finally reached the top on the third attempt, and married the princess.

This number three ceremonial was really one of her obsessions; for years it was subjected to all kinds of modifications. Thus if she accidentally broke a dish, she had no rest until she broke two more dishes, so that she always had on hand some discarded bottles which served that purpose. Whenever she broke something by accident, she immediately broke two bottles.

We can now understand her dream. The three long necked bottles are symbolic of three men. Her dead husband is represented by the broken bottle; the man who was her lover for years after her husband's death is represented by the cracked bottle, while the third one, containing sparkling champagne, is meant to represent the man who was paying her attention at the time of the dream. The champagne in the bottle is doubly determined; it symbolizes the quality of the man, and is an allusion to alcoholism, to which both were addicted.

With one exception, all the cases showing the influence of fairy tales that came under my notice were usually neuroses or negatives of perversions. The following case is of interest because here the fairy tales and mythological stories directly determine the perversion of sadism.

This patient, a young man, aged twenty-eight years, was homosexual and had morbid desires to bite and stab people and to torture them in all sorts of fiendish ways. He stated that when he felt weak he indulged in horrid, sadistic fancies which gave him strength and vigor. He yearned for those times when everybody carried the dirk and dagger, and could kill when offended. He often carried a revolver, although he never used it. He was fascinated by wild animals, especially the tiger, which always excited him. He spent much time in the menagerie in front of the tiger's cage, and when unobserved by the keeper he would tease the animal in order to see him jump and hear him roar. He was under the impression that he exerted a similar influence on the tiger, and on other wild animals. It seemed to him that the tiger became restless in his presence and grew more ferocious when he looked at him. A fancy which often recurred was the following: "I am annoyed and angered by some one to such an extent that I run wild and bite everybody that comes in my way, until I bite my way, or rather wish to bite my way into some person's body."

Concerning the life of this patient whom we shall designate as L., it may be said that he is somewhat burdened by heredity, that he is of American parentage, and was brought up in cultured surroundings. He always wished to be an actor, and for at least two seasons he was a member of a stock company. Being a delicate child his mother was particularly anxious about him and gave him more care and love than to the other children. Thus he recalled that he often slept with his mother up to the age of eight years, and also at a later age, whenever he was not feeling well. He was precocious and inquisitive, and displayed sexual curiosity at an early age. At the age of six years, he actually forced his mother to tell him some of the true facts of childbirth. He remembers distinctly that he experienced sexual feelings between the ages of four and five years. These feelings were a polymorphous perverse nature, and at first mainly concerned sexual looking and exhibitionism. Even at that age he was morbidly attracted by the male and female naked bodies, especially by the genitals. The objects of his curiosity were the persons of his immediate surroundings. At the age of six years he once caused his little sister to perform *fellatio* on him. He began to masturbate at the age of seven years and continued on and off for some time. At the age of twelve years he began to suffer from the mental conflicts which usually accompany masturbation and which finally caused him to give it up. He never had any heterosexual feelings, and from the age of four years began to manifest homosexual tendencies which gradually developed into true homosexuality. (5)

Very soon after entering into this patient's psychic development I noticed that his symptoms were largely determined by fairy stories, fables, and myths. Thus his sadism and other symptoms unmistakably showed an archaic setting. The associations to almost all his dreams showed how all his inner environments corresponded more to a world as described by Andersen, Grimm, Lang, and others, than to our present times. The following dream fragment with its associations will show this: "On Fifth Avenue with a crowd of people looking at a tiger. Whenever the animal comes my way, I fly up to the roof of a neighboring house."

Associations: Flying recalled that as a child he often entertained many wishes to be able to fly above the clouds among the stars and planets. This recalled his insatiable interest in astronomy at the age of seven to eight years. He used to ask everybody about the stars. He thought that the dog star was a real dog. He was told about the milky way, and thought of it in terms of real milk. At about the same period or even earlier, he was keenly interested in trees. He wanted to know where the sap came from, and very often dug into the ground in order to discover it. The associations then took him back to a still earlier period of his life, when the interest was centred on the bodily functions and on childbirth. After having been told that children grow in the mother, he decided that they must come out like a passage of the bowels. This caused him to take a special interest in the openings of the body (6), such as the mouth, nose and anus, as well as in their gaseous emanations, such as air and

flatus. The interest for mysterious openings was later projected to the outer world, so that he was very much interested in and attracted to caves. While in Sorrento, he made many expeditions to a subterranean passage some distance from the temple of Hercules, which he realized was only a continuation of his childish interest for dark openings. For the same reason he was also fascinated by the human voice. This was at the age of sixteen to seventeen years, and one of his few heterosexual erotic dreams at that age was a stereotyped dream of hugging a woman because she had a beautiful voice. He wondered what took place in those dark places "way down in the mouth, and way up in the anus." He was curious to find out how the child lives in the mother's bowels, how it came out, and wished to go up there to find out all these mysteries. This fancy was facilitated by many fairy stories, especially those concerning the twelve princes who were called One, Two, Three, Four, etc., to Twelve, who went down to the bowels of the earth and then became rabbits and burrowed their way up, and the princes who ran away into the bowels of the earth and met with many strange adventures in goblin land. He gave much thought to food taken into the body. He was curious to know how it disappeared and what became of it. The same interest was shown for the excrements; he would urinate on the ground and then wonder what happened to the urine. As almost all his fancies were centred around his mother, the connection was soon formed between her bowels and the bowels of the earth. Indeed, all his inquisitiveness concerning the earth, trees, plants, sap nourishment, and excretions, simply expressed his struggles with the problem of childbirth and life. He was very imaginative, so that the harrowing adventures enacted by fairies, genii, and Greek deities on which he was constantly fed were deeply interwoven with his own life, and he built up for himself a strange archaic world. He liked to be alone and often wandered away from his companions to act through in his own way the adventures and prayers which he had just heard or read. He himself traced the selection of his profession, that of an actor, to these boyish actions when he tried to imitate the fleet footed Mercury, some character from fairy land, or the Arabian Nights, or some savage Indians. He thus imagined himself flying and beheading monsters above the clouds, or penetrating to the centre of the earth in the form of some wicked magician, all the time passing through the most harrowing scenes. By a process of condensation he fused ancient characters and episodes with persons and actions of reality, but his fancies usually began with some godlike or demonlike myth and gradually descended to human beings. During the first few weeks of the analysis he was in the habit of merging into a dreamy state while reproducing associations, and often became so excited that the work had to be temporarily interrupted. Thus the associations reproduced to the tiger mentioned in his dream were as follows: "A tiger always excites me, I feel akin to the tiger; some people affect me in the same way. My father used to have something of it. My aunt X., who was once crazy, had something of the tiger in her. She had a very strong personality, and was very passionate. At the age of fifty years she married a young man of twenty years. Mrs. C. (a paranoid, elderly person with whom he lived for about a year) had much of the tiger in her, that is why she attracted me so much. But W. (a prominent actress) has more of the tiger in her than any one else." He then went on to say that some one told him that the human fetus passes through many animal stages before birth. That it is at first a dog or a cat, and then develops into a higher animal until it becomes human. He thought that animals represented only arrested developments of man, and that he himself reached to the stage of the tiger. This accounted for his kinship with this beast. The tiger also recalled blood and animal feeling. "The tiger gives me a strange feeling all over the body, especially in the genitals. When I think about him I feel irritable like a caged animal It recalls my aggressive feeling; I feel restless. I see the claws, bloodrending fierceness; it's horrible! (Marked excitement.) I think of flying, I see huge space and stars; they exist and we cannot grasp them. I feel like rushing up and beating my head against the wall. I feel like destroying everything. I think of the tiger's hot breath which I'd like to inhale. I have a peculiar feeling down inside like hot blood surging in me. I feel like a child. I would like to touch the stars. I have a feeling of licking something. I would like to go away up inside of it, or away down into the bowels of the earth to the vegetation and seed, to see where life comes from (early conception of childbirth). A tiger comes from another tiger" (referring to his own birth). He then proceeded to reproduce scenes from his childhood, when he played in the garden where the trees were the object of many fantastic speculations. The trees suggested to him life, and the sap represented vital fluid. He thought of trees as living beings (*Confer* the talking trees in Greek mythology and Æsop's fables). As a boy they fascinated and often excited him to an extent that he desired coitus. This desire came when he felt weak and depressed, and he imagined that coitus with trees would give him renewed vigor. When told to go on with the associations he thought of a graveyard which was near the garden. To quote further: "I thought of the children who were buried there. I can see white bodies, and hear the tolling of church bells. I am a corpse, very cold, *awfully* cold. I feel the moisture coming through the earth and wetting everything. Its dreadfully cold and dreary. I see blood in the white snow as if someone was killed (excitement and trembling). I don't wish to think of it, it's horrible; that licking sensation comes over me. I feel like licking blood. I feel like killing myself, I feel like destroying everything." He stopped for a while and then continued: "I see a beautiful woman with a skull in her hands. I love her very much. She seems to be devoted to the skull. She is underground as if after death—I hear the wind blowing dead, dry leaves; spirits seem to be around. We are in the bowels of the earth where there are the setting sun and stars. I see a stream of very clear water, and she wants to bathe in it. I want to do the same. She is dressed in white, she is very pale with long hair hanging down her back. She now resembles my mother and sister," etc.

This is a fair example of his reproductions. While reciting these and similar uncanny associations he usually became very nervous and excited, so that it frequently became necessary to arouse him from his dreamy state for fear he would do harm. When I went still further into the different components of these associations, I found that they were all explained by some fairy tale or myth. Thus the flying was not only determined by flying fairies, but recalled also the story of Perseus, who undertook an expedition against the Island of the Gorgons, for which purpose he was furnished by Vulcan with a sickle shaped sword; by Mercury, with winged shoes, etc. He vividly recalled the many adventures Perseus encountered; how he rode the flying horse, Pegasus, and how he finally cut off Medusa's head, and so on. The subject of flying always had a morbid interest for him. He very often had dreams and fancies of flying above tall trees and tropical vegetation. As far as I could investigate they were based on the infantile *Allmacht des Gedankens,* when he wished to be big and imitate the heroes of his imaginary world. Later in life he noticed that the flying dreams and fancies usually occurred whenever he was very depressed. They thus served as a compensation for his sorrows or as a refuge from reality. Also, flying above the clouds and high trees is the opposite of going down to the bowels of the earth. The latter were identified with his mother's bowels, i. e., the interior of his mother. At the age of six and seven years, and perhaps even earlier, he often yearned to be back in his mother's bowels. This is confirmed by the contiguous association concerning the children buried in the graveyard, and himself being a corpse. The earth was symbolic of his own mother or mother earth, while the tall trees producing sap symbolized his father. The strangest of all his impulses was sexual union with the

earth. He often put this morbid desire into practice and maintained that it strengthened and invigorated him. The moisture, snow, cold, dreariness, etc., brought back many such scenes from fairy tales and mythology. It also recalled Eva, the heroine in the *Little People of the Snow,* by William Cullen Bryant, who was enticed by the snow fairy and taken to a snow cave where she went through many adventures and was finally found by her parents frozen to death.

The next associations concern the beautiful woman who held a skull to which she was devoted and whom he loved so much. The woman represents a condensation of his mother and his sister, as shown by the woman's resemblance to them. The sister referred to was his senior by a little over a year. As children they were intimate and always played together. He recalled particularly one game which he himself invented. It was called "knockers" and meant that everybody would be knocked on the head and killed—parents, sisters, brother, and everybody else. They would then fancy how they would be the only ones left in this world; how they would marry and have children together and have so much fun. The skull represented himself and his dead father, his mother, and this particular sister, being very devoted to both.

As we have to content ourselves with a small fragment of this strange case, we shall proceed to the following summary: We have here a psychopathic individual of twenty-eight years, somewhat burdened by heredity, who was homosexual and evinced many perversions. His sexual life was infantile in its make-up, evincing polymorphous perversities. When we traced its development we found that it did not follow the normal stages. The inversion began to manifest itself between four and five years, and the sadism at about the same age. These abnormal feelings continued more or less to the age of puberty. He displayed a strong homosexual curiosity throughout his whole life, and sadism cropped up every once in a while in his effort at adjustment. Thus at the age of four to five years he evinced homosexual feelings for his father, and at six years he was passionately fond of a doll, a dark haired boy; he invented sadistic games, knocked down and trampled on little girls while playing with them; and at the age of thirteen years, while attending his aunt's funeral, he was severely reprimanded because he simply could not stop laughing. At the age of puberty and later, his abnormal feelings gradually assumed much greater proportions. He was constantly obsessed with homosexual feelings, had many homosexual affairs, and, although he never indulged in gross homosexual practices, he was continually forced to suppress strong desires for *fellatio.* As far as I could discover, it was his religious and ethical training (fear of the law) that restrained him from putting his homosexual desires in operation. For the same reason he held in check his sadism, his masturbation, and the other partial impulses. Whenever he indulged in masturbation or in sexual looking, he became very remorseful and passed through many religious conflicts. As he grew older there was a regressive revival, or perhaps only an increase in his libido, and he then resorted entirely to fancy formations of a sadistic homosexual nature. These fancies were a substitute for reality, and, as was shown above, served in a manner to gratify his abnormal sexuality.

But beside these fancies, he sometimes indulged in very strange ceremonials. I refer to his sexual impulses for trees and the earth. From what was said above, and from other material not reported here, it is quite clear that we deal with erotic symbolisms which sprang into existence by way of "animism"; that is, like primitive man, he assumed personality in objects. He considered the earth and trees in the light of human beings. This is nothing but a form of archaic thinking, found in the earliest stages of mental evolution among savages (*Confer* the many myths, especially those of the American Indian), and in our times among children and psychotics.[1] Here the tree symbolizes his father, the earth his mother, symbols which sound strange only to the modern mind. In antiquity those very symbols are ubiquitous. The earth or mother earth and the trees are early symbols of the female and the male principles found in the mythology of all races (7). Thus the Latins referred to the penis as *arbor* (tree) (8).

That the patient should have adopted these symbols of antiquity, will not be surprising to those who are acquainted with psychanalysis, and who have followed the various stages that lead to this adoption. Moreover, this becomes clearer if we recall the psychological mechanisms of homosexuality (9), all of which were found in our patient. Thus, although he evinced homosexual desires at an early age, he was not at all indifferent to the charms of women. At the age of fourteen years he entertained an ideal love for a girl older than himself. On one occasion he was in love with a well known actress, and had besides many adventurous experiences with other women. It must, however, be remarked that none attracted him sexually. He was always very much attached to his mother, and as a child he was extremely jealous of his father, so that he could not tolerate any affection shown the latter by his mother. Here, too, his sadism often became manifest; he tyrannized over his mother and had sadistic dreams in which she was maltreated. One dream which left a strong impression on him was the following: "A masculine woman, with yellow hair and black dress, visited my mother in our summer home. She got my mother on the table and nearly beat the life out of her. She caught hold of my mother's hair, and it came off as though it were artificial. I was terrified and pitied my mother very much because she was so gentle. The hair that came off resembled the genitals of a woman."

The masculine woman represents the type of woman of "the tiger variety," whom he admired so much. The yellow color of the hair and the

ordered the sea scourged because his bridges across the Hellespont had been wrecked by a violent storm. Recently I have been present when a child could not be appeased until a chair against which it

Heller & Co; and Jung: Wandlungen und Symbole der Libido.

[2] I am indebted to Dr. Reginald Alfred Allan for calling my attention to the poem, L'Arbale, in *Les Chansons de Bilitis,* which contains a description of sexual congress with a tree.

black dress seem to confirm this association. As the chief actor in a dream is the dreamer, he himself must be the masculine woman who nearly beat the life out of his mother. This becomes more significant when it is remembered that he identified himself with the tiger. The tearing out of the hair which resembled the female genitalia, is explained by the following associations: When he was five years old he displayed a morbid curiosity about his mother's genitalia. He resorted to many ingenious ways until he accomplished his desire. He insisted that his mother allow him to button her shoes, and he also took every opportunity to sleep with her. What impressed him most was the hair. The whole dream represents a sadistic attack on the object he loved most.[3]

It is interesting to note that, at the same period, he had nightmares in which he was run over by steam engines. The same sadistic feeling was later transferred to his symbolic mother, mother earth, concerning whom he talks as follows: "I thought a great deal about the earth; how it absorbed everything. I liked to urinate on it, and then lie down with my penis on the ground. I had a great affection for it. This feeling later changed, and I then wanted to punch the earth and women's genitals." (The last association shows the identification between the earth and the mother.) In addition, he had many open Œdipus dreams.

In brief, the earth and the tree were erotic symbolisms which unconsciously represented to him his own mother and father. The sexual impulses for these inanimate objects were nothing but a return to his infancy when all his love life was centred on his parents, particularly on his mother. Later in life, when this love could no longer be found in the mother, and being unable to obtain it in a normal manner from strangers, he returned to his symbolic mother, and, like the giant Antæus, he renewed his strength every time he touched the earth, his mother.[4]

This case seems to confirm the views expressed by Federn in his instructive paper (10), that "the active components of the sexual impulse are not identical with sadism, but that they can become transformed into sadism only through peculiar psychic mechanisms; that this transformation takes place at a period when the sexual desire is not yet consciously directed toward the accomplishment of the sexual act, but is perceived in a vague, immature, and autoerotic manner as an active sexual impulse with an as yet undeveloped end aim of the sexual activity for the desired object. For the specific sadism can be traced in all cases to the prepubescent, often infantile, period of the individual."

Thus, even in our matter of fact times, it is possible to find a person who, having been surrounded in childhood by a fantastic, unreal world of fairy tales, fables, and myths, develops into a strange being, not unlike a character of the preHomeric period, entirely out of harmony with modern cultural life. There is no denying that this is a unique case, but although I have not seen another psychoneurotic with such a pronounced archaic make-up, I have nevertheless observed many persons who showed the same mechanisms in a lesser degree. I can mention the case of an intelligent business man of fifty years, who could not fall asleep without living through, for at least an hour, sometimes even longer, some distorted story from fairy books or mythology.[5] He vainly tried everything imaginable to rid himself of this disagreeable obsession, which was directly traceable to his childhood when he was read to sleep by fairy tales and similar literature. As he reached puberty these stories became distorted and assumed an erotic tinge, and he then noticed that these episodes were regularly followed by an attack of palpitation, which was worse if he made an effort to abstain from his abnormal fancies. These fancies sometimes obtruded themselves during the day and entirely incapacitated him. I have seen two other adults, both sadistic, who suffered from similar afflictions. In both cases the fairy tales were so distorted as to be almost beyond recognition, but there was no doubt about their origin.

It is in young children, however, where one often sees the evil effects of sadistic fairy tales. Within the last few years I have seen a number of children who were suffering from *pavor nocturnus* and diverse phobias, in whom the symptoms were directly determined by some terrifying fairy story. Thus, a boy of six years suddenly became excitable and anxious, was afraid to sleep alone, and showed many typical attacks of anxiety. Investigation showed that he belonged to those children who are constantly amused by their parents and nurses. He was passionately fond of stories, which were read and told to him for hours daily. His attacks were largely determined by such stories as *Jack the Giant Killer, The Boy Who Did Not Know How To Shiver*, and others of a similar nature. To be sure, the anxiety as such has a different origin, but there is no doubt that the sadistic and masochistic stories helped to generate or to keep alive abnormal sexual tendencies.

Asnaourow reported the case of a boy of five years (11), who was aroused sexually when his nurse told him the story of *Cyrus the Younger*, who caused one of his most distinguished friends to be whipped. This boy later became a homosexual masochist. I have observed a few similar cases of which I shall mention two. A homosexual with sadistic tendencies related to me that as a young boy, probably about the age of six years, he heard the story of Aladdin's wonderful lamp, which immediately became the object of his fancies. On going to sleep he imagined himself the possessor of this omnipotent lamp, and by means of it caused the genii to do his bidding. Most of his wishes had to do with whipping and torturing some one.

Another patient suffering from active and passive algolagnia, with erotic zoophilia for horses,

[3] Professor Freud's Kleiner Hans showed at the age of five years similar conscious sadistic feelings toward his mother, *Neurosenlehre*, dritte Folge, p. 67, Wien, 1913.

[4] [illegible] where the [illegible] was connected with sexual congress: 1. A mild paraphrenic had dreams of having sexual relations with the earth. 2. A young married man suffered from somnambulic states, during which he cohabited with his wife, all the time imagining that he was digging a field or the street. In both cases there was a strong mother fixation.

[5] It is now about two years since this patient was cured by psychanalysis. He has remained perfectly well and shows no trace of his [illegible]

was not only fed on fairy tales of all descriptions, but, at a very early age, was fascinated by Froissart's *Chronicles,* and *Bible Steps for Little Pilgrims.* These books, especially the former, contain many lurid pictures of head cutting, murders, and assassinations by knights on horseback. At the age of six years a little girl appealed to him, and the thought came to him that her head should be cut off. At the age of eight years he had a dream in which he was a knight and his head was about to be cut off.

In brief, psychanalysis of patients often shows the direct harmful effects of sadistic reading material in childhood. This is not to be wondered at when one remembers that pain is intimately related to sex (12).

Beside the patients that I have reported I have seen others who, although showing no algolagnia, are fantastic dreamers, entirely unfit to cope with the stern realities of modern life. Having been imbued in childhood with the omnipotence of the fairy book heroes, they wish to be like them, and later refuse, or find it hard to become plain citizens struggling for existence. Such individuals are constantly wishing for the unattainable, that could only be obtained through some of the charms of fairyland, such as magic boots, invisible caps, Aladdin's lamp, the Garuda stone, and so on. It is therefore no wonder that such persons are unhappy as adults and think themselves out of place among ordinary mortals. Wanke (13) justly asks: "Of what benefit is it for the child to read fairy tales where there is so much about murder and killing, and where human life is treated in the most careless manner, as if it amounted to nothing? What does the child gain by reading about criminal acts which bring no serious consequences on the person perpetrating them?" (14).

Cases such as are here described clearly show the harm that such reading may do.

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55 CENTRAL PARK WEST.

THE ABDERHALDEN REACTION IN PSYCHIATRY.

BY BAYARD HOLMES, M. D.,
Chicago.

A year is passed since the first report by Fauser of the results of a study of eighty insane patients by the defensive ferment reaction, which Abderhalden offered to the scientific world less than two years ago. Never was psychiatry so shaken as by these results, which are still as inexplicable as they are astounding. It is almost incredible that the clinical categories of Kraepelin should have been so fully sustained by the defensive ferment reaction. What the reactions mean in diagnosis it is already possible to assert, but it is not yet given to our conservative and unimaginative civilized mind to picture the fields of research in etiology, therapeutics, and hygiene which it discovers to the race.

There are 200,000 insane in the 400 hospitals of the continental United States. Only about ten per cent. of the 65,000 yearly admissions suffer from a disease which has heretofore been diagnosed by laboratory methods. This small group suffer from syphilis of the nervous system, and are clinically termed "general paretics." With the recent advances in cytological and serological resources and methods—the Wassermann, the Nonne, the Lange reactions and the cell studies—this condition is diagnosed beyond peradventure and with Ehrlich's neosalvarsan given in the vein, in the cerebrospinal lake, and otherwise, there is a show of treatment, if not a cure.

The Abderhalden reaction now furnishes a means of serological diagnosis of dementia præcox, a condition which makes up about one fifth of the admissions. The test differentiates dementia præcox from manic depressive insanity, and from hysteria, which furnish more than another fifth. It is also of great assistance in separating the nonsyphilitic from the syphilitic insanities, and suggests a rational interpretation of many of the symptoms in all forms of psychosis.

The recent report of Wegener,[1] of Jena, of more than 3,000 experiments on 600 patients and controls, is very interesting to every medical man and scientist. Wegener used fundaments or *Substrate* secured from thirteen parts of the body; namely, testicle, ovary, brain, cord, nerve, lung, liver, pancreas, thymus, kidney, adrenal, body, thyroid, and muscle.

The blood in 121 cases of simple hebephrenics contained a ferment that peptonized the albumin of the testicle, if the patient was a male and none of the other twelve albumins. If the patient was a female, the ferment peptonized the albumin of ovary only. These albumins are termed fundaments. The blood of twelve patients in catatonic hebephrenia contained at least two ferments: one peptonized the fundament made from testicle (or ovary) and the other peptonized the fundament of thyroid. Wegener also examined ninety-six hebephrenics with marked dementia. They furnished two ferments; one peptonized the fundament of testicle (or ovary), the other peptonized the fundament made from brain cortex.

Thus we see that all patients with the dementia præcox of Kraepelin exhibit a ferment catabolizing genital glands, while those in catatonia show in addition a catabolic process of the thyroid, and those with marked mental defect present evidence of destruction of brain tissue.

Manic depressive patients and hysterical patients discovered no ferments against any of the thirteen fundaments used by Wegener, nor did eight pa-

[1] Wegener, Erich: Weiter Untersuchungsergebnisse mittels des Abderhaldenschen Dialysierverfahrens, *Muenchener medizinische Wochenschrift,* [illegible], p. [illegible], January [illegible], 1914.

tients with chronic paranoia, and thirteen well persons; sixty-eight in all.

Sixty-one cases of epilepsy examined within eight days of an attack, furnished blood containing a ferment that catabolized brain cortex alone of all the thirteen fundaments; but in the intervals between the attacks the blood was free from any ferment.

The alcoholics (eight patients) and the "melancholics" (twenty-five patients) furnished serums that catabolized the albumin of the liver, and twenty of these, in addition to this reaction, gave reaction to brain fundament, or fundament from one of the other thirteen parts of the body, especially ovary, testicle, nerve or muscle. These scattering reactions are easily interpreted.

In twenty-six degenerative psychoses, the only reaction was to thyroid fundament, except when very asthenic, then to muscle also. In nine cases of exophthalmic goitre; the only ferment peptonized thyroid. The thyroid of Graves's disease is said by some investigators to be more promptly and more positively active than the thyroid of healthy persons.

Six patients with chorea furnished serums containing two ferments, one peptonizing brain, the other nerve fundament. Eight cases of multiple sclerosis did the same. Sixty-seven cases of general paresis and tabes and fifteen cases of tumor of brain peptonized fundament of brain substance and often in addition fundament of the spinal cord. In connection with this, it is well to notice that Theobald found that the fundament made from the cerebella of paretics was more sensitive than any other, that from cerebral cortex next. As the disease progressed, the Abderhalden reaction appears for liver, thyroid, kidney, nerve, muscle, and every part of the body.

The remaining scattering conditions examined by Wegener are each interesting, but need not be cited here. One case of paralysis agitans, however, showed a catabolism of brain, cord, nerve, and muscle.

With these remarkable results of one year's study in Binswanger's clinic in Jena, taken in consideration with the parallel researches of Fauser, Bundschuh, Römer, Bauer, Beyer, Deutsch and Köhler, Fischer, Galla, Hussels, Hauptman, Krafka, Kastan, Leri and Vurpas, Lampé and Papazolu, Maas, Mayer, Moretti, Neue, Oeller and Stephan, Römer, Romberg, Theobald, Urstein, Willige, and others, all of whom confirm Fauser's early demonstrations, we must admit that psychiatry is come into the family of rational medicine.

With an assured objective diagnosis of more than half of all the admissions (by this serological reaction), it is time that the persiflage of psychanalysis and the prodigy of dream interpretation give way to rational research in our psychopathic institutes. Our States that expend so large a portion of their budget on custody, should liberally and vigorously pursue rational mechanistic research.

It is generally recognized that hyperthyroidism and dysthyroidism are secondary to peripheral infectious processes, in many cases at least. The *Dysfunktion*, as Fauser puts it, of the genital glands in dementia præcox is apparently due to a toxemia to which it is secondary. This toxemia is of absolutely unknown origin. Even the large clinical material of our asylums has only vaguely suggested the directions in which research must advance. The study of Graves's disease and the diseases of which glands other than the thyroid are principally involved, has not yet unraveled the pathology to the end. Pellagra, beriberi, the sleeping sickness, and hookworm disease are not yet fully assimilated into our science, partly because of their rarity, but partly because all phases of the problems are not yet solved.

No reports from American, Canadian, or English laboratories on the Abderhalden reaction in psychiatry have appeared, but we can hardly believe that it will be long before this valuable aid to diagnosis, which has become a part of the routine of every obstetrical laboratory, will be utilized by psychiatrists.

108 North State Street.

SCARLATINIFORM ERUPTIONS IN SEPTIC STATES.

By Robert N. Willson, M. D.,
Philadelphia.

The occurrence of nondescript rashes and efflorescences upon the skin surface in the course of the various septic infections is by no means new, nor has it failed of accurate, though not frequent, description. Now under one name and now another, even at times described as intercurrent exanthemata, their etiology has remained in doubt, and the diagnosis of the given case has in many instances been rendered dubious and obscure. I exclude from consideration the eruptions due to drug idiosyncrasies (dermatitis medicamentosa), as in persons peculiarly sensitive to the influence of quinine, belladonna, the bromides, cubebs and copaiba, arsenic, antipyrin, chloral, the salicylates, iodoform, and other medicaments.

Apart from the latter the most interesting and the most confusing phenomenon is that one termed by French clinicians Erythema scarlatiniforme desquamativum. The onset may either be intercurrent in the course of another infection, and appear as a part of the picture, perhaps as its direct result, or the scarlatiniform erythema may constitute by itself an independent clinical entity. The attack is often abrupt and may be ushered in by a chill, vomiting, and by moderately high fever, 103° F., or more. The constitutional symptoms are, as a rule, not severe in proportion to the extent of the eruption and the desquamation which follows. The suggestion is that of an acute infectious disease, though it is not known to be transmissible to others, either by contact or through air borne infection. The skin symptoms may begin in any portion of the body, and follow no given rule, either in their distribution or progress. The rash may be distinctly punctiform or resemble the well developed rash of scarlatina. The tongue is often nearly normal, though the pharynx may be red and deceptive in character. The fauces are seldom swollen, and there is only occasionally seen an exudate or pseudomembrane. Its active stage lasts about a week, and desquamation, which may resemble either that of measles or of scarlatina, is

well under way on the third day. In the severe cases, such as are now reported, the skin may be shed in large pieces, even to the extent of separating casts of the hands and feet, shedding of the nails, and of considerable quantities of hair. The condition is not infrequently recurrent, and, without any apparent explanation, there may be repeated, even periodical attacks. In the first of the following cases it will be noted that there was obtained a definite history of former similar seizures, with few or no signs at that time pointing to pulmonary involvement. Then in the midst of a severe, acute lighting up of an old tuberculous focus recurred the scarlatinal erythema, intercurrent with, and perhaps due to the tuberculous disease. Occasionally a scarlatiniform erythema will follow the injection of an antitoxin or vaccine, even as late as a month subsequently, more frequently about the end of the first week after the injection. The edges of the erythematous area may or may not be strictly limited and defined. In such instances, however, the erythema appears first at the point of inoculation and is often accompanied by edema of the skin of the face and eyelids, and other portions of the body.

The diseases in the course of which scarlatiniform erythema has most often been noted are rheumatism, septicemia, and ptomaine (especially fish and meat) poisoning. The etiology is unknown, but it seems likely that the clinical picture is the result of a distinct toxic influence, and one that acts rather upon the peripheral than upon the central tissues, and especially upon the terminal nervous structures.

Case I. A. T., aged twenty-one years, both parents alive and well, the father an alcoholic. The boy had experienced none of the exanthemata of childhood, and had no serious ailments except a supposed malaria (chills and fever) three years previous to the illness now to be described.

He had a fall when seven or eight years of age in which, he stated, he "cracked his left shoulder blade."[1] Every summer subsequently he experienced irregular chills and fever and sweating, at first every third day, the next summer daily, and so on up to the present time. He was "short of breath" on horseback riding and on climbing stairs. Had had several night sweats this winter. He was first examined by me, February 10, 1910, after a period of comparatively good health. He had never been quite free from a slight cough, and clearing of the throat, but in his own words, "up to about a week ago had felt quite well," then "caught cold." His "chest was sore," he was coughing frequently, and, on the day prior to examination, his nose bled profusely. There was considerable mucopurulent sputum, but no blood streaking had been noticed by the patient. His right apex showed definite signs of consolidation, and a few scattered rales could be heard over the left apex. The right upper chest showed some wasting. His pharynx was red and congested and his "throat sore." Two days later he was much improved, and felt nearly well. During the succeeding few days he was again feverish (96° to 99.4° F.), had several night sweats, and blood appeared in his sputum for the first time. During the next week his temperature varied from 96° to 99.8° F. Usually it ran from 96°, 97° to 98° F., and thereabout. He was then taken to the Presbyterian Hospital, where he remained for four days, in order to obtain a laboratory study, all of which was negative. A week later he had a distinct chill, and, when being taken to the Philadelphia Hospital, became covered with a lobster red eruption on the pharynx, over the face, chest, abdomen, and legs, resembling confluent measles at first, and later scarlatina, or the fourth disease. He felt fairly well, notwithstanding. The temperature averaged 100° to 101° F., the pulse 100 to 120; the chest remained as before. The scarlatiniform eruption was seen by Dr. Jay F. Schamberg in consultation, and we agreed that it was neither that of scarlatina nor measles. The pharynx showed absolutely nothing characteristic and the tongue was atypical. In three days there began an extensive desquamation, large pieces of epidermis coming away from the face, feet, hands, and body. He then manifested all the signs of severe bronchopneumonia in the left lung. In addition, there were signs very suggestive of cavity in the left axilla. Ten days later, his pulmonary symptoms had entirely subsided. The desquamation was nearly complete. The temperature was normal. Suddenly he manifested a scarlatiniform rash, exactly similar to the first (on this occasion he had had quinine, five grains three times a day, for four days). The eyes were deeply injected. The eruption ran the same course as before, the desquamation was of the same type, and a few days later he left the Philadelphia Hospital for the Loomis Sanitorium, the skin still desquamating.

Though treated among numerous other patients, adults, and children, neither patients nor nurses showed any form of contagion, subsequent to his stay in the Philadelphia hospital. Tubercle bacilli were twice found in his sputum while he was there.

Case II. E. R., trained nurse, serving in the eye ward of the Philadelphia General Hospital. I reported her case history in full in the *Journal of the American Medical Association* for September 24, 1910. In July, 1910, she experienced a severe cellulitis and carbuncular eruption of the scalp, following the scratching of a small pimple on the forehead. She underwent a deeply septic course, complicated by bronchopneumonia and by acute myocardial involvement. Twice during the course of her acute illness she manifested a scarlatiniform skin eruption, a pseudomembrane upon the fauces; and once, later on, there appeared (following, though evidently not due to the use of quinine, one grain, three times daily) large wheals, which gradually changed into hemorrhagic areas, some petechial, some extensive, in size. Just before death the body was again covered with the scarlatiniform rash. Staphylococci had been obtained from the pus from her scalp. An autogenous vaccine was made and used once, two days prior to the patient's death. From the abscesses in the heart muscle, the lungs, and kidneys, a pure culture of the pneumococcus was obtained, evidently the infecting organism. Scarlatina did not develop in the infirmary following this case, though no disinfection was attempted.

Case III. S. C. B., trained nurse, in my care in the Philadelphia General Hospital in March, 1913, for a deeply toxic condition, resulting from a frontal sinus infection. When I was first asked to see her, March 20, 1913, she also showed definite signs of a small area of bronchopneumonia in the axilla near the right base. She was stuporous, could be aroused with difficulty, the nuchæ were slightly rigid, the pulse rapid and running, and evidently the patient was in a grave condition. The blood gave a pure culture of streptococcus. The skin was perfectly clear until March 26th, when suddenly it flushed, and within an hour was covered with a general scarlatiniform rash. The pharynx throughout was of an angry red, but there was no membrane present. The temperature since the beginning of the illness had been of an irregular type, averaging 102° F. and thereabout. Three times during the week of her severest illness, a scarlatiniform rash suddenly covered the body, and as suddenly disappeared within a few hours. There was some itching. No drugs had been employed that would account for the phenomenon. The last efflorescence was followed by extensive desquamation, similar to that of Case I. The patient gradually improved, and after a long tedious toxemia of two weeks entered upon her convalescence. Subsequent to leaving the bed she manifested a mild double phlebitis in veins which already showed a tendency to weak walls and varicosity, necessitating the use of elastic stockings before she was enabled to resume her work on the wards.

Case IV. H. L., a trained nurse whom I was asked to see, May 31, 1913, with reference to a rash that had developed suddenly over her body in the course of a probable influenza. The patient ached from head to foot, had sore throat, coryza, a temperature of 102° F., was so sensitive to the superficial touch that she could not bear the lightest physical examination without writhing. When I first saw her, a scarlatiniform efflorescence had for the second time covered the body. About three hours had elapsed between the complete disappearance and the recurrence of the phenomenon. There was intense itching, and here and

[1] There never has existed a definite evidence of a fracture of this bone [illegible]

there were blotches (wheals) suggesting urticaria. No drugs were being taken. The second efflorescence disappeared at once upon the evacuation of the intestines by a generous dose of castor oil. Twenty-four hours later, the eruption appeared a third time, and with it a pseudomembrane formed upon the throat. This rash was also scarlatiniform in type and generally distributed. It vanished as suddenly as it came. In fact, a telephone message to the nurse in charge of the case the next day at the Municipal Hospital elicited the information from her that "there had been no eruption on the body since the patient had been in the hospital." While it was present the back and buttocks and lower limbs were chiefly involved. The posterior pharynx and even the fauces showed a moderate involvement with pseudomembrane.

In the excitement attendant upon controlling a case of possible contagious disease a resident physician called the health authorities, who, without any knowledge of the former occurrences and disappearances of the eruption, pronounced the case one of scarlatina, and transported her straightway to the Hospital for Contagious Diseases, rendering it more than likely that she would contract that which she probably had not—scarlet fever. Extensive desquamation followed, similar to that in each of the foregoing patients, and the patient, like them, proceeded to a full and complete recovery. The health authorities, naturally enough, cannot be convinced that they were concerned with any other than a genuine case of scarlatina.

But having more than once seen other conditions simulate scarlatina in such a way that only the history before and after the acute illness will serve to discriminate, I am confident that she was needlessly exposed to the disease. This patient appears to have been in all likelihood a simple case of influenza, and her skin symptoms may be most easily and rationally explained upon that basis. In the light of the subsequent history, it would be very difficult to defend the diagnosis of scarlatina in such an instance.

It is interesting to note that this patient, as in Case III, had a double femoral phlebitis, six months after her acute illness. She stated that her legs had never been comfortable since that illness, indicating that there may easily have been present a low grade phlebitis from the start.

The foregoing cases serve to illustrate the lesson that never grows too prosy for us to study, though it sometimes seems a difficult one to learn, namely, that it does not pay to be too positive concerning the exact nature of any medical phenomenon, unless one is deliberately inviting a fall for his pride. Of all the drugs that are likely to produce a rash similar in every respect to that of scarlatina, quinine and belladonna are the two chief. A desquamation, quite indistinguishable from that of scarlatina, may follow the use of either. Of all the toxic conditions, influenza and the so called general sepsis, caused by the pneumococcus, streptococcus, or staphylococcus, are the most frequent in deceiving. A visit to the Hospital for Contagious Diseases is by no means free from risk, even to healthy adults, as is evidenced by the very recent death of one of our woman physicians from scarlatina contracted during her daily visits as a student in the wards. Far less is the resisting ability of that patient who has just weathered a long and serious illness. Even more rigid should be the scrutiny, not only of the skin, but of the history of the case, before such a patient is needlessly subjected to exposure that may reverse the swinging of the lever from recovery to an experience with a second dread disease and perhaps a fatal end. Not one of the foregoing cases even simulated scarlatina in any other respect than the visual appearance of the eruption. It would have been next to a crime to have sent any one of them into a scarlatina ward, and yet in one instance that sorry mistake was actually made.

1827 Spruce Street

RELAXED EAR DRUMS.*

Their Symptoms and Rational Treatment.

By Harold Hays, A. M., M. D.,
New York.

It is unfortunate that the treatment of so called catarrhal conditions of the middle ear have been founded upon inaccurate and unscientific principles. We have thought that the patient suffering from a gradually increasing deafness should be treated by means of the Politzer bag, the Eustachian catheter, or a bougie. Of course, suitable treatment of the nose and throat, which parts often show causative factors for the increasing deafness, has frequently been tried, with good results. If such treatment takes place early enough in the course of the disease, or if definite cause can be found for the condition, good results will follow; but most of our cases come to us years after the beginning of the trouble, and we frequently have to treat the result instead of the cause.

The name catarrhal deafness is often a misnomer, and it seems to me that we should classify our cases in a more definite manner. Chronic catarrhal otitis media (O. M. C. C.) is a term used to cover a multitude of conditions, including everything resulting in deafness, let the cause be what it may. It would be far better to differentiate the cases according to the etiological factors.

Progressive deafness may be divided according to etiology as follows: 1. Acute progressive deafness occurring in the course of infectious diseases, or after acute suppuration; 2, chronic progressive deafness associated with chronic suppuration resulting in residual otitis; 3, progressive deafness resulting from chronic catarrhal conditions of the nose and throat extending by contiguity up the Eustachian tubes into the middle ear; 4, progressive deafness due to relaxed ear drum; 5, progressive deafness due to otosclerosis.

That many cases of progressive deafness begin in early life, no one will doubt. I believe that they result from adhesive processes after an acute otitis, which has been relieved, but in which no treatment has been given after the acute condition has subsided. Many children suffering from acute otitis are left with impaired hearing, and it is as important to treat these conditions in children as it is in adults, or perhaps more important. Children will seldom complain of impaired hearing, and unless definite tests are made to determine this, it will go unrecognized until adult life. We should not consider a case of acute otitis in a child cured until we know that the hearing has returned to normal. It is not my purpose to go into the symptoms and treatment of these various conditions, but to point out the prevalence of progressive deafness due to relaxation of the drums—often the result of the usual treatment given for chronic catarrhal otitis.

When the patient first presents himself, stating that his hearing is gradually diminishing, an attempt is usually made to relieve the condition by massage of the drum, either by inflation with the Politzer bag or with the Eustachian catheter. In the majority of these cases we find an obstruction

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in the Eustachian tube, and often the physician finds it difficult to get air to enter into the ears. When such an obstruction is present, the mere passage of air into the ear may relieve the condition for the time being, but it is an evident fact that if too great pressure is used in forcing air into the middle ear, something must give way in order to make room for the air that is blown in. The least resistant part of the middle ear boundary is the drum, and it is self evident that the part that will give way first is this membrane. Such treatment in many cases results in a condition which is more serious than the original one; for where originally we had to deal with an obstructed tube and a slight stiffening of the ossicular joints, now we have to deal with a relaxed drum.

I have little doubt that most cases of progressive deafness occur in the same way, with the exception of those cases in which atrophic rhinitis is present, and in which the atrophy extends up into the Eustachian tubes, leaving them widely open, and allowing too great a pressure upon the drum whenever any extra force is used, either in blowing the nose or in attempting to clean out the crusts and mucus in the nasopharynx.

Too little attention has been paid to the mechanism of the middle ear. We are wont to consider that deafness is almost always due to some alteration in the drum membrane, or to some interference with the proper movement of the ossicles, or to adhesions within the cavity itself, but few of us have considered the great importance of the footplate of the stapes, and the ligament of the oval window, wherein lies the crux of the trouble. It makes little difference what changes have taken place within the middle ear, provided the proper sound waves are conducted through this middle ear by means of the oval window to the auditory nerve; therefore our attention should most carefully be directed toward this part. The best evidence that what I say is true, may be shown by observing any number of patients who have a variety of middle ear changes, which in no way have interfered with their hearing, and where the trouble has been found only during a routine examination.

The patient who comes to us with hardness of hearing as a rule has a progressive condition, which has gone on for years without any symptoms. A chronic inflammatory condition of the nose and throat is present, which has extended up into the Eustachian tubes, the result being a stenosis. The inflammation has also interfered with the proper action of the tubal muscles, and often adhesions have formed in the fossa of Rosenmüller, which further excite the trouble. The patient at first notices merely a stuffiness and fullness of the ears. At this time little change has taken place in the middle ear itself, and often inflation, with proper treatment of the nose and throat, will alleviate the condition, so that it is necessary to see the patient only a few times a year to prevent him from becoming deaf.

It is when the patient is at this stage that most harm is done, either by himself or by a physician who treats him too strenuously. A patient often finds that if he holds his nose tightly and blows hard he can force some air through the closed Eustachian tubes, and thus relieve the feeling of tension; but as time goes on he finds that he has to blow harder and harder, or oftener and oftener, until the inevitable result is that inflation in this way does no good. More often the patient uses his pocket handkerchief to blow out the excess of secretion; therefore we may call this condition pocket handkerchief deafness. If a patient goes to a physician he will often be told to try the Valsalva method of inflation—that is, to close the nose, puff out the cheeks, and swallow. To my mind there is no more harmful practice than this, and one should caution all patients against it. Or the patient goes to some specialist, who thinks that the proper treatment consists in inflating the ear with compressed air, using as much pressure as is necessary to get the desired result—in other words, to use pressure until the physician can hear through his sounding tube the air going into the middle ear. I have known physicians to use as much as fifty pounds' pressure; under such circumstances he has had to keep on forcing air through a narrowed Eustachian tube, until the drum is so relaxed that the patient has become totally deaf. Within a few years, I have had three patients who have become totally deaf by too forcible inflation of the ears.

The majority of otologists, I believe, are wont to consider that almost all cases of deafness are due to a catarrhal condition, causing retraction of the drum or a stiffening of the ossicular joints. Up to a few years ago I had been under that impression myself, and had treated the majority of my cases by the usual methods. It was only after prolonged examination, and by the careful use of an electric otoscope, to which a massage apparatus could be attached, that I began to notice that in many cases of deafness the ear drum, although retracted and thickened, was often at the same time relaxed. I made up my mind to study this situation from every angle until I found to my surprise that at least fifty per cent. of the patients who came to the otologist suffer more from a relaxed drum than from a retracted one. One does not have to be much of a physicist to realize that it is an impossibility for true sound waves to be conveyed through a drum which is diminished in tension. I reasoned (as I have found others have reasoned, too) that a relaxed drum will cause a relaxation of the entire ossicular chain, and that in all probability the ligament of the oval window has lost its tension, and that the hearing of sound waves is interfered with. One peculiar symptom which struck me in many of the cases was, that those patients had paracusis Willisii—in other words, that they could often hear better in a noise than in a quiet room. This had always been one of Nature's paradoxes, and until the present time had not been satisfactorily explained. I believe that this paracusis can be accounted for by the fact that ordinarily the ligament of the oval window is relaxed, but that when there is a great noise the increased tension exerted on the muscles of the middle ear, that is, the tensor tympani and the stapedius, results in a more proper tension being created within that small cavity.

When I first began to observe these manifestations, the question arose as to what could be done to alleviate the condition, and it occurred to me that if some solution could be injected into the mid-

dle ear to excite an inflammatory reaction, we should be able to obtain a twofold result. In the first place, when the inflammation subsided there would be such a stretching of adhesions that the ossicles could more easily assume their former position; and, in the second place, the result of irritation to the drum would tend to draw it more tightly together. I first made these injections directly into the ear by inserting a ureteral catheter through the Eustachian catheter, and injecting various medicaments through this little tube. I first tried fibrolysin in the hope that the direct application of this medicine would have a tendency to dissolve the adhesions. Finding that this was not so, and that any antiseptic solution would do as well, I injected a small amount of ten per cent. argyrol in this manner. In order to ascertain the amount of solution I injected, I applied the sounding tube to my own ear, and measured the amount by observing the sound when the solution first went in, and keeping on with the injecting until the patient felt a sensation of pressure. About 0.5 c. c. was usually sufficient.

Certain definite symptoms were observed after this treatment. Many patients would become dizzy and sometimes nauseated, owing to interference with the labyrinth by pressure on the oval and round windows. Within the course of a few hours a severe inflammatory reaction would set in, which often laid the patient up in bed for one or two days, with fever and pain. A transudation of serum would take place through the drum. Much to my surprise within the course of a few days the discharge would stop, and the patient's hearing would be remarkably improved. The improvement was temporary, however, and I felt myself at a loss how to proceed further.

I was extremely fortunate, a few months later, to receive a paper on this subject from Mr. Heath, of London. Apparently he had been confronted with similar cases, and he, to my mind, has now solved the problem. His paper is a masterpiece which gives a clear and definite idea how to treat this condition in a more or less simple manner. Since then I have employed his treatment with other procedures, which I consider of great value and which I shall now outline.

As I have stated, the principal thing is to bring back the drum to its proper tension and to tighten the ligaments between the ossicles by creating an inflammatory reaction, which, when it subsides, will not have done any particular harm, but at the same time will have created a certain amount of connective tissue infiltration. That no harm is done in attempting a procedure of this sort is mainly attested by the fact that nearly all the patients that I have treated in this way suffered no impairment of the hearing mechanism, and have improved beyond my anticipations.

The success of Mr. Heath's treatment, and the one that I employ, is due to the daily application of irritating fluids to the ear drum, so that it remains inflamed over an extended period of time. It is easy enough to see what will take place as the drum becomes more and more irritated and inflamed. A thickening occurs, which thickening draws on both the circular and straight muscular fibres of the drum, and instead of retraction, the membrane is drawn out until it assumes a more normal position. This tightening is always more noticeable around the circumference of the drum and its attachment to the annular ligament. The joints between the small bones of the middle ear having been more or less ankylosed, as the drum is drawn out, there is a tendency for these joints to loosen up. This lengthens the ossicular chain, with the result that more tension is put upon the ligament of the oval window. Let me say here, that the result we desire in these cases cannot be obtained in a short time. Often it is necessary to have the patient come in daily over a period of six or eight weeks, and this treatment must be repeated at the end of two or three months; and often it has to be repeated again and again during a period of one and a half to two years. One is agreeably surprised at times to find a marked improvement at the end of a month, both in the amount of hearing and the relief of the tinnitus.

It is particularly important in cases of deafness to differentiate between a retracted drum and stenosed tube and a relaxed drum and stenosed tube. I leave out of consideration here the relaxed drum with the open tube, which is an extremely difficult condition to treat.

In order to make the proper diagnosis, I first make a thorough examination of the nose and nasopharynx. All nasal obstructions should be corrected; in many cases adhesions are seen in the fossa of Rosenmüller, either with the pharyngoscope, which I devised some years ago, or with the Holmes nasopharyngoscope. If adhesions are found, they are readily broken down with the finger. The next important step is to determine the patency of the Eustachian tubes. I first attempt to inflate the ear with the Politzer bag. If no air goes into the ear, I next try gentle inflation with the Eustachian catheter. In a large proportion of cases air enters the middle ear not at all, or with some difficulty. In these cases it is not sufficient simply to tighten up the drum, but proper treatment should be given to the tube and middle ear by means of suitable bougies. The next step is to determine the tension of the drum. This is best done by observing it through an electric otoscope, which can be attached to an electric or hand massage apparatus. During the massage one watches the excursions of the drum the whole time. It may be entirely relaxed or only certain portions of it, the other parts being bound down by minute adhesions in the middle ear cavity. As a rule these patients have a positive Rinne test, and paracusis Willisii, and many of them complain of an annoying tinnitus. The hearing with the watch is often negative. Mr. Heath, in these conditions, depends entirely upon the application of an irritating medicament to the drum. But often the tube is closed; this shows the important part that the Eustachian tube plays, and the necessity for its treatment at the same time. He makes use of a preparation of cantharides. The strongest solution is cantharides collodion; the weaker solutions are made up in exact proportions as follows: To one ounce of water is added one grain of cantharides, and one grain of potassium hydroxide; this is called solution No. 1. One half

of this solution is poured into an ounce bottle and made up to the full ounce with glycerin; this is solution No. 2. A similar dilution is made from this for solution No. 3, and No. 4 is made in the same manner. We thus have five solutions which can be used as indicated.

A daily application is made to the drum, extending over a period of four to six weeks, depending upon the amount of reaction that takes place. One starts in with the strongest solution, that is, the cantharides collodion, by applying it to the drum with a cotton tipped applicator. I have found it advisable in all cases to wipe out the canal thoroughly before each treatment with a salve of one per cent. yellow oxide of mercury. If this is not done, some of the collodion is likely to run down into the canal proper and create a blister, which is very painful and distressing. If a blister forms, it is only necessary to prick it with a fine needle or paracentesis knife, let out the fluid, and dry the parts well. Before the second application, the canal is wiped dry and all particles are cleaned off the drum, and the solution can be applied, usually in its full strength, but if too much inflammation is present, one of the dilute solutions is used. The success of the treatment depends greatly upon using proper judgment, and not exciting the drum too much. Thus one must continue watching the drum day by day, and varying the strength of the solution as indicated until one finds a scaling of the superficial epithelium, and a serous discharge takes place. I usually continue the treatment until there is some discharge, and then watch the case, carefully wiping out the serum and débris day by day, being assured in this manner that no harm has been done.

As I said before, I am not content in most of these cases with applications to the ear drum only. If there is a stenosis of the Eustachian tube, I apply a bougie every once in a while to keep the tube open. I may in some instances use the very gentlest of massage. I always caution the patient to be careful about blowing his nose, and under no circumstances to blow hard enough to get air into the middle ear. If I have succeeded in keeping the tube open, enough air enters with the act of swallowing to give all the necessary massage.

I am always careful to warn every patient that during the time of treatment his hearing will be considerably impaired. Many patients become almost stone deaf, and during the first course of treatment are much distressed and sure that they are never going to hear again. One must be continually assuring them that such is not the case, for it is most evident that while the inflammatory reaction is going on very few sound waves can be transmitted through the middle ear. Patients are not so alarmed at the second course of treatment.

The reports of Mr. Heath's cases made me enthusiastic, and I am glad to say that, after trying his treatment for some time, I can corroborate most of his results. Before reporting a few of my own cases I shall give you in detail one case of his which impressed me most:

Case of Doctor P. (Mr. Heath's case). This medical man, aged forty-six years, consulted Mr. Heath in the long vacation of 1908. While in practice, and subsequently, he had frequently taken expert advice. One ear had been useless for twenty-eight years, and the other (while capable of use) had done double duty. The hearing in the latter ear gradually diminished until it failed completely five years ago. He then sold his practice. Mr. Heath's notes make mention of the fact that for two years he had been at Oxford in order to take a degree with the intention thereby of following some other calling. He had all the symptoms described, and was so extremely deaf in both ears that Mr. Heath was compelled to communicate with him in writing. There was also marked nasal catarrh. Both drums were painted for two months with some slight benefit; it just enabled him to hear one shouting into his ear. In May of last year (1909) he returned and was treated for another month. In the long vacation he came again and was treated for two months more. At the end of that period his hearing had considerably improved and conversation was easy. The contraction which followed the later treatment resulted in the restoration of his hearing in both ears.

Without consulting Mr. Heath on the matter, he purchased another practice and resumed medical work after an absence of five years. Though living some distance from London, he came one evening for inspection, and to listen to Mr. Heath's remarks to his students. In addition to the quality of his hearing, which could be tested with watch and whisper, they were able to observe the new fibrous tissue in his drum membrane whereby it had been strengthened. . . . The improvement in his hearing, Mr. Heath observed, would doubtless be maintained, for during the two and a half years which had elapsed since he initiated this treatment no relapses had occurred. He had advised the patient, however, as he advised all patients with this kind of deafness, to desist from the practice of holding the nose tightly when blowing it.

Case I. Mrs. K., aged thirty years, suddenly lost her hearing at ten years of age. When her adenoids were removed, her hearing was considerably improved. For the past ten years her hearing had gradually diminished, although up to two years ago she had had treatment with inflation. Her hearing had gradually grown worse in the left ear. Both ear drums showed relaxation. She heard the watch at two inches in the left ear and three inches in the right ear. Had no paracusis.

I began treatment with her, March 7, 1913, making applications to both drums over a period of six weeks, at the same time opening up the Eustachian tubes. Within ten days the tinnitus had disappeared from both ears, and never returned. She had a profuse discharge from the right ear, which continued for two or three months. I again saw her on October 9th of this year, at which time she had no tinnitus, and heard a watch at ten inches in both ears. She has only had one course of treatment with apparently good results. But I think this is hardly enough for a permanent cure.

Case II. O. B., aged twenty-nine years, consulted me first, April 13, 1912. I found a complete closure of both Eustachian tubes. Her hearing had gradually diminished during the past five or six years. She had a paracusis Willisii, and could not hear the watch up to either ear. There was no improvement after dilating the Eustachian tubes, and at the end of six months I started with applications to the drum.

This patient has gone through three periods of treatment, and I am happy to say that at this time her hearing is considerably improved, and the tinnitus has stopped. She has no difficulty at present with her work as a stenographer, although when she first came to me it was impossible for her to hear what was being dictated to her.

Case III. Mrs. M., aged thirty years, consulted me about six weeks ago. There had been gradual diminution of hearing in the left ear for four years with tinnitus. For the past four months there had been a thick feeling in the right ear. I began applications to the left ear drum, which I continued until two weeks ago, and kept the right Eustachian tube open without making any applications to the drum. Much to my surprise at the end of this time her hearing was considerably improved, until she could hear a watch to the left ear at a distance of four inches and in

the right at twenty. Both ear drums looked stronger and are considerably tighter than before treatment.

It is too early to say definitely what the final results in these cases may be, and I have any number of cases under treatment at present from which I do not expect to hear encouraging news for some time to come. Up to the present time I have treated twenty cases in this manner. One evident fact strikes me—that in no case has any harm been done, and all patients seem to feel better after the treatment is over than they did before they came to me, and are perfectly willing to return. Mr. Heath's cases, which he has had an opportunity to observe for some years, are so encouraging that I feel the utmost confidence in continuing. The treatment is rational and when used by competent men certainly deserves every encouragement.

I have written on this subject at some length because I consider it necessary to differentiate more carefully between the various forms of deafness. It is not sufficient for a man to continue treatment on cases day after day, week after week, or month after month in the same old way, and at the end of a year say that the patient has improved simply because his tuning forks show microscopic improvement. We should strive for greater results than these and should not be satisfied until the patient himself appreciates that his hearing is improved. We should all condemn most heartily the Valsalva method of inflating the ear, and should warn our patients against the danger of using a pocket handkerchief in an improper manner. The result of my experience in the treatment of these cases and in the differentiation of the various forms of deafness, leads me to believe that we are at last getting to the stage where it is possible for us definitely to state to the patient just what we can do for the improvement of his condition.

11 West Eighty-first Street.

THE ETIOLOGY AND TREATMENT OF INFANTILE WASTING.*

By H. Lowenburg, A. M., M. D.,
Philadelphia,
Assistant Professor, Infantile Dietetics, Medicochirurgical College; Assistant Pediatrist, Philadelphia General Hospital.

I take for my subject three cases and draw therefrom a lesson as to the etiology and treatment of infantile wasting.

Case I. L. R., male, aged one year, was transferred from the isolation ward to the Children's Hospital, April 17, 1913, suffering from an unresolved pneumonia and double otitis media occurring as complications of measles. The family history was unobtainable. The infant first came under our care, October 1, 1913, at which time it was much more emaciated than now. Its weight then was 10 pounds 10 ounces. August 12, 1913, it weighed 12 pounds 12 ounces. It therefore lost 2 pounds in a period of two months on account of suppuration. It is still much emaciated as you see. Its skin hung in folds and it was anemic. Its appearance was distinctly marantic. Examination still showed the presence of impaired resonance on the left side and some evidence of chronic pleurisy. To be brief, the diagnosis was that the wasting in this case was dependent upon the suppuration and the pulmonary condition. Digestion appeared good and it retained all food offered. Treatment consisted in a liberal diet of eggs, cereals, broths, buttermilk, containing boiled flour and sugar, and the administration of small doses of codliver oil. Artificial digestants were administered too. Sufficient feeding was ordered, but care taken not to overfeed. The hygiene was improved and plenty of fresh air provided together with inunctions of codliver oil, and an autogenous vaccine made from the suppurating ears was injected every fourth or fifth day. Under this regime the weight increased within the past seven weeks to 12 pounds 12 ounces, an increment of 2 pounds. If this infant could be removed from the hospital and placed in a good home environment its progress toward recovery would be made more rapid.

Case II. G. L., aged six months, male, was healthy at first, weighing 7.5 pounds. It was removed from its mother's breast because of desertion. At present it weighs 5 pounds 6.5 ounces, and as you see it presents all the evidences of extreme emaciation. It is weak, anemic, and its skin hangs in folds upon its body. Its features are senile and wrinkled. Its temperature is subnormal. Its bowel movements are greenish in color, at times yellow, and they contain mucus and curds intermittently. Examination of this infant has revealed no abnormality as far as inflammatory disease of its organs is concerned, nor are there any abnormal changes in its blood. Its chief symptom is wasting. By exclusion the diagnosis of essential marasmus—called by the Germans, *Dekomposition*—has been made. This depends on assimilation of food faulty for this particular individual. The clue offered here for treatment is the condition of its bowel movements. This baby apparently cannot digest cow protein in unchanged form. We will commence treatment by giving it a buttermilk mixture containing cane sugar and cooked wheat flour. This is made by boiling 15.75 teaspoonfuls of cane sugar and 3.75 teaspoonfuls of wheat flour in a quart of water for 20 minutes. After the solution cools, one quart of buttermilk is added. The protein in this mixture will be finely comminuted and the starch and sugar will furnish calories lost by the deficiency of fat. In addition fat will be provided by codliver oil inunctions.

Case III. L. B., female, aged eight months, weighed 7.75 pounds at birth, but did not gain in spite of breast feeding. At the present time it weighs 10 pounds and shows as its main characteristic extreme emaciation. It suffered from vaginitis. For a time it was wet nursed—a dangerous proceeding as we shall see presently in this instance for the wet nurse. Its body is covered with ecthyma evidently due to pediculi which abound. An area about the size of a silver dollar is present in the midfrontal region. This area is reddened and depressed and the edges are well defined. There are a number of openings which exude a gelatinous pus. The digestive organs appear normal. The Wassermann reaction is positive. The diagnosis here is that the extreme emaciation depends upon hereditary syphilis. Therefore the treatment will be mercurial inunctions, and possibly an intramuscular injection of neosalvarsan.

You will see that we have before us therefore three infants ranging in age from six months to one year, in all of whom as a prominent symptom appears loss of weight. This loss of weight has been so pronounced that at first glance all these babies seem to be suffering from the same thing. In each objectively, at least, wasting far outshadows all other symptoms. It is, however, to this very fact that I wish to direct your attention, namely, that wasting in infancy is not a disease, nor does the term, poor indeed, by which it is usually known—marasmus, denote a disease, but a symptom depending upon an underlying etiological factor. Therefore, as physicians it is incumbent upon us to study each case of wasting as it is presented from the standpoint of etiology, in order that we may arrange an intelligent therapy and offer an equally enlightening prognosis. To illustrate further—when we say an infant has marasmus or wasting we say no more

*[illegible] 1913, from the service of Dr. W. C. Hollopeter and Dr. H. Lowenburg.

than the gynecologist says when he states that a woman has menorrhagia or metrorrhagia. These terms signify respectively excessive bleeding from the uterus at or between the menstrual periods, and unless the cause of the bleeding is named, neither the layman nor the physician is any better off for their having been pronounced. This is equally true of the term marasmus when meant to indicate infantile wasting. The term marasmus itself should be used only to designate a depressed nutritional state characterized by a gradual but progressive loss of weight proceeding to emaciation, subnormal temperature, senile expression, and depending upon faulty assimilation of a food ill adapted for the individual fed over a comparatively long period of time. In this condition of decomposition, post mortem there are found neither macroscopic nor microscopic lesions sufficiently characteristic to account for the essential symptoms.

The condition seems to be brought about as the result of some error in body chemistry depending initially upon the abnormal activation of the salivary glands by a food abnormal for the individual. Many theories as to its exact production have been advanced, but none has received universal acceptance. To me it has appeared that the idea embraced in the following presentation may account for the occurrence of these cases. When the adult sees, thinks of, or tastes wholesome food the functional activity of the salivary glands is inaugurated. This phenomenon, commonly known as mouth watering, occurs as the result of pschyic or physical impulses transmitted through the sympathetic or sensory system. It may be assumed that this normal stimulation results in the elaboration of a saliva normal in every respect, prepared to act normally upon a normal food. The bolus, thus prepared, is swallowed. As the result of normal salivary digestion upon normal food, end products, themselves normal in every respect, are formed. The entrance of these normal products into the stomach is responsible in turn for the activation of the glands of the gastric mucosa. These therefore produce a gastric secretion also normal, which, acting upon the partially digested bolus and end products of the salivary digestion, convert the whole into still further normal end products characteristic of this stage of the digestive process. These, entering the duodenum, normally activate the pancreas and the liver, causing these glands to elaborate their secretions in no way perverted. These now continue their action upon the remaining food and end products. The final whole now enters the intestines, the glands of which are stimulated likewise to produce a normal secretion which, again acting upon normal end products, finally completes the process of digestion by the conversion of all remaining food into normal final products which, absorbed by the intestinal mucosa, eventually reach the blood and tissues via the thoracic duct and these, being normal in every way, provide not only for tissue upbuild and downtear, but for growth as well.

Now let us consider the reverse. The mere sight or smell, without the taste of abnormal or unwholesome food (for the individual), not only perverts the salivary secretion, causing an inhibition, but may even cause serious gastric and intestinal disturbance resulting at times in vomiting and diarrhea. In other words, if we substitute the word unwholesome for wholesome and abnormal for normal in the statements of the preceding paragraph we may assume an hypothesis not at all unlikely in its applicability to the etiology of infantile atrophy. Primary abnormal stimulation by an unwholesome food produces the initial abnormal secretion and resulting abnormal end products, which, acting upon the whole line of gastric and intestinal glands are the essential factors causing the production of abnormal secretions and end products at each stage of the digestive process, each abnormal end product being responsible for the initiation of the abnormal glandular activation in each step following. The final product, when the end of the digestive process is reached, is abnormal for the individual—does not nourish him, i. e., not only are downtear and upbuild not secured, but growth is not inaugurated. Therefore the individual feeds upon his own tissues, loss ensues—atrophy, malnutrition, marasmus,—decomposition becomes apparent.

That this is theory cannot be combated; that it may be sustained by clinical facts and circumstantial data, nevertheless, is also true. One common clinical experience is sufficient to warrant its consideration. These cases of atrophy present neither a gross nor a microscopic pathological anatomy, as already stated. No perverted nor diseased state of the gastrointestinal mucosa is discernible. Therefore, the productive element must reside in the food itself. This is borne out by the fact that many children who have run the gamut of formulas, food mixtures, and a score of physicians and pediatrists, who are reduced to actual skin and bone, are commonly revived by the substitution of food proper for the individual. In the majority of instances this food is breast milk or a fortunately thought out milk modification. In other words, the cause and cure of the condition have been determined on the instant from which the infant commences to thrive—the proper food has been substituted to produce normal activation of the salivary glands initially, from which will follow in succession normal activation of stomach, pancreas, liver, and intestines. The end product is correct and upbuild exceeds downtear, the tide is turned, and the infant thrives. The etiology of infantile atrophy is the continuous use of a food faulty for the individual, and its successful therapy consists in finding the proper food for the individual—a responsibility often more readily stated than accomplished, and, yet, withal, the *conditio sine qua non*.

If this conception of essential marasmus approaches the truth, it would appear that the treatment of this condition as illustrated by Case II would consist in finding the proper food for the individual. Comprehensively, in the majority of cases, especially if the infant is under six months of age, this may be stated to be human milk. Where this is unobtainable, a suitable formula must be tried. Time will not permit me to enter into a detailed discussion of artificial feeding. Suffice it to say that the individual must be studied as to his

idiosyncrasies. The first formula is an experiment in the best of hands. If it provides normal yellow stools, from one to four a day, free of mucus, of normal odor and consistence, and if the infant does not vomit and there is a small but appreciable gain in weight, then that food, no matter what its nature or composition, is the proper one for the individual. The prognosis is favorably influenced. If these benign indications do not appear and the case indicates that protein, for instance, is the cause of the trouble, as in Case II, then this element may be temporarily eliminated by whey feeding, or the percentage may be materially reduced, or the formula pancreatized, or use may be made of sodium citrate, from one to two grains for every ounce of milk and cream in the mixture, or the cereal waters, plain or dextrinized, may be employed as diluents, or flour ball may be added to the formula mechanically to divide the curd, or large quantities of protein may be fed, practically comminuted, as provided by buttermilk mixtures or *Eiweissmilch*.

If, on the other hand, fat is the troublesome factor, then dilutions of skim milk may be used or pancreatized milk or buttermilk which is almost practically fat free may be impressed into service or simple dilutions of condensed milk may be temporarily used. As tolerance is established, cream may be gradually added. In all cases fat may be incorporated into the economy by thorough daily inunctions of codliver oil.

Sugar, in my experience, especially if cane sugar or a food maltose is employed, to supply extra carbohydrate, is rarely a cause of trouble. In the event of its being operative, however, buttermilk or *Eiweissmilch* sweetened with saccharin or simple dilutions of whole milk without any addition of extra carbohydrates, may be used. I have not entered into a discussion of the symptomatology of protein, fat, or sugar in digestion, because time does not permit. I have simply indicated that each or all may be responsible for the digestive disturbance determining the marantic state and have pointed out what maneuvres may be employed once the mischief making factor is recognized.

With this conception of marasmus, too, it is clear to you how fallacious is the popular notion that the term means "baby's consumption" and how equally foolish is the fear for which the term is responsible. Wasting, now as you see erroneously called marasmus, may depend, however, upon other factors. Not infrequently tangible or intangible suppuration, notably old unrecognized empyema, especially when it has exhausted the infant to the point where it gives neither fever nor leucocytosis and can be detected only by physical signs, is a common cause. In the same category is found chronic suppuration of the middle ear as in Case I, or old infective pulmonary processes. In these instances, how futile it would be to attempt formula administration alone as conducive to a cure. True, the food should be carefully selected, but this particular infant requires, instead of weak formulas, the character of diet which we have prescribed. In addition, it might be well to administer tonics such as the syrup of hydriodic acid, the syrup of iron iodide or the glycerophosphates. Drainage of the pusbearing cavities must not be neglected.

Case III illustrates that wasting in infants may depend upon syphilis. What folly it would be to attempt to fatten this baby by feeding methods alone! In cases due to syphilis, but in which there are no visible lesions, the Wassermann test will yield reliable information.

Commonly called baby's consumption, wasting in infancy may actually depend upon tuberculosis. Tangible pulmonary lesion, glandular, joint, or peritoneal involvement and the use of the Moro and von Pirquet tests will give reliable information and direct the therapy and prognosis into the proper channels.

A comparatively common cause of wasting in infants, frequently unrecognized and regarded as simple marasmus, is obstructive disease at the pylorus. The main features of this condition, beside the progressive loss in weight, are vomiting, propulsive in character, beginning immediately or shortly after birth; partial or complete constipapation; visible gastric peristalsis and palpable pylorus; delayed progress of the passage of charcoal through the alimentary tract or its total absence in the anal discharges and its appearance in the stomach washings twenty-four hours after administration; and characteristic x ray pictures, showing the partial or complete retention of the bismuth meal in the stomach. These symptoms make up a typical picture of a distinct clinical entity, yet they are often passed by. Many of these cases would end favorably by operation, but are allowed to terminate fatally upon some pet milk formula or an array of proprietary or other foods sufficient to sustain an army. Here a discriminating diagnosis would be life saving. So too we may enumerate other conditions attended by wasting, some amenable to treatment, others not, which are regarded as simple marasmus and treated as such by formula. The three cases which I have presented and the other conditions which I have mentioned are sufficient, however, to impress the lesson that with reference to this particular symptom and in this department of medicine, it is as essential as it is in every other branch of the science, to study thoroughly each case and exhaust its diagnostic possibilities. Without this one will not have done one's full duty by oneself or the patient; with this one will be able to arrange for the proper treatment of the case and be in a position to decide the outcome.

1927 North Broad Street.

THE GYNECOLOGICAL EXAMINATION.*

By Cheney M. Stimson, M. D.,
Philadelphia.

It may seem presumptuous to write a communication on so elementary a subject as physical examination of gynecological patients, especially since the subject is covered so thoroughly in the textbooks, and this communication, which is written only to

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emphasize recognized methods, brings out nothing new. The following methods are used in handling a large number of patients at the gynecological dispensary of the Jefferson Medical College Hospital. By adhering to a certain routine with each patient, time is saved, and usually correct diagnoses are made where failure might otherwise result.

One should not be content simply to place a patient upon the examination table and outline her pelvic organs. History taking is a method about which much has been written, yet it is an adjunct often neglected. With good histories, including especially those of menstruation and parturition, and with a little experience, fairly accurate diagnoses can be made in half the cases on the history alone. So, having taken an accurate history and observed her general condition—the skin, the heart, the lungs, etc.—the patient loosens her clothing, is placed upon the table and draped with a sheet, and the cardinal principles of general physical examination —inspection, palpation, percussion, auscultation— are observed. As the organs of the abdominal and pelvic cavities are so closely related that pathological conditions in one often cause symptoms referable to the other, a diagnosis of intrapelvic lesions should not be made without first examining the bared abdomen and eliminating or locating, as the case may be, anything there which will account for, or contribute toward the condition from which the patient seeks relief.

Much valuable information concerning the abdominal contents can be elicited in a very short time if systematic methods are pursued. Briefly, by inspection, with the patient lying flat on her back, the relative size of the abdomen is observed; its shape often gives valuable information; for instance, the difference between the conical enlargement of pregnancy, the flattened enlargement of obesity, and the nodular enlargement of large multiple fibroids or of multilocular cysts. Careful note should be taken as to symmetry, the condition of the skin, the presence of scars, etc. Palpation shows the consistence of the abdominal wall and the quantity of fat it contains. The integrity of the recti can be determined by laying the hands on these muscles and having the patient raise her head; thus they are brought into a state of contraction, and their action is well demonstrated, diastasis, if present, being easily recognized. Hernial orifices should be palpated, and intraabdominal masses felt for, before proceeding with the examination of the abdominal viscera. In the latter we use the following routine: Stomach, liver and gallbladder, spleen, kidneys, pancreas, appendix region, sigmoid region. These organs and regions are briefly checked up, as it were, for information that will help in making a gynecological diagnosis, and not to diagnose conditions which require for recognition much clinical or laboratory skill, or perhaps hospital study.

By percussing over the normal site of the stomach, one can determine whether or not the area of gastric tympany is enlarged downward; if so, suspicion should at once arise that the patient has gastroptosis, a not uncommon condition in nervous emaciated women. By percussing the liver region, and below the edge of the right costal margin, the size of the liver is determined; and by deep palpation over the gallbladder, inflammation about that organ is recognized. The spleen is palpated for under the costal margin at the left tenth cartilage. Because of the frequency of movable kidney in women, these organs should receive careful attention; the right is the first examined, as it is the one more often at fault. By placing the left hand, palm upward, under the right kidney region, having instructed the patient to flex the legs and thighs, deep downward pressure is made with the other hand at the outer part of the right hypochondriac and lumbar regions; in thin walled and in well relaxed abdomens the lower pole of the normally placed kidney can be felt to move under the fingers during deep inspiratory movements of the diaphragm; if the whole organ, however, can be felt to slip beneath the fingers, so the upper pole can be felt and perhaps pushed lower, we recognize a movable or a floating kidney, and should bear this in mind in summing up our findings. The left kidney is next examined by the same method.

The pancreas cannot be palpated, and about all that can be done is to rule out acute pancreatitis, which causes desperate symptoms to which ordinary pelvic conditions are of minor importance. It is well, however, to bear in mind the presence of such an organ, as disturbances of the upper abdomen are not infrequently due to chronic inflammation or to neoplasms of the pancreas, which require for recognition more elaborate methods of diagnosis. The appendix region should always be palpated, as chronic appendicitis and right tuboovarian disease often exist conjointly; at times either condition alone is hard to differentiate. The presence of pain and tenderness or of a palpable mass should be carefully considered. The sigmoid region, especially during the age incident to cancer, should receive attention, and here also any tenderness or palpable masses should not be ignored unless due to gas or fecal matter in the large bowel, which can be determined by administering a purgative and having the patient return the next day for another examination. Auscultation has not been mentioned. It offers valuable aid in differentiating doubtful cases of complicated pregnancy, as the fetal heart sounds are a certain sign of pregnancy.

Having examined the abdomen, the patient is drawn well down to the edge of the table, and the knees are separated in order that a good view may be had of the external genitalia. Examination is made in the following order: Pubes, labia, clitoris, urinary meatus, orifice of vagina, including hymen, perineum. The pubic hair is noted for the presence of parasites; the skin of the mons veneris and labia for eruptions, scratch marks, and venereal sores. The size and symmetry of the labia are observed, as inflammation and unilateral enlargement of these parts are common. Inflammation may be due to local and to general causes. Induration and excoriation of the vulva always follow long standing pruritus, especially the pruritus of diabetes. Unilateral enlargement of the labia is generally due to cyst or abscess of one of Bartholin's glands, to unilateral vulvitis, and to varicose veins; occasionally

to inguinal hernia descending through the canal of Nuck into a labium majus. Posterior labial hernia is also a possibility. The clitoris should be inspected, especially in young girls, as adhesions of the prepuce to the glans clitoridis cause retention of smegma, which gives rise to itching and not infrequently to masturbation and general nervous disturbances.

The external urinary meatus is examined for discharges; this is done by inserting an index finger into the vagina and milking the urethra by drawing the finger outward along the anterior vaginal wall, when secretions and exudates within the canal appear at the external meatus, provided the patient has not just previously urinated. Smears are taken in doubtful cases for the gonococcus and other organisms. Urethral caruncle is not an uncommon condition and should be looked for, especially where the patient complains of painful micturition and coition; it is one of the most frequent causes of these conditions. These little growths usually exist singly, are bright red in color and are made up principally of vascular tissue, varying in size from that of a pea to a hazelnut. The orifices of Skene's ducts can usually be seen, one on each side, at the lower part of the meatus just outside the urethra. These ducts are often the seat of chronic specific urethritis. Prolapse of the urethra presents a bulging ring through the centre of which a catheter may be passed. The orifice of the vagina is next inspected and the following points noted: Condition of the hymen, whether intact or ruptured; the size of the vaginal orifice; whether or not there is bulging of the anterior or posterior vaginal walls, in the form of cystocele or rectocele, when the patient is instructed to bear down; the orifices of the ducts of Bartholin's glands, one on each side of the vagina, lying between the hymen and the labia minora on an imaginary line drawn transversely across the lower third of the orifice of the vagina; these can be seen normally, and where the glands are involved in a gonorrheal infection, pus may at times be expressed from the ducts. Occlusion of the duct causes abscess or cyst of the gland.

The perineum, next in order, is one of the most important points of the whole examination, as upon recognition of its condition depends greatly the prognosis and successful treatment of a large proportion of the cases. The orifice of the vagina is a fairly good index of the condition of the perineum; when it resembles, in a miniature way, the mouth of a railroad tunnel, with flat floor and arching sides and top, the perineum has been lacerated, although all lacerated perineums do not bear this resemblance, as it is caused usually by lateral lacerations. In women who have borne children, if we follow the old and excellent rule of approximating the lowest edges of the ruptured hymen, the so called carunculæ myrtiformes, reconstructing the hymen as it were, old lacerations can be accurately diagnosed, as all the tissue lying between separated carunculæ was once lacerated, and in the process of natural repair was covered with a layer of squamous epithelium. By inserting an index finger into the rectum and a thumb into the vagina, the perineum can be accurately palpated; by hooking the finger thus introduced against the anterior rectal wall, just inside the sphincter, and making upward pressure against the vagina, rectocele is accentuated and more thoroughly demonstrated. The anus should be examined for hemorrhoids, fissures, fistula, and the surrounding tissue for ischiorectal disease.

In examining the internal genitalia, it may be necessary, in order to secure relaxation, to administer an anesthetic. This should not be done, however, until an attempt has been made without it. In women with sound hearts we use chloroform by the drop method, laying a piece of gauze four layers thick over the nose, the skin having been protected with petrolatum, and we have the patient slowly count; for each number she enumerates she receives a drop of chloroform, and by the time she has counted sixty or so she will generally stop in anesthesia, which will last three or four minutes. After the examination the patient is left on the table about fifteen minutes, when she may get up and go home. We have never had any trouble with this method. Often in virgins, where the hymen will not admit a finger, rectoabdominal palpation can be made successfully, although it is more satisfactory to give these patients an anesthetic and make the examination in the regular way; if the hymen will not admit a finger, and rectoabdominal examination is unsatisfactory, incision of the hymen may be justified, depending on the gravity of the condition. Generally, anesthesia will obviate this, as with pain eliminated, considerable force can be exerted without rupture. When hysteria is suspected, Sippel (1) advocates light anesthesia, just sufficient to do away with normal reflexes, and if it is then possible to elicit a reflex while examining, hysteria can be eliminated.

For examination purposes the cervix is the pelvic landmark, as it is the only part of the uterus that can be directly touched; the index and middle fingers of one hand are inserted into the vagina against the cervix, while the finger tips of the other hand make downward pressure just above the pubes. When, because of modesty, the patient objects to inspection, the examiner may be somewhat embarrassed if he has to fumble to find the orifice of the vagina; this can be obviated by placing the fingers on the perineum and moving them upward until they fall into the vagina. As to which is better, the right or the left hand to insert into the vagina, it is a matter of choice. As Dudley says, the left hand can better palpate the left side of the pelvis, where diseased conditions are more commonly found; this rule applies, however, in using the right hand, as with it the right pelvis can be felt better; so, in some cases it may be advantageous to examine with one hand and then with the other. For obvious reasons, gloves should always be worn. If they cannot be had the examiner should be sure he has no abrasions on the examining hand. By dipping the hands in alcohol, abrasions that might escape the eye can be recognized by the smarting sensation induced in them by the alcohol. Where a discharge appears at the orifice of the vagina, it is best, first, in determining its source, to make a smear, then to insert

a speculum and expose the cervix and make smears from the cervical canal before these parts have been disturbed by digital manipulation.

The size and condition of the vagina are determined while palpating the cervix. The cervix should receive careful attention, especially during the age incident to cancer, and in cases of suspected malignancy a section should be taken for microscopic examination. This is done under an anesthetic, with the same surgical precautions as in plastic gynecological work. The vagina is scrubbed with soap and water followed by an antiseptic solution; the anterior and posterior lips of the cervix are seized with tenacula, and pulled down into view; a wedge shaped piece is removed, which must be sufficiently large to include some of the diseased and some of the healthy tissue. The wound is closed with a few stitches of plain gut, and, if bleeding persists, the vagina is packed with sterile, or iodoform gauze. If the specimen removed is to be examined at once, it can be wrapped in paraffin paper and sent to the laboratory; if not, it can be preserved in an aqueous solution of formaldehyde. Common conditions, such as lacerations, erosions, and Nabothian cysts, should be recognized by palpation. Endocervicitis is recognized by exposing the cervix with a speculum, first cleansing the canal by swabbing with cotton.

Space does not permit details of examination for malpositions of the uterus; whatever its position, one should determine its degree of movability and recognize the presence of adhesions—see whether the organ is movable or fixed. This is where abdominal bimanual palpation comes into use. It is not sufficient simply to make steady pressure with the external hand above the pubes; downward movements transversely and vertically over a considerable area of the lower abdomen are necessary to outline the uterus accurately in all patients. The appendages are next examined by placing the vaginal examining hand, first in the left and then in the right fornix, while counterpressure is made with the external hand. When masses in the posterior fornix are confounded with fecal matter in the rectum, the patient should be instructed to take physic and return the next day for reexamination. It is well to bear in mind that normal ovaries and tubes are difficult to palpate in patients with thick abdominal walls and where there is not good relaxation. An examination of the urine should be made, especially where the patient complains of itching or irritation of the external genitalia, as these conditions are not infrequently due to diabetes.

To recapitulate, the following points deserve consideration in gynecological examinations:

1. Careful history taking.
2. The application of the principles of general physical examination, namely, inspection, palpation, percussion, and auscultation.
3. A systematic examination of the bared abdomen and the abdominal viscera.
4. The examination of the urine for sugar of all patients complaining of a long standing pruritis.

REFERENCE:

Deutsche medizinische Wochenschrift, xxxix, 2, 3, 1913.

1801 Cayuga Street.

ACUTE LYMPHOCYTHEMIA.

By Edward E. Cornwall, M. D.,
New York,

Attending Physician, Williamsburg and Norwegian Hospitals; Consulting Physician, Bethany Deaconesses Hospital, Brooklyn.

Acute lymphocythemia is a sufficiently rare condition to warrant the report of this case. A point, perhaps of only academic interest, is that in its treatment benzol was used, which is the first instance, so far as the writer has been able to learn, of the use of that drug in this acute condition.

Case. The patient, a boy, aged thirteen years, was admitted to the writer's service in the Norwegian Hospital, November 7, 1913, with the following history: Apparently well up to about five weeks ago. Since then complained of pains in joints and other parts of body, and lately, in particular, in left side of chest below axilla. Appetite poor; progressive loss of flesh and increasing weakness. Early in his sickness he was seen once by a physician who prescribed fifteen grains of sodium salicylate, to be taken every three hours for the first day, and after that three times a day. It was not ascertained how long this medication was kept up.

Physical examination on admission: Poorly nourished, anemic, cadaveric looking; no jaundice; eyes sunken; small amount of bleeding from mouth and gums; tongue clean, and small area of ecchymosis on right side of tongue; lungs and heart negative; abdomen moderately distended; area of liver dullness, two inches below normal; spleen palpable, and area of splenic dullness in axillary line as far up as seventh rib; slight enlargement of superficial glands. Examination of his urine was negative; blood pressure, November 9th, systolic, 90 mm. Hg., diastolic, 50 mm.

The von Pirquet test for tuberculosis was negative. Examination of his blood, November 8th, was as follows: Hemoglobin, 30 per cent.; erythrocytes, 1,621,444; leucocytes, 20,900; small lymphocytes, 96 per cent.; polynuclears, 4 per cent. November 13th, hemoglobin, 25 per cent.; erythrocytes, 1,184,000; leucocytes, 53,800; small lymphocytes, 99 per cent.; polynuclears, one per cent. November 14th, hemoglobin, 25 per cent.; erythrocytes, 1,000,000; leucocytes, 55,953; lymphocytes, 99.75 per cent.; polynuclears, 0.25 per cent. November 15th, hemoglobin, 18 per cent.; erythrocytes, 962,580; leucocytes, 60,240; small lymphocytes, 92.5 per cent; polynuclears, 2 per cent.; large mononuclears and transitionals, 5.5 per cent. November 16th, hemoglobin, 18 per cent.; erythrocytes, 987,640; leucocytes, 72,560; small lymphocytes, 93.5 per cent.; polynuclears, 1.5 per cent.; large mononuclears and transitionals, 5 per cent. November 17th, hemoglobin, 17 per cent.; erythrocytes, 1,072,000; leucocytes, 85,000; small lymphocytes, 92 per cent.; polynuclears, 2 per cent.; large mononuclears and transitionals, 6 per cent. November 18th, hemoglobin, 15 per cent.; erythrocytes, 909,333; leucocytes, 145,733; small lymphocytes, 90 per cent.; polynuclears, 0.5 per cent.; large mononuclears and transitionals, 8.5 per cent. November 19th, hemoglobin, 15 per cent.; erythrocytes, 1,080,000; leucocytes, 351,000; small lymphocytes, 98.5 per cent.; polynuclears, 0.5 per cent.; large mononuclears and transitionals, one per cent.

The patient had an irregular temperature which never rose above 102.5° F. while in the hospital. His pulse rate ranged between 110 and 140. His respiration rate was mostly in the neighborhood of 30.

The following treatment was given: Absolute rest in bed; a diet of modified milk, cereal gruels, and fruit juices; one dram of the extract of bone marrow, three times a day; one dram of a solution of peptonate of iron, three times a day; five grains of calcium chloride, three times a day; one ounce of olive oil, three times a day; five minims of benzol, three times a day.

The patient's condition steadily grew worse during his stay in the hospital, and he died, November 20, 1913, apparently of asthenia.

1218 Pacific Street, Brooklyn.

TRACHOMA AND ALLIED CONJUNCTIVAL AFFECTIONS.

Their Diagnosis, Course, and Treatment in New York City.

By H. W. WOOTTON, M. D.,

New York,

Junior Surgeon, Manhattan Eye, Ear, and Throat Hospital; Ophthalmic Surgeon, German Poliklinik; Consulting Ophthalmologist, Willard Parker, Kingston Avenue, and Riverside Hospitals.

To the medical profession it seems hardly necessary to state that the diagnosis of trachoma, except in the cicatricial form, is an exceedingly difficult matter, the more so in view of the fact that the very existence of such a pathological entity as trachoma has recently been doubted.[1] Is there or is there not a specific chronic inflammatory affection of the conjunctiva, frequently accompanied by a characteristic involvement of the cornea, which begins with thickening of the adenoid layer and with localized accumulation of cells of various kinds, which are gradually transformed into granulation and cicatricial tissue? This question has been answered in the affirmative by most of the better known writers upon ophthalmology, and this description of the disease has been regarded as classic. Recent investigations, while not conclusive, have tended to throw doubts upon this time honored theory and to suggest that trachoma, far from being a disease *sui generis,* consists rather of a series of infections, possibly of similar, perhaps of dissimilar character, which, at certain stages, may be recovered from, under treatment or spontaneously, but which, after a certain period, result in cicatricial formation.[2] This theory has a certain amount of fascination. It tends to explain why, although trachoma is on all sides believed to be contagious, no specific organism of the disease has been discovered, despite the most painstaking search. It also coincides with the known fact that trachoma is a disease of no special race or country, but is essentially a manifestation of uncleanliness and insanitary surroundings. A person of ordinarily cleanly habits who contracts, let us say, an acute catarrhal conjunctivitis, and pays proper regard to cleanliness and treatment, is speedily cured and is not liable to immediate reinfection from his surroundings. The case is different, however, with the poor, living, for example, in the hovels of Eastern Prussia. Under such circumstances, an attack of acute catarrhal conjunctivitis would not receive proper treatment. It would assume a tendency to pass into a subacute or chronic state, would infect other members of the family, and would, in turn, be reinfected by them. Thus the irritation caused by the original infection would tend to become more or less continuous and, unless checked by treatment and a change in hygienic and sanitary conditions, would ultimately result in the production of cicatricial tissue. This theory is as difficult to combat as it is to prove, for the reason that until some one has followed and carefully studied a case of conjunctival inflammation from its incipiency to its termination in cicatrization, and this, so far as I know, no one has ever done, we shall never be able to state with authority that trachoma, as a pathological entity, exists.

In New York city trachoma; and by this term the writer means a chronic inflammatory affection of the conjunctiva terminating in the formation of cicatricial tissue, is, for the most part, imported and not indigenous. I say "for the most part" for the reason that cases are occasionally encountered in persons born in this city in which the infection has taken place during adult life. Accurate and continuous observation, for a period of about four years, of some four thousand cases of conjunctival affection, occurring for the most part in children, leads me to confirm the statement of Fuchs that trachoma in children is comparatively a rare disease.

CLASSIFICATION.

The affections of the conjunctiva most common among them and which have from time to time been regarded as trachoma by various authors, may be classified under five headings. In what follows, the writer would define a follicle clinically as a small localized tumor, varying in size from a pin point to a pin head, and situated either upon the surface of the conjunctiva or within its substance.

In the first class of cases, the pronounced follicular type, follicles may be numerous or few. They are situated on the conjunctiva of both lids, but everywhere arise from a *normal* base. The underlying conjunctiva is not thickened and its bloodvessels are perfectly distinct. In the upper, and more especially in the lower fold of transition hemispherical or ellipsoid, yellowish translucent bodies are also discernible. They are less firm than the follicles, are simply an accompaniment of the follicular affection, and may or may not be present. They are also sometimes observed upon the ocular conjunctiva, and are simply dilated lymphatics. This form of conjunctival affection never terminates in cicatrization and is never accompanied by corneal involvement. There is no secretion and the eyes are not injected. It gives no symptoms, even when present in a marked degree, and is harmless. Recent writers have designated this form "folliculosis," reserving the term "follicular conjunctivitis" for the type which follows.

In the second variety, follicles are present as before and the lymphatic dilatations may or may not coexist. The eyes, however, are injected; secretion, for the most part watery, is present, and the eyes appear suffused. A little mucus secretion may also exist from time to time. There is no thickening of the conjunctiva underlying the follicles. These cases would, according to the theory which denies the existence of trachoma *per se,* be capable, unless cut short by treatment, of becoming hyperplastic and terminating in cicatrization. One occasionally, though rarely, sees in children cases presenting at the same time follicular formations, secretion, and pannus. This fact may be held either to support the theory in question or to prove that there *is* such a pathological entity as trachoma, according to the point of view. Those cases with corneal involvement that I have observed, have presented conjunctival thickening, as well as follicular formation, the follicles have been larger than in the cases we are prone to call follicular conjunctivitis,

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[1] [illegible]

[2] [illegible] Research Laboratory, Department of He[illegible]

and the presence of follicular formation deep in the conjunctiva itself has been evidenced by the occurrence here and there of small yellowish infiltrates. Such cases I should classify as trachoma, and, having done so, I would then state that I have never seen a case of *follicular conjunctivitis* terminate in either cicatrization or pannus.

In the third type, the characteristic feature is thickening of the conjunctiva. Follicles may or may not be visible, and when present do not form an essential feature of the disease. The conjunctiva is thickened and red; its bloodvessels are either invisible or obscured; mucopurulent secretion is always present. In these cases the so called *trachoma bodies* of Halberstaedter and Prowazek are so frequently present that they may be regarded as a constant feature of the disease. For this reason, in the early part of the studies upon which this article is founded, they were regarded as trachoma. Long continued observation has convinced me that the natural tendency of these cases, even when unaided by treatment with astringents, is toward recovery after a number of months, and that they never terminate in cicatrization or corneal involvement. My observations would lead me to support the suggestion of Cohen and Noguchi,[3] that they constitute an independent, conjunctival affection, and have nothing whatever to do with trachoma. The term "papillary conjunctivitis," or perhaps "Prowazek's conjunctivitis," might appropriately be applied to them.

The fourth type is rare among children. There is secretion, for the most part watery, and beneath the surface of the conjunctiva, especially of that covering the tarsus of the upper lid, are observed discrete, yellowish bodies about the size of the head of a pin. That these cases may terminate in cicatrization, I consider extremely likely.

The fifth type presents the well known characteristics of cicatricial degeneration and corneal involvement and is acknowledged by all to be trachoma. In favor of the classical theory that trachoma is a disease *per se*, we must not lose sight of the peculiar character of the corneal involvement which accompanies its later stages. No other condition closely resembling it or which is difficult to differentiate from it exists in any other conjunctival affection, and this keratitis has therefore appropriately been designated by a special name, pannus. It consists of an infiltration of small cells between the superficial epithelium and Bowman's membrane, which may gradually invade and destroy the latter. It invariably proceeds from above and is accompanied by vascularization from the adjacent conjunctiva.

Let us now turn for a moment to the consideration of the corresponding conjunctival affections of adults. The pure follicular type (folliculosis) is rare, but when it does occur is no more liable to disagreeable sequelæ than in children. The second type, follicular conjunctivitis in a pronounced form without thickening of the conjunctiva, is also rare in persons over sixteen years of age. Papillary conjunctivitis is found in adults and presents the same characteristics as in children. The terminal stage of trachoma, represented by cicatrization of the conjunctiva and pannus, is much more common in adults than in children, and most of the cases in New York city occur among the alien population, for the most part as the result of infection in foreign lands. These cases are decidedly less frequent in our clinics at present than they were ten years ago, and there can be no question that this desirable state of affairs has been in part due to the strict enforcement by the immigration authorities of regulations prohibiting the entrance of trachoma into this country. The terminal stage of trachoma is, however, occasionally seen in adults who have lived in this city all their lives and who, so far as can be judged from the history, have contracted the disease during adult life. We naturally ask ourselves what characteristics these cases presented in their incipiency and previous to the stage of cicatrization. The immigration authorities, judging from such of their cases as I have been permitted to examine, regard thickening of the conjunctiva, especially that of the retrotarsal fold, as the most characteristic symptom of incipient trachoma. The detection of slight thickening in this location, however, is sometimes a difficult matter and a matter of personal opinion, and for this reason doubtful cases are isolated and observed for a period of some weeks before the final diagnosis is made. If, microscopically, the formation of follicles situated in the substance of the conjunctiva is to be regarded as the essential pathological feature of trachoma, I can confidently state, as the result of the examination of specimens from two cases such as those just described, that the immigration authorities are correct. In other words, an incipient case of trachoma must present clinically thickening of the conjunctiva, with or without the visible presence of follicles, and microscopically must reveal an increase of the adenoid layer and the presence of follicles within the conjunctival tissue.

In general, it may be said that the development of all the forms of conjunctival affection described is favored by uncleanliness, overcrowding, and the absence of proper sanitation. There seems to be no question among ophthalmologists that what they designate as trachoma is directly transmissible from one individual to another, and that what they term follicular conjunctivitis is noncontagious. In regard to the former statement, it must be admitted, however, that the degree of contagiousness of trachoma seems at times to vary greatly, and that this variation does not always seem to be influenced by habits or conditions of living. In making this statement I have in mind the case of a midwife who presented the typical appearances of cicatricial trachoma with pannus. She stated that she had suffered from the disease for sixteen years. The conditions under which she was living were decidedly insanitary, she and her three children occupying three uncleanly tenement house rooms. The eldest child was sixteen years of age and the three children had always lived with their mother, yet not one of these children presented an abnormal lid. On the other hand, I have under treatment at present a man of cleanly habits who is suffering from cicatricial trachoma and pannus. He is about forty-five years of age and, according

[3] Archives of Ophthalmology, [illegible]

to his statements, has suffered from trouble with his eyes for only about two years. He is married and has children. The eyes of the other members of his family present no abnormalities. As further examples may be cited a case of cicatricial trachoma observed in the son of a physician from Texas; another case in the precicatricial stage, that of a lawyer, also from Texas, and, a third, the daughter of a well to do business man, who suffered for years from the disease which, passing into the cicatricial stage, has reduced her vision permanently to less than 20/100 in one eye and 20/70 in the other. These three cases all occurred among people of education and refinement and in each instance no other member of the family was affected. It will be stated that such examples are exceptional and this must frankly be admitted; nevertheless, they tend to show that the contagiousness of trachoma is a variable quantity and may at times be slight. I am informed by physicians living in Texas that trachoma among the adult population is exceedingly frequent and they have ascribed this prevalence of the disease to the heat, lack of rain, and dust. That dustiness of the climate would seem to be a contributing etiological factor coincides with the statements made by E. Treacher Collins[4] in regard to the marked prevalence of the disease in the arid and sparsely populated portions of Australia.

In regard to the noncontagiousness of follicular conjunctivitis, I think the question is at least open to doubt. It is sometimes difficult to say whether one person contracts a disease from another or whether they both contract it from some common cause, and it is stated that the marked prevalence of conjunctival affections of the follicular type, especially among school children, is due to mechanical irritants, such as dust, smoke, etc. It does not seem to me that this theory entirely explains the well known fact that follicular conjunctivitis is seldom seen in a single member of a family. As a rule, and a very general rule, more than one child in a family is affected. It also fails, to my mind, to explain why so frequently in a school room children on a single bench will exhibit the disease to a marked degree, while the other members of the class will be, for the most part, unaffected. I rather am inclined to think that the follicular conjunctivitis of children is contagious, contagion taking place through the medium of secretion.

I desire to emphasize the following points in regard to the *diagnosis* of trachoma: Papillary conjunctivitis is not trachoma. The essential clinical feature in the incipiency of trachoma is thickening of the conjunctiva, which is more readily demonstrable in adults than in children. In children, the type of conjunctival affection presenting localized infiltrates beneath the conjunctival surface may possibly represent one form of trachoma in its early stages.

TREATMENT.

The treatment of trachoma and its allied conditions or, if we please, of those affections of the conjunctiva which are characterized by the formation of follicles or by hyperplasia or by both, and which, by their continuance or exacerbations, may be considered as likely to eventuate in cicatrization and involvement of the cornea, falls conveniently under four headings:

1. Hygiene and prophylaxis.
2. Medicinal treatment.
3. Mechanical treatment.
4. Surgical treatment.

Prophylaxis and hygiene. As trachoma is *almost* invariably associated with overcrowding and insanitary surroundings, it is hardly necessary to state that these conditions should be combated to as great an extent as possible in attempts to eradicate the disease and, if the theory of the dependence of trachoma upon repeated infections is to be adopted even tentatively, such efforts will acquire additional weight and significance. Not alone, however, in the role of prophylaxis are hygienic and sanitary methods to be employed; during treatment good results are obtained by withdrawing patients from an insanitary environment and submitting them to the beneficial influence of modern hygiene. As an example may be cited the excellent results to be observed in the "trachoma schools," situated in the counties of Kent and Essex, England, under the guidance of Mr. E. Treacher Collins, of Moorfields Hospital, London.

Medicinal treatment. Medicinal treatment consists in the application of various drugs, for the most part astringents, to the conjunctiva. When secretion is present in any of the forms of conjunctival affections described above, the use of nitrate of silver or some preparation of the silver salts is indicated. The sulphate of copper pencil has, for many years, been employed in the treatment of conjunctival affections associated with the formation of follicles. Its use in folliculosis and the follicular conjunctivitis of school children is unnecessary. In cases of papillary conjunctivitis it is, I think, of service, and in the true trachoma of adults, after the diseased tissue has been excised, its application to the rim of conjunctiva remaining not only seems to destroy any hypertrophic tissue still existing, but also, by its contact with the cornea through the medium of the tears, exercises a beneficial influence upon corneal complications, if these are present. Tannic acid, in various strengths up to forty grains to the ounce of glycerin, dropped into the eyes twice or three times a day, is also favored by many. In folliculosis and follicular conjunctivitis, the two forms of conjunctival affection in which it is most commonly employed, it is unnecessary. In papillary conjunctivitis its use may seem to be indicated. With powdered boric and salicylic acids I have had no experience. During the active stage of pannus, the employment of atropine is essential and hot applications are also of benefit in this stage of the disease.

Mechanical treatment. By mechanical treatment is meant the various forms of massage and expression. Massage in the early stages of the disease is usually employed after the method of Keining, which consists of frictions with a cotton swab dipped in a solution of bichloride of mercury one to 500. It is not especially painful nor, according to my experience, especially beneficial. In this city it is the routine treatment in some clinics for

the follicular types occurring in school children, a class of cases in which, in my opinion, its use is unnecessary. What action it has, seems to depend entirely upon the degree of friction employed, which is in no way aided by the addition of the solution of bichloride of mercury. Boric acid or distilled water would answer the purpose quite as well. Massage is also employed in the cicatricial stage of the disease as a substitute for surgical procedures. It is generally performed with a glass rod, and is said by those who have used it extensively to be productive of very beneficial results.

Expression consists in the squeezing out of the follicular contents, and has been very extensively practised all over the world in various types of follicular affection of the conjunctiva. It was first performed with the fingers. Later, special instruments were employed for this purpose, the most popular, perhaps, being the roller forceps of Knapp. In the cicatricial stage of the disease, when there are no follicles to express, attempts at expression are, obviously, contraindicated. The estimate of the value of this procedure, which has, in the past, received warm commendation, especially in this country, will be found to vary greatly among those who have had most experience with its use. In those cases of follicular formation accompanied by pannus which are occasionally, though very rarely, encountered in New York, especially in children, expression, in my opinion, is a proper procedure. The vast majority of cases, however, in which it has been employed in this city and, I believe, elsewhere, have been cases of folliculosis and follicular conjunctivitis, occurring in children. In these, expression, except when the abnormal tissue is present in very large quantities, is an unnecessary procedure and one not unattended with danger to the conjunctiva. As the result of a very extensive experience with this method, I feel that I can state most positively that in a long series of cases, even if expression is performed with the greatest care by the most careful operator, a certain number of cases will exhibit permanent adhesions and cicatrices, the latter being especially noticeable in the upper lids. I never have known any especially deleterious consequences to result from adhesions, but I am firmly convinced that when scar tissue is left in the upper lid, a corneal involvement resembling pannus may follow, and I would therefore add to my former statement that follicular conjunctivitis never results in corneal involvement the fact that it may do so after having been submitted to expression.

Surgical treatment. Surgical treatment at the present day follows the Koenigsberg school, and is practically limited to two operative procedures, the combined excision of Heisrath and the tarsal resection of Kuhnt.[5] When properly performed they seem to be without danger to the motility of the eyeball, and if not uniformly successful, constitute our most effective method of treating trachoma in the cicatricial stage, and during the period of corneal involvement. These procedures are more successful in adults than in children. They are absolutely contraindicated in folliculosis and follicular conjunctivitis; in fact, their use should be restricted to those cases in which corneal involvement has already taken place or is impending. When we determine to resort to surgical procedures, we have abandoned any attempt to cure the disease with a restoration of natural conditions. The surgical methods merely anticipate the final termination of the disease itself, with its atrophied cartilage and shallow cul-de-sac, while avoiding years of suffering and the destruction or diminution of vision resulting from the successive attacks of pannus through which the patient must pass before the disease finally comes to an end. No one performs these operations from choice, but rather, as Kuhnt states, through "harkening to necessity."

As the result of the writer's experience, the applicability of these various methods of treatment to the forms of conjunctival affections described is as follows: In the simple cases of folliculosis, without secretion, no treatment beyond ordinary attention to cleanliness is necessary unless it is deemed advisable in cases in which the process is extensively marked, to express the exuberant follicles, but when expression is performed it must be done with a clear understanding that the disease attacked will not eventuate in deterioration of vision and that the operation itself may be followed by unpleasant consequences.

The same observations hold good in reference to follicular conjunctivitis, with the exception that mild astringents may be employed during the period of active secretion.

Cases of papillary conjunctivitis seem to require the use of the silver salts, sulphate of copper, or other astringent. Personally, I have no objection to their use, although my own observation of these cases confirms the statements made by Cohen and Noguchi[6] that they end in spontaneous recovery after a number of months with no treatment beyond the use of a simple cleansing solution, and I have never been able to assure myself that in those cases treated by astringents the duration of the disease was materially shortened. Operative procedures are absolutely contraindicated.

In the stage of commencing cicatrization, the great danger consists in the possible supervention of corneal complications. These occur usually, but not invariably. It is possible for a case of trachoma to pass through the stage of cicatrization to its final termination without, at any time, involving the cornea. In the majority, however, the reverse is the case. As Boldt very truly states, our estimation of the value of a method of treatment must depend largely upon its applicability. Trachoma as a rule, and in New York city almost invariably, occurs among the working classes, who have neither the means nor inclination to pursue any palliative or expectant plan of treatment, and for economic reasons it is necessary to keep these patients in the wage earning class or to replace them in that class as rapidly as possible. It is in these cases, in my opinion, that excision is preeminently indicated, and I firmly believe that in all cases of trachoma in which the cornea has actually become involved, excision should be performed at once.

319 Lexington Avenue.

[5] Kuhnt: *Ueber die Heilung*

THE GRADUATE NURSE.*

Her Relation to Patient, Physician, and the Profession of Nursing.

By R. Hertzberg, M. D.,

Stamford, Conn.,

Surgeon, Stamford Hospital, Lecturer on Anatomy and Physiology, Stamford Training School.

When Florence Nightingale, in 1851, went into training in the Institution of Protestant Deaconesses, at Kaiserwerth on the Rhine, little did any one dream what a tremendous amount of good was to be accomplished by this highly educated and talented woman. In the year 1854, she had already accomplished so much by her organization of the school for nurses at the sanatorium for governesses in London, that the attention of the Government was drawn to her work and she was asked to take charge of the nursing in the war against Russia in the Crimea. She arrived in Constantinople with thirty-four nurses of her own training; and her work is history. She was thanked by a grateful nation for her devotion, and the world hereafter will do her homage. From this beginning the work has spread until no civilized nation is without her hospitals and her nurses.

What, we may well ask, are the requirements necessary for a young woman to become a good nurse and what necessarily are the motives that call her to this work?

A young woman to become a nurse must be physically strong and well; her own health must be good, for without this she cannot stand the strain of her training, nor will she be able to do justice to her work if she herself is a weakling. For, to a patient, good health and with it good cheer in those about him, is in itself a tonic and helps over many a rocky spot. Her education should be at least equal to that of a high school graduate, and in this requirement our training schools are woefully lax. Remember, this young woman whom you are training will have to meet all sorts and conditions of people, and to inspire confidence in her patients she must be able to converse intelligently, write a letter, spell properly, and have a general knowledge of books and current topics past and present; in other words, know enough to make herself companionable and not offend her patients by crudities and ignorance. She should be tactful and willing and be possessed of an unfailing cheerful temper. It is in the lack of tact that much harm has been done by individual nurses to the general nursing body. Patients are cross and cranky, we know; they often want things they cannot have; they make all sorts of unseasonable and unreasonable demands. And here is where a properly equipped nurse shows her ability by her tact in overcoming these difficulties, by an evasion rather than a direct refusal, by an explanation rather than a curt No; yes, even by a substitution or an apparent compliance with the wishes of the patient. This is no time to stand on dignity or rights, the first consideration must be the patient's well being; a rough or careless word, a slighting gesture may turn the tide against the patient, and it is the nurse's duty, first, last, and always, to protect her patient; she must be mother, sister, and nurse all in one until the crisis is past. By the proper employment of tact she will endear herself to her patients in direct proportion to the difficulties she overcomes.

Closely following upon her tactfulness must be her willingness. How often is not the doctor confronted with the statement when he demands the services of a nurse for his patient, "Oh, dear, a nurse makes so much extra work in the house, can't we get along without one?" There must be a reason for this. Nurses are, after all, despite their training, human, and the frailties, which in her training she is supposed to have lost, very often crop out again after a short time away from school. So we find the careless and slovenly nurse, the one who will set a hot teakettle on a polished hardwood floor and burn it black, or who will in a hurry gather up a number of costly hand worked doilies and throw them in a hamper, and wet and soiled clothing on top. This same nurse will not dust her patient's room properly, she will not be careful that the bath water for her patient is of just the right temperature, and in a thousand and one little things (mark you, I say little things, but so big to the fastidious patient) she will antagonize her charge and become a menace to the nursing body at large. Then we have the nurse who does not like work; she will lie abed mornings, give her patient "a lick and a promise" while the breakfast bell is ringing, rush down for her own breakfast while her poor patient, who has probably been awake for hours, has to wait until my lady is ready to bring it, or has the tray set by an ignorant servant girl and taken to the sick room entirely devoid of the graceful touches it should carry. This is the nurse who in changing bed sheets will bring the foot end to the patient's face, who keeps the sick room littered up, who wants this, that, and everything brought to her, who when a shade flies up, rather than get a wooden chair, steps onto a polished one to scratch it or goes through one of rattan. This is the nurse who rather than rinse out the baby's woolen shirt, which costs from one to two dollars, throws it in the general laundry to come back stiff and hard, in fact, spoiled for the want of five minutes' interest and work. This nurse will spot clothes, scratch furniture, ruin carpets, break dishes and crockery, in an endeavor to save herself work, and she builds up a prejudice against the nursing body that is a decided menace. Happily, the proportion of unfit nurses is not great, but it should be less, until she stands in the public eye, not as an added trouble and care to those already under stress, but as a blessing and a help.

Every nurse should strive to the utmost to bring into the homes where sickness has laid its heavy hand, good cheer, an air of dependability, and a disposition to help and aid in every way possible within the limits of reasonableness. By doing this she is working, not only for herself, but for the improvement of the standing of the general nursing body.

The duties of the nurse to her physician are well understood by all properly trained nurses, and I am happy to say but few instances have come to my notice wherein a nurse has failed in these. She

*Read before the Connecticut Association of Trained

should be loyal to the physician employing her, strictly obey orders, and here in justice to herself, should accept only written ones. She should keep all annoying outside details away from the patient, for by doing this she is helping the physician. She should at all times be awake to any changes in the patient's condition and note them at once. She must always be prepared for emergencies and do what she can on her own responsibility until she can get help. In fact, she must be a double bulwark, first between the anxious family and friends and the patient, and then between the physician and the patient, often taking the doctor's place in his absence. By thus doing her full duty by her patient does she become the true assistant of the doctor and regarded as such by him. She must hold herself ever ready for any call and accept calls to rich and poor, for the bane of the doctor and a menace to the profession of nursing is the nurse who won't accept this case because it is contagious, or who doesn't like confinements and won't take them because the baby cries or she might be asked to wash the diapers. Then there is the nurse who will go only to houses where servants are kept; again here is one who only takes twelve hour duty and yet another who hopes she doesn't have to take a case for this doctor or that one. Shame on them, one and all, they are a menace to the general body of nurses and are adding to the general prejudice.

Nursing is hard work, but the girl that takes it up knows that beforehand and in her period of probation she learns what is expected of her, and it is her own choice if she continues; therefore, is it unreasonable to ask her to live up to the rules? No, and for the general good and her own must she be asked to abide by them. As a basis for this demand let us ask, Why do girls take up nursing? Some few for the reason that they want to do good in the world. These are soon disappointed, for generally the will and endurance behind this motive are insufficient to stand the strain of training and therefore they soon abandon nursing. Then, again, some espouse the work because they want to do charity; these if they survive the training are also doomed to disappointment for they will have to learn the lesson that the world accepts a service and values it just a little below what is asked for it. The great majority of girls go into nursing to better their own condition and to secure a profession which insures them a livelihood. If with the latter a little desire to do good and some charity is combined we have the material out of which the perfect nurse can be made.

We now come to the question of compensation. Are her hopes of better condition fulfilled? Does she get a profession by which she can support herself? Are the emoluments adequate? The average mechanic has to serve an apprenticeship of four years, often has to pay a bonus for this, and his earnings are barely sufficient to board him during this period. After the completion of his four years' apprenticeship his earnings are from $2.50 to $3.50 a day for those trades that work the year around, and from $3 to $4 a day for the carpenter and plumber whose work is spasmodic and dependent on seasons. A girl in the training school gets from $6 to $10 a month, her keep and free laundry work throughout the period of her thirty months' training, and then is set free and is instructed to ask $25 a week for her services. Compare this to what a stenographer has to go through to gain her profession. She has to attend business college for a year or more, paying a tuition fee from one to two hundred dollars, boarding herself throughout the year at a minimum cost of $5 a week, totaling for the year $250. This added to her tuition amounts to $350. Beside this she has to dress herself and have a little pocket money. So at the very least the cost of the stenographer's education is five hundred dollars. What is now her earning capacity after she has acquired her diploma? She starts in some office at five or six dollars a week, gradually being raised until she is proficient at perhaps the end of two or three years, and then gets from twelve to fifteen dollars a week, which is considered very good pay. Our nurse gets her training and teaching free of charge and besides gets sufficient money so that, if she is economical, she can dress on it. Truly the comparison is all in favor of the graduate nurse. The profession of music shows even a higher percentage in favor of the nurse. From six to eight years of hard work and numerous costly lessons are required to make a proficient music teacher, and her earnings depend thereafter entirely on her social standing and her individual ability. The average earnings of a good music teacher is not over fifteen dollars a week, year in and year out, and so on throughout all the professions espoused by women and even most of those by men, there is a decided percentage in favor of the earnings of a nurse. The services rendered by a first class competent nurse are worth every penny, and the money is cheerfully paid by those who have been helped and cheered and comforted. Is this sufficient, considering the strenuous service a nurse has to give, and can she save a competence for old age out of her earnings? A good nurse can be busy for, say, ten months a year, this gives her a thousand dollars clear of board. She has to pay out of this $120 to $150 for room rent, $200 for dress, $150 for help, home, and incidentals; this leaves her clear an average of $500. This, if properly invested, in twenty years (as long as she ought to nurse) gives her $10,000, or an income of $500 a year. Now how many girls are doing as well? I venture to say only a small proportion; and where does the trouble lie?

The girl who espouses nursing, as a rule, has come from a modest home where the average total family income does not exceed twenty dollars a week, and often there is a large family to keep. Mother is wise and somehow she manages, keeps her girls nicely dressed and the family is properly cared for in a modest way. Our nurse, after graduation, is suddenly thrown into a house of plenty and at the end of a month has a hundred dollars in her possession, more money than she has ever seen together at one time before. What happens? During her stay she has kept her eyes open, noted all the pretty things the mistress of the house possesses, her heart has grown envious, and gradually a determination has been ripened in her to get these things for herself. So she starts in; if coronation braids are the style, she buys the biggest one she

can get, even if it costs thirty dollars, dresses in the latest fashion and in materials far above her station. She must have silk stockings, hats, and feathers to match, even opera cloaks. In fact, she tries to dress as does the wife of the man whose income is from $10,000 to $25,000 or more a year, and she is trying to do it on twenty-five dollars a week. No wonder that after a time this seems insufficient, but it is simply because she has lost all sense of proportion, has lost sight of the fact that she is a working girl who has become extravagant, and forgets that she cannot keep up this pace and save a dollar for a rainy day. If she is careful, dresses like a lady, and does not ape the fashions brought to America from the back alleys of Paris, she can save from $300 to $500 a year; decidedly more than our mechanic, bookkeeper, or stenographer is able to save or earn. Yet the proposition is being made to raise the rate of nursing to thirty or thirty-five dollars a week. If this is done, what will happen? Exactly what is happening now, with this difference, that our extravagant young woman will spend just so much more on foolish and frivolous things which are expanding her wants and desires to such a point that it absolutely excludes her from becoming a wife in her own sphere of life. For no young man who would marry her, can, and those who could, won't, and she is doomed to a solitary life and to work until she drops in the harness. Not very cheerful when one considers that by retaining a proper sense of proportion she could, after twenty years of work, be independent, if in the meantime she has not attained marriage and her own home. The present rate of fee is adequate for the service rendered, and any attempt further to increase this rate is a menace to the general nursing body and an imposition on the public.

The United States Census Bureau states that out of ninety million people the income tax will be paid by half a million persons. This means that in this whole United States only one man in 180 is getting a salary or earns above $3,000 a year. Now the other 179 also need a nurse at times, because they, too, get sick, and while they can scrape together twenty-five dollars for a few weeks to pay the nurse, even if the doctor has to wait for his fee, yet thirty or thirty-five dollars a week is impossible and cannot be managed, so our patient either goes to a hospital or calls for an untrained or partially trained nurse. And this is the great menace to the nursing body at large; the indolent, careless, indifferent nurse at twenty-five dollars a week, and the competent nurse following her with increased demands, not because she earns it or has further prepared herself by postgraduate study to be worth it, but just because she cannot dress as well as the millionaire's wife. She and her sister are drawing the net around their own heads, for already mutterings are heard in different quarters, and the result of these various impositions will be the establishment all over the country of schools for the training of girls as semiprofessional nurses. These girls will be able to do all that the present nurse is able to do, only they will not be taught didactically as professional nurses have been; their training will be for a period of a year or a year and a half and they will work for from twelve to fifteen dollars a week. The result of this you can easily figure out. The graduate nurse will be called only by the rich, or in severe and very difficult cases; her usefulness will be curtailed and her place taken by the inferior girl, while she sits around to wait for a case.

Now let us see if our nurse is entitled to this increase in salary by reason of increased knowledge or efficiency. Has she taken any postgraduate course of study that renders her more capable; has she studied or kept abreast of the science of dietetics; does she know her food values in order to nourish her patient properly, or does she leave all this to Bridget or Nora? I'll venture to say that those clamoring loudest for more pay belong first and last to the group which Shakespeare had in mind when he wrote these immortal verses:

> Dressed in some little brief authority,
> Most ignorant of what she's most assured;
> Her glassy essence, like an angry ape,
> Plays such fantastic tricks before high heaven
> As make the angels weep.

We have now laid bare the frailties of our weak sisters, let us now turn the page and glance at the impositions that are practised on the nurse and see what her duties to herself are. When a nurse is called to full duty, this does not mean that she is to work twenty-four hours out of the twenty-four. Some people do think this. The nurse should always remember that her health is her largest stock in trade; without good physical health and a clear head she cannot do good work, and if her hours are too long she is doing an injustice both to herself and to her patient. And here she should stand firmly on her rights, if the doctor does not do so for her. She should insist on six to eight hours' sleep and her two hours off each day. Of course, the time arrangement must be flexible to suit all concerned. Fourteen to sixteen hours' duty in the twenty-four is all a nurse should be called upon to perform. If the case is a hard one and the strain promises to last more than a day or two, she should be relieved after twelve hours' duty. She must remember that her health is essential, both to herself and her patient; if she gets tired she cannot do good work, neither can she be cheerful. Then, again, a nurse is sometimes employed by families who cannot afford it, and beside taking care of the patient, they expect her to do the house work. This is an affront to her dignity and her profession, and she should not submit. These patients belong in the hospital and not at home under an expense they can ill afford. Of course, an emergency may arise, such as a servant leaving suddenly or being taken ill; under such circumstances the nurse loses no dignity by helping out, and only endears herself to her patient by her helpfulness.

Often the doctor does not look after the health of his nurse and allows the patients to impose on her. A gentle remonstrance to the doctor in private is the procedure a nurse owes as a duty to herself.

The position a nurse attains in the hearts of her patients is entirely dependent on her own demeanor, judgment, tact, and helpfulness. Nursing

is hard work, but it brings a glorious recompense in thankful hearts if the work is well done, and besides, a good living, and if one is careful, insures an independent old age.

It would seem that a solution of these various difficulties could be reached by the formation of a code of ethics by the nurses' associations, which would regulate a nurse's conduct and state what she must and must not do. A good way, perhaps, would be to have a bureau of ethics where complaints could be lodged, investigated, and properly disposed of. Medical societies subserve this function and no valid objection can be made why nursing should not be regulated in like manner.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXLIII.—How do you treat gallstone colic? (Closed.)

CXLIV.—How do you treat diphtheria? (Answers due not later than March 16, 1914.)

CXLV.—How do you treat alcoholic cirrhosis of the liver? (Answers due not later than April 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The Prize of $25 for the best essay submitted in answer to Question CXLII was awarded to Dr. E. S. McIlvain, of Nashville, Tenn., whose article appeared on page 484.

PRIZE QUESTION NO. CXLII.

THE TREATMENT OF CONSTIPATION.

(Continued from page 540.)

Dr. Julien C. Pate, of Valdosta, Georgia, states:

In the treatment of chronic constipation, one should take into consideration the surroundings, the financial condition, and the loss of time from business. A patient coming to you should be made to understand that it will take at least six to eigh teen months to cure. I am sorry to say that the average physician will begin at once to prescribe strong purgatives for these patients. This should never be done under any circumstances. In doing this, you only add insult to injury. As a rule these patients come to you, telling you of the many physicians who have treated them and of no relief they have obtained.

For the common laborer, I have used the following treatment with little result in the majority, but with some result in a few. Put your patient to bed and put him on rough diet and be sure to force it. The fodder foods are the best to use on account of their bulk. These are given to stimulate the musculature of the alimentary tract. In a few hours, if left alone, these patients will suffer severe abdominal pain. To counteract this, have your attendant use vigorous abdominal massage every few minutes after each meal for the first twenty-four hours, and then four or five times daily thereafter; following each time the course of the colon.

The second and best way to treat these patients is as follows: Put them at once to bed and keep them there. A majority of these patients are toxic and nervous and generally complain of headache. The first thing to do is to give small doses of castor oil every morning for ten mornings. Start them with one ounce the first morning, and then give one half ounce thereafter for nine mornings. Give this before breakfast. At the same time, give your patient hot saline irrigations twice daily, for the first ten days.

After the first ten days, leave off the oil and give the hot irrigations once daily. Be sure to have this hot. Now inject every night about eight ounces of olive oil high into the colon and leave over night. These patients generally have a smooth evacuation the next morning. Now at the same time, start your patient on one teaspoonful of a mixture of cascara and agaragar. Gradually reduce your oil enemas and increase your agaragar until you get an evacuation without the oil enema. I never use electricity, abdominal massage, or strong purgatives at this stage. Be sure that your patient drinks plenty of water.

In regard to the diet, I would suggest that you first examine the stomach contents. If you find hyperacidity, give such food as sweet milk and cheese, if not give acid milk. I suggest that you give these patients plenty of sweet milk, cheese, butter, and some sweets. I also think that it is a good idea to give these patients one teaspoonful of olive oil fifteen minutes before each meal.

I also put these patients in a hot pack both morning and night to reduce the tension, also give small doses of bromides for about two weeks, gradually reducing this. After you have reduced the tension, leave off your hot packs in the morning, and only give a tepid pack at this hour, with the hot pack at night as usual. As the treatment continues, leave off the night pack and only give a cold pack each morning

For the gas that these patients generally complain of, I generally give a prescription of asafœtida, charcoal, and capsicum. If the patient is anemic, he gets some form of arsenic and iron. You must be sure to eliminate all foods containing high proteids, such as meats, eggs, etc. The result of this procedure seems miraculous.

Dr. Charles A. Covell, of Syracuse, N. Y., remarks:

For the purpose of treatment the underlying causes may be divided into two classes, those in which the functional and those in which physical causes predominate. Among the latter we have lacerated perineums, hemorrhoids, strictures and adhesions, flabby abdominal muscles, and ventral hernia.

Any physical obstruction should be carefully sought out and remedied by surgical treatment. Lacerations should be repaired. Hernia should be fitted with a truss or repaired by operation. Fis-

sures and fistula should receive appropriate care. A contracted sphincter should be dilated, using dilators of increasing size until the largest is inserted with ease. I have seen many cases of obstinate constipation end in recovery with the dilatation of the sphincters as the only treatment. It is well known that anal dilatation brings about far reaching effects through the sympathetic nervous system.

Any standard work on physiology explains the mechanism of defecation. The abdominal and chest muscles enter into the act very largely. This was called to my notice, by observing that many of my patients were much better when on hunting and camping trips, and defecation was practised in the squatting position. Specially constructed toilets or a shallow vessel over which the patient can squat, enables the patient to keep up the same method when in town.

For diet, a large amount of liquid and coarse food should be ordered. For the individual of ordinary weight at least two quarts of water, in addition to the other liquids, should be taken daily. One of the coarse and succulent vegetables, as corn, string beans, turnips, peas, cabbage, parsnips, lettuce, beets, spinach, should be a dish at one meal during the day. Corn meal made into various dishes, and brown bread should be in the regular diet.

The habit of visiting the toilet at a regular time each day should be insisted upon. Ordinarily the most convenient time is directly after breakfast. A glass of mineral water, either natural or artificial, taken hot before breakfast, usually acts at this time: it should be used in sufficient quantity to produce results. Later it may be superseded by plain water taken at the same time. Cascara is a tonic stimulant to the muscular coats of the bowels, and should be given after meals; in many cases it will operate in diminishing doses. I usually give tablets uncoated containing five grains of the extract, one after each meal, for a few days, and as the action becomes too severe, break the tablet in halves and give two and one half grains as before, and again divide the tablet into quarters as necessary. To get results it must be given three times a day and never in one dose at night.

To retain the patient and to move the bowels while a cure is being effected, it is necessary to use some kind of a cathartic. A compound cathartic pill at night, four or six grains of blue mass where the tongue is coated, or a saline before breakfast meets these indications. If the cathartic fails to move the bowel at the intended time, results should be furthered by a rectal enema, or a glycerin suppository.

Liquid petrolatum, bran bread, spinal vibration, deep breathing so as to exercise the abdominal muscles, massage of the abdomen, either by an operator or self massage by means of a wooden ball rolled over the abdomen, have assisted toward a cure in some of my cases in conjunction with other means.

Chronic constipation is a complicated disease, often obscure in origin, and kept up by the habits and general mode of life of the patient. These should be carefully studied and corrected. Unless this is done no permanent cure can be hoped for.

Dr. Stanley B. Doyle, of Brooklyn, New York, writes:

The physician, not being content to order purgatives which at the best give only temporary relief and soon lose their power, outlines a course of treatment similar to the following:

1. *Exercise.* Much may be done by regular habits, and the desire to defecate should always be granted. Exercise in moderation is helpful, and by far the most useful is riding, which stirs up the abdominal secretions, increases the flow of blood to the viscera, and stimulates the nerve plexuses in a way which no other form of exercise can do. Abdominal massage, either by a professional masseur or by the use of a massage ball, will be of use to persons who are inclined to be stout or those having pendulous abdomens.

2. *Diet.* The diet of the patient must be such as to contain a large amount of residue—that is, after digestion enough matter must be left free in the intestines to stimulate the wall as it passes over the mucous membrane. Bran bread, green or canned corn, and fruits are very useful in this regard. Coffee and tea should be eliminated from the diet because of their constipating action. A glass of hot water on retiring or a glass of cold water on arising will often be beneficial.

3. *Operative measures.* When the constipation is due to hernia, stricture, uterine or ovarian tumors, or to oft repeated pregnancies it is often relieved by operation.

4. *Drugs.* Purgative salts, castor oil, mercury, jalap, and rhubarb are useless in chronic constipation. Castor oil is notoriously bad, and purgative salts often bring on a grave anemia when used constantly. They should be used only to unload the bowel or when there are irritating substances to be swept out of the bowel. Of the curative laxatives none compares with the aromatic fluid extract of cascara sagrada, either alone or combined with the tincture of nux vomica and fluid extract glycyrrhiza. It produces almost no griping and is the only drug which alone moves the bowels and at the same time tends to make future passages more easy and regular. The two other drugs in this same class are aloes and podophyllum, which should always be given with other nonpurgative drugs to prevent griping, as:

A.

℞ Aloes, ...grs. xii;
Extracti belladonnæ, ...grs. iii;
Extracti nucis vomicæ, ...grs. iii;
Extracti physostigmatis, ...grs. ii.
M. et ft. pil. No. xii.

B.

℞ Resinæ podophylli, ...grs. iii;
Extracti belladonnæ, ...grs. iii;
Extracti nucis vomicæ, ...grs. iii;
Extracti physostigmatis, ...grs. ii.
M. et ft. pil. No. xii.

Enemata are not to be used, except in constipation with a contracted bowel, when olive oil and glycerin will be of service. Glycerin is best employed when used in the form of a suppository.

In the treatment of constipation due to anemia, chlorosis, and neurasthenia, I have found hypodermic injections of the solution of arsenate of iron to give good results. Constipation due to lead poisoning

when this is chronic, will often yield to opium when all other drugs fail. In some men a cigar is often a specific as a laxative.

Dr. T. Leavy, of New York, maintains that:

The most desirable treatment for chronic constipation is the reestablishment of the natural power of evacuation. This may often be accomplished more by instructions than interference. Most essential is the formation of the habit of regular evacuation of the bowels at a certain time of the day, whether prompted by inclination or not. This should be done preferably at a certain hour in the morning except in local rectal diseases, where retention of fecal matter in the lower bowel may cause irritation and reflex constipation. In such cases an hour in the evening should be selected. A support placed under the feet while at stool will relieve tension on the abdominal muscles, and during their contraction will aid in expelling the contents of the intestines.

One of the most important auxiliaries toward establishing the natural power of evacuation, is proper exercise, especially in those of sedentary habits. The form of exercise should depend on the physique and general condition of the patient. Home gymnastics, walking, or riding may suffice in the ordinary case, whereas in the more vigorous, rowing, swimming, tennis, or pulley weights may be used. Passive exercise and massage may also be used and the patient may be instructed in the kneading of the abdominal muscles in the direction of the colon.

The diet has the most marked influence upon the normal activity of the bowels. The foods which exert an influence in cases of constipation are those which furnish considerable residue, such as coarse cereals, bread made of coarse flour, bran or gluten vegetables, fatty foods, fresh or stewed fruits containing seeds, honey, and carbohydrates. The administration of water in increased amounts at regular intervals, especially a tumblerful of cold water before breakfast, is often the ideal laxative. Astringent liquids and those containing tannic acid, such as tea, sour juices, and acid wines are to be avoided.

Electricity and hydrotherapy may be used to supplement the means for natural defecation. The application of the faradic or the interrupted galvanic current may be employed. A daily cold bath, cold sprays, or wet compresses to the abdomen will aid in the general toning up of musculature, especially that of the abdomen.

The medical treatment is perhaps the most difficult, since the condition of each patient must be thoroughly investigated. It should be resorted to only in conjunction with or after the foregoing methods have failed. Among the best and milder cathartics, and one that can easily be regulated and controlled is cascara sagrada. Its action does not increase that tendency toward constipation. The dose depends on the individual, usually half to one dram before retiring or repeated on rising. Its action may be accelerated by the addition of aloes or its active principle, and either one may be combined with one of the correctives of digestion, namely nux vomica, belladonna or physostigma, e. g., aloin grain 1/5, strychnine sulphate grain 1/60, extract of belladonna grain 1/8, one pill, three times a day. In acute exacerbations, calomel in broken doses is our old standby. The compound jalap powder may also be used, either alone, or with a single dose of calomel. In many cases, the salines, such as sodium phosphate, magnesium sulphate, or Rochelle salts are the best cleansing laxatives. In spastic conditions of bowels the sedatives are indicated, such as bromides, valerian and asafœtida, the latter in pill form of two grains each. In the obstinate cases, enemas have to be often resorted to, either as plain warm water, saline, or soap suds. For costive stools, the best results may be obtained by an injection of two ounces of olive oil, retained for the night and irrigated in the morning with one and a half litre of hot sodium bicarbonate solution.

The following may be used to great advantage in cases suffering with marked tympanites:

℞ Fellis bovis, ...3ss,
Glycerini, ...3ii;
Terebenthinæ, ... 3i;
Aquæ saponis injectæ, q. s.....3iv.
M.

The anastomosing of the small intestines with the sigmoid flexure or rectum has been recommended by some of our surgeons. This measure is too radical and should be thought of only in those cases in which the constipation is extreme and the resulting symptoms intolerable.

Dr. C. Herbert Church, of Newark, N. J., states that:

In order to treat constipation successfully we must by a proper diet, well assimilated, furnish good blood for the nutrition and use of the liver, intestines, and all other organs concerned in the care and passage of the food through the digestive tract. We must in the same way supply proper bulk, moisture, and fat to keep the material in an easily movable condition. I do this by an ordinary reasonably mixed diet with an excess of water, acid juicy fruit, and fat, and sometimes some coarse food, such as bran bread, shredded wheat, etc. I believe that the foregoing, with regular habits in going to stool, will cure at least three quarters of our cases of constipation.

I prescribe the juice of a lemon in a pint of water without sugar to be drunk on arising in the morning, finishing it at least half an hour before breakfast and then a glass of water every waking hour. I also advise fruit with each meal and a large apple or orange (or two small ones) at bedtime.

For fats, use cream butter and olive oil. In some cases the mineral oils, being indigestible and thus going unchanged through the tract, may be even better. Emphasize the importance of thorough mastication and never allow any drinking with food in the mouth.

As to cathartics and enemas, I am everlastingly opposed to their habitual use, but I believe in a square deal for weak, overloaded, half paralyzed intestines, as well as for all classes of men, and I don't think it is a square deal to require them, when ill, to get rid of a mass of hard dry feces which would overtax them when well. Therefore, I begin

the treatment of constipation by a thorough clean out, usually prescribing enemas first, then cathartics.

Use the least irritating method that will give you a clean bowel, but "git thar" some way, and if necessary repeat the process during the treatment. In giving the enemas, I use the ordinary fountain syringe with the regular hard rubber nozzle. Have the patient lie on the left side with the hips elevated and take what they can hold easily. Shut off the water and have him lie still for ten minutes.

Turn him on the back with hips still high and after a moment or two try to give a little more of the solution, but not more than he can retain. Again shut off the water and rest for ten minutes.

Turn the patient on the right side, hips low, for ten minutes. Again turn on the back and give all he can hold.

In this way you get the solution all through the colon and give any hard adherent masses a chance to soak loose and finish with a torrent to wash everything out. In a few cases, where I have felt that there were masses that the ordinary enemas didn't loosen, I have used with fine effect:

℞ Inspissated ox gall, ...ʒi;
Water, ...Oi.
Inject and work through colon as directed.

Another requirement for the cure of constipation is an unirritated canal of proper calibre. This means the cure of fissures, hemorrhoids, contracted sphincters, adhesions, uterine, ovarian or prostatic, troubles with medicine, surgery, electricity, vibration, rectal dilators, or what not. Again, by exercise and hyperemia, one must get good action of the intestinal muscles and glands, as well as of the abdominal muscles, which assist in training, and prevent or relieve abdominal and pelvic ptoses.

I try to get my patients to take some exercises night and morning, which develop and massage the abdomen, while I use electricity or vibration as required three times a week.

The Morton wave to the abdomen and rectum is probably the best, although vibration, massage, or a slowly interrupted galvanic, faradic, or sinusoidal current with one pole in the rectum and the other moving over the abdomen or both moving over the abdomen, two inches apart, are all useful, as is a well covered cold compress worn at night over the liver and abdomen.

Don't forget that your whole trouble may be caused by the drag of a hernia or by some form of enteroptosis which will require mechanical support, at least until it can be cured in some way. Then if we are to succeed in curing our case, we must have good liver action. This we get by Morton waves, light, vibration with a deep pounding stroke, some form of massage applied to the liver, our fruit diet, and the remedy appropriate to the particular case in hand as nux, chelidonium, chionanthus, leptandrin, mercury, podophyllum, etc., in such small dose as will tone up and develop the organ rather than act as a cathartic.

The last requirement of which I will speak is good mind and nerve action. For this, insist on absolute regularity in going to stool and use all the psychotherapy of which you are capable. Be frank and say it will take time, but you are sure of a cure. Give lots of encouragement. Improve the general nerve action by light, vibration, massage, Morton wave, etc., to the spine. Throughout the treatment, by fresh air, exercise, and in every way you can, build up your patient. Treat, not constipation, but the individual constipated patient before you, and you can cure him.[1]

Therapeutic Notes.

Treatment of Punctured Wounds.—D. N. Eisendrath, in the *Chicago Medical Recorder* for December, 1913, lays stress on the necessity of opening widely all wounds that can have resulted in the introduction of dirt from the surface into the deeper parts. In all punctured or blank cartridge wounds he makes it a practice, conditions permitting, to anesthetize the patient and place an Esmarch constrictor on the extremity, well above the wound, in order to see into all parts without being disturbed by the constant blood flow. The skin edges are then cut away so that the surface opening is as large as the widest part of the wound in the soft parts, and all foreign bodies, such as portions of blank cartridges, sloughs, etc., are removed. If the wound is due to a rusty nail penetrating the plantar surface of the foot, he usually makes a counter incision on the dorsum. The entire wound is then swabbed out with a three per cent. tincture of iodine, and loosely packed with gauze. No attempt is made to bring together the wound edges, unless the bleeding is excessive when the constrictor has been removed. In addition, 1,500 units of tetanus antitoxin are invariably injected as a preventive measure.

Treatment of Anemia.—W. H. Willcox, in the *Practitioner* for September, 1913, points out that in cases of chlorosis presenting themselves with marked gastric irritation, it may be necessary to give first, for a few days, a mixture of bismuth and alkali:

℞ Bismuthi subcarbonatis, ...gr. x (0.6 gram);
Sodii bicarbonatis, ...gr. xx (1.2 grams);
Mucilaginis tragacanthæ, ...ʒii (8 grams);
Spiritus chloroformi, ...mx (0.6 gram);
Aquæ menthæ piperitæ, q. s.....ʒi (30 grams).
M. Sig.: To be taken three times a day, before meals.

The diet in such cases should consist of liquids, such as peptonized or citrated milk, given every two hours. With rest in bed, these measures will soon cause the gastric irritation to subside, and the administration of iron can then be begun.

In pernicious anemia, the author lays stress on the advisability of overcoming oral sepsis. The following mouth wash may be prescribed:

℞ Liquoris hydrogenii dioxidi, ...ʒii (8 grams);
Glyceriti phenolis, ...mxx (1.25 grams);
Aquæ, q. s. ad.....ʒi (30 grams).
Misce.

[1]The essays of a large number of competitors in this unusually successful contest have been forced out through sheer lack of space. Among those which were prepared for the press, owing to special merit, but which we are unable to present to our readers, are the contributions of Dr. William J. Ryan, of Philadelphia; Dr. R. Wellesley Bailey, of Germantown, Philadelphia; Dr. Harry Meyersburg, of Brooklyn-New York; Dr. P. F. Carlucci, of Scranton, Pa.; Dr. Morris Markowitz, of Philadelphia; Dr. A. S. McCormick, of Akron, Ohio; Dr. Albert C. Geyser, of New York; Dr. M. Gordon, of Brooklyn-New York; Dr. Louis H. Slote, of Brooklyn-New York; Dr. C. G. Boutros, of Capron, Okla.; Dr. J. Louis Metzger, of Brooklyn-New York; Dr. Harold L. Hall, of Brooklyn-New York; Dr. F. C. Davie, of Angelica, N. Y.; Dr. J. N. Jerome, of Evansville, Ind.; Dr. Samuel Blumenfeld, of New York; Dr. Harriet Louise Palmer, of Winthrop, Mass.

Carious teeth should be removed, and, if there is pyorrhœa alveolaris, the affected teeth taken out; if the patient's condition does not permit, local antiseptic treatment, together with an autogenous vaccine, administered.

Intestinal antiseptics are of great value, but only if continued for some time. Where there are attacks of enteritis, the feces should be bacteriologically examined, and if a specific microbic infection is found, a vaccine may be prepared and administered.

After the meals, at which the patient should be encouraged to take as much food as he can digest, the use of some such preparation as the following will be necessary.

℞ Glyceriti pepsini (N. F.), ...3i (4 grams);
Acidi hydrochlorici diluti, ...mxx (1,25 grams);
Syrupi aromatici, ...3i (4 grams);
Aquæ, q. s. ad.....3i (30 grams).
M. Sig.: To be taken immediately after meals.

The digestion of starchy foods may be aided by malt preparations.

Arsenic, in cases without evident gastric irritability, may be given as follows:

℞ Arseni trioxidi, ...gr. 1/25 (0.0025 gram);
Acidi hydrochlorici diluti, ...mxv (1 gram);
Glyceriti pepsini (N. F.), } .....āā 3i (4 grams);
Syrupi aromatici, ... }
Aquæ, q. s. ad.....3i (30 grams).
M. Sig.: To be taken three times daily after meals.

Where nausea and vomiting are present, on the other hand, the following combination may be given for a time:

℞ Liquoris potassi arsenitis, ...miii (0.2 gram);
Bismuthi subsalicylatis, } ...āā gr. viii (0.5 gram);
Bismuthi subcarbonatis, }
Sodii bicarbonatis, ...gr. x (0.6 gram);
Spiritus chloroformi, ...mx (0.5 gram);
Aquæ menthæ piperitæ, q. s. ad.....3i (30 grams).
M. Sig.: To be taken three times daily after meals.

The dose of the arsenic preparation should gradually be increased to eight minims (0.5 c. c.), or one twelfth grain (0.005 gram) of the trioxide. Where the drug is not tolerated by the mouth a five per cent. solution of sodium cacodylate in sterile water constitutes the best preparation for hypodermic use, fifteen minims (one c. c.) of the solution being given daily for three or four weeks. In any case, it is a good plan to give, for the first fortnight, daily injections of ten minims (0.6 c. c.) of the cacodylate solution, the patient thus becoming able to take arsenic by the mouth and being more quickly brought under the influence of the drug.

When the blood has returned nearly to normal the dose of Fowler's solution should be reduced to three minims (0.2 c. c.), or a Blaud pill containing one thirtieth grain of arsenic trioxide (0.002 gram) given thrice daily. Even after the patient is practically well he should take one fortieth (0.0015 gram) of arsenic in a pill twice daily in alternate weeks for some months.

Iron may be given in the later stages of the treatment, or when arsenic has to be discontinued for a period.

In very severe cases of pernicious anemia, oxygen inhalations are of service.

Treatment of Carbuncle.—S. Gucciardello, in *Semaine médicale* for October 29, 1913, is stated to have obtained excellent results in this condition by the projection of live steam on the affected area. Any receptacle having a firmly attached horizontal spout, about two cm. in diameter, will suffice for the generation and projection of the vapor. An evenly acting but adjustable source of heat is also required. The jet of steam should be directed perpendicularly on the involved surface and the amount of heat applied should be as great as the patient can stand. The jet should be passed into a cylinder of cardboard with diameter somewhat larger than that of the carbuncle and about thirty to forty cm. long. Held nearly in contact with the skin, this cylinder will restrict the action of the steam on the carbuncle itself and a surrounding zone of tissue not yet infiltrated. In the case of a carbuncle on the neck or head, the head should be wrapped with a cloth, frequently wrung out of cold water, to prevent congestion. Five, six, or seven treatments, each lasting about an hour, may be given daily, at intervals of an hour and a half. During these intervals a layer of absorbent cotton, moist with warm water, should be kept over the affected region.

Even after the first few treatments, considerable subjective relief is experienced. Sleep is rendered possible, extension of the infiltration is checked or markedly slowed, and the purplish areola surrounding the carbuncle becomes softer, smaller, less tender, and tends to assume a pink color. Improvement is also manifest in the appearance of a small amount of pus, which is discharged slowly through the clefts in the skin surface. The later vaporizations activate suppuration considerably, each dressing, when removed, showing a rather large quantity of pus. Where the treatment is carefully carried out, fever and the infiltration surrounding the lesion disappear in from two to six days, as the author had occasion to observe in a series of about fifty cases. The beneficial effects are ascribed to the temperature of 50° to 55° C. maintained at the surface, and 45° C. more deeply in the infected tissues, during the steam projections, these temperatures being far more inhibitory to bacterial pullulation than that of 38° C. maintained by the mere application of hot compresses. The local defensive reaction may also be stimulated by the higher temperatures.

Iodine in the Treatment of Typhus Fever.—Ouftugeaninoff, in *Presse médicale* for January 28, 1914, reports favorable results from the internal administration of iodine in 106 cases of typhus fever. Comparison with ninety-five unselected cases simultaneously treated without iodine, showed a mortality of 6.6 per cent. in the cases given iodine, and 14.7 per cent. in those in which it was not administered. The eruption had disappeared by the twelfth day in eighty per cent. of the iodine cases and in but thirty-eight per cent. of the others, while 77.4 per cent. of the iodine cases had left the hospital at the end of the third week, and only 53.2 per cent. of the remainder. The frequency and severity of delirium during the course of the disease was also reduced by iodine. The remedy was given in milk or in solution in some other fluid preparation. The beneficial effects are ascribed partly to physical and chemical changes in the blood, and partly to the production of leucocytosis.

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EDITORS
CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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NEW YORK, SATURDAY, MARCH 21, 1914

BLINDNESS AND THE MIDWIFE.

In thirteen States of the Union there are absolutely no restrictions upon practice by midwives; in fourteen more it has not been possible to ascertain any statutory requirement for their training, licensure, or control; in two only does legislation approach what is right and proper. The Committee for the Prevention of Blindness sent their secretary, Miss Carolyn C. Van Blarcom, to Europe to ascertain what had been accomplished there, and we have before us part of her experiences recorded in the 141 pages of *The Midwife in England*, with an introduction by Dr. J. Clifton Edgar, published at 130 East Twenty-second Street, New York. The present condition in America seems to the author to be summarized by a beldame, eighty years of age, who declared, "I am too old to clean; too weak to wash; too blind to sew; but, thank God! I can still put my neighbor to bed!" Such a woman will assure her patients that sore eyes are natural in a baby, will prescribe milk, lemon juice, lard, raw potatoes, scraped beef, saliva, etc., and when the baby goes blind, piously declare that it is the will of God. Owing to the character of recent immigration, over forty per cent. of women in America are now attended in childbirth by midwives, yet there is but one training school in the whole country, that at Bellevue Hospital.

The present requirements in England are briefly as follows: A candidate must, under satisfactory supervision, have attended and watched the progress of not fewer than twenty labors, she must have nursed twenty lying-in women and their infants during the ten days following labor, and she must have attended a course of instruction, extending over not less than three months and consisting of not fewer than fifteen lectures, in elementary anatomy, pregnancy and its complications, including abortion, signs of abnormal labor, hemorrhage, preparation of antiseptics, management of the patient, including use of thermometer and catheter and taking of the pulse, management of the infant for ten days, including feeding and signs of disease, duties of a midwife as described in the regulations —to observe which demands intelligence and care— obstetric emergencies, puerperal fever, effects of venereal disease on the newborn, disinfection of person, clothing, and apparatus, principles of hygiene as regards home, food supply, and person, and the care of children apparently lifeless. Many graduate nurses add the midwife's training to their own in order to qualify for certain posts. Three of the forty English schools give free tuition, and in a few instances the cost runs up to $145. The examination is strict, both written and oral, defects in training being frequently discovered by one test when the other has been passed satisfactorily.

Owing to our constitution this matter must be taken up by the States separately, and it is complicated by such problems as the immense number of foreigners with their own customs and superstitions, the division into white and black, the very size of our country indeed. It demands immediate and sustained attention, for fitness or unfitness in a midwife may mean life or death, sight or blindness, health or invalidism, physical well being or lifelong misery for untold numbers of mothers and children. There could not be better work for committees of women than to urge the necessary steps on the various legislatures, and we commend this booklet most earnestly to the attention of such committees, for it contains important details to which our limited space has prevented more than the barest reference. If object lessons are needed, a few visits to asylums for the blind should serve to fire the average intelligent woman with an unquenchable enthusiasm for so necessary and so appealing a crusade.

EXPERIMENTAL IMPLANTATION OF THE GENERATIVE GLANDS.

An interesting experiment which, it is hoped, may ultimately prove as successful as its benefits would prove far reaching, was recently begun by G. Frank Lydston (*Bulletin of the Chicago Medical Society*, March 7, 1914) to elucidate the following questions: The therapeutic value of generative gland implantation, the kind of dead subjects most suitable as donors, and the value for implantation

work of frozen glands, Carrel's labors being duly recognized. As to the disorders which would probably be benefited by the procedure, they would include dementia præcox, impotence and sterility, psychopathia sexualis, certain chronic diseases of the skin, the disturbances incident upon artificial or physiological menopause, sex mutilations, and precocious senility.

The organs employed were a testis taken from a suicide eighteen years of age who had been dead seventeen hours, and the ovaries of a girl who had died of violence twelve hours earlier. The testis was implanted into the experimenter's own spermatic cord within the scrotal sac, his associate Dr. Carl Michel, assisting. On the eighth day after the operation one half of the implanted gland was removed; it was found to have become fixed by distinct and firm vascular adhesions. A fistula, which formed where the segment of gland had been removed, permitted the passage of a mucosanious secretion in which immature spermatozoa were found. The ovarian implantation was carried out in a woman fifty-nine years of age who was suffering from the effects of total removal of the uterine appendages. One of the ovaries was implanted in the patient's left labium majus. While the wound healed kindly, it is as yet too early in this, as in the first case, to predict results.

While expressing the hope that the experiment may prove successful, we cannot but recall the results recorded by Carrel and Guthrie in respect mainly to kidney implantation in the cat. Though the animal recovers and even secretes urine normal in amount and composition, the exogenous nature of the grafted organ soon asserts itself through its inability to carry on the function, and the animal dies in about three weeks. Transplantation of an animal's own kidneys, however, enables it to live two years in normal health. This and other experiments have shown that transplantation of an exogenous organ, even from a healthy donor, cannot be performed successfully, at least in the light of present knowledge and with available technic. Such experiments as Doctor Lydston's are invaluable, however, in that they may, even if it be by chance, as is often the case in science, furnish some clue undiscovered by his predecessors which will ultimately insure success.

TEETH AND HEALTH.

In a recent number of the *American Journal of the Medical Sciences*, Camac called attention to the importance of a more intimate cooperation between the physician and the dentist. There is little doubt that for many years the medical profession has assumed a somewhat superior position and has refused to recognize the bearing that dental disturbances have upon the general health.

Any one who takes the trouble to examine, even casually, the oral cavities of his patients will be astonished at the condition of the teeth. Although American soldiers have excited favorable comment on account of the tooth brush being so much in evidence, yet the care of the mouth is neglected sadly by the community. So many teeth are gone that the proper mastication of food becomes impossible, and the individual is commonly under weight and anemic. In addition to this loss of mechanical value, there is the presence of the necrotic conditions that led to the destruction of the teeth. It may be called Riggs's disease, pyorrhœa alveolaris, dental abscess, dental sepsis, etc., but the important point in common is the presence of pus in greater or less amount. If, as is not infrequent, two or three drams of pus, containing virulent streptococci, are secreted and swallowed every day, there must occur some disturbance of digestion But there is an even more serious and dangerous possibility, that of localized collections of pus which cannot escape and may therefore give rise to systemic infections, such as arthritis and endocarditis. Such a purulent condition anywhere else than around the teeth would be attacked most vigorously. No physician would permit an infected finger nail to go untreated, yet the same man will calmly disregard a suppurating tooth and wonder why his treatment is not successful. Camac believes that consultations of the internist with the dentist are as necessary as those with the surgeon, a belief that is indeed warranted by the facts.

THE DIVIDING LINE BETWEEN SANITY AND INSANITY.

It is not our purpose to enter into a discussion of the best definition of sanity or insanity. Although we all know what sanity and insanity mean, it is not an easy matter to give a definition which is sufficiently all embracing and yet properly delimiting in its scope, and which will please us all. We find the same difficulty in defining such everyday and well understood terms as life and love. In fact, the fundamental, elemental things in life seem at times quite indefinable. So it has always been with the terms sanity and insanity. The real difference between sanity and insanity is, essentially and fundamentally, one of degree and not of kind; it is a relative and not an absolute difference. Between the two extremes of positively sane on the one hand and positively insane on the other, we find an uninterrupted series of intermediate mental states, which merge by an imperceptible series of gradations from sane into insane. We have, therefore,

certain mental states which are just on the frontier, the so called borderland cases. These mental states may be transitory or temporary, or they may be more or less prolonged episodic occurrences, or they may be characteristic of the individual's general temperamental constitution or make-up and thus represent one or other of certain specific mental types. The study of character, personality and mental make-up, of mental types and modes of reaction is most important. We must recognize the hysterical type, the neurasthenic type, the psychasthenic type, the shut-in or dementia præcox type, the manic depressive type, the cranks, the ill balanced and eccentric individuals, hoboes and vagrants, prostitutes, perhaps, and sexual perverts, and many others. These groups of cases go to form a large proportion of the classes which stand on the borderland, as it were, between the certain ground of sanity and the uncertain sands of insanity. It is these individuals who, under some great stress or strain or some new demand for adaptation, present a reaction which is but an exaggerated expression of a tendency or trait which was always present, but in a less active, less noticeable form. In insanity the multiform mental pictures, the peculiar conduct, and the varied symptomatology do not arise *de novo;* all the conditions were there before, but in a less recognizable, relatively dormant or latent form. It is in these disorders that the mind unearths, as it were, the hidden or only slightly active tendencies, which, at bottom, were more or less dominating the personality, making the individual just what he was. It is in times of toil and trouble, of trial and disappointment, of difficulty and struggle, that we show our mettle, the stuff whereof we are made. It is then that we unfold ourselves, and evolve qualities and a course of conduct of which we, as well as others who thought they knew us, little dreamed that we were capable It is in such perilous periods in the course of our lives that the good and the bad in us, the depth of our character, our mental make-up, our type of reaction come to the surface and hold full sway. It is in the mentally disturbed states that we see the underlying forces for good or ill, that alter the character and the conduct of the individual. Such a study affords us an opportunity, to study not only personality and mental types, but, still better, the mind of man, the make-up of mankind. Here, indeed, is a fascinating and valuable side of psychiatry and psychopathology.

PROPHYLAXIS OF INTESTINAL STASIS.

Seton Pringle, the well known Dublin surgeon, is an experienced laparotomist and familiar with the different procedures undertaken to relieve intestinal stasis. All the more weight, therefore, must be given to his advice to prevent the condition, if possible, and to try medicinal agents before employing any of the operative procedures, "legion," as he says, "in number." In the *Dublin Journal of Medical Science* for February, Mr. Pringle impresses upon the profession his belief that the abdominal are the most important voluntary muscles of the body, and if they are properly developed by suitable exercises the possibility of ptosis is reduced to a minimum; if there is any costiveness it should be combated early by the regulation of the diet and the use of liquid paraffin (mineral oil). Many patients, if seen early, may be rendered comfortable by the use of an abdominal belt in addition to the exercise and oil. The latter he gives in doses of one to four drams three times a day, flavored with cinnamon or peppermint, or else advises one of the proprietary preparations.

A CAMPAIGN FOR CLEAN FOOD.

Our earnest, capable, but undermanned board of health has managed to include in its multifarious activities the inspection of places in New York where food is handled. There can hardly be imagined a more important function for the board, for a preliminary survey of these places disclosed, according to the *Bulletin* for March 21st, almost unbelievable conditions. Out of some 20,000 places inspected, 6,134 were merely dirty (!); 2,021 had structural defects; in over 1,000 structural defects and filth existed side by side. We learn with pleasure that 5,000 of these places have been reinspected and that fewer than fifty were found to have neglected the admonitions of the board; a summons to the magistrates' court and a fine taught the latter an unforgettable lesson. There is now a special squad of inspectors, each in charge of a small district. Physicians should report promptly to the board conditions demanding its attention and should universally instruct their patients to do the same. The effect on health and comfort will be immediate and striking.

MORTALITY AND THE TIME OF DAY.

E. Billing, in the *Practitioner* for March, states that he became interested in the popular belief that the time of day or night had a marked influence on mortality, that more sick persons died during the night than during the day, and that the most fatal hours were those of the early morning. He therefore analyzed a series of 10,000 deaths in both sexes, from all causes, at all times of the year, and at every age, which occurred at the Poplar and Stepney Sick Asylum between 1899 and 1913, and found that none of the three items of general belief was entirely true. His figures taught that the time of day or night did have a slight effect, although there was no appreciable difference between day and night mortality. The most fatal hours were those of the early afternoon; next, those of the early morning; while the least fatal hours were those from 7 to 11 a. m.

POSSIBLE SOLUTION OF THE FLY PROBLEM.

A trap to destroy the maggots of the typhoid or housefly before they develop into winged insects is a possible solution of the fly problem and one that should interest health officers, sanitarians, and others who might make use of it on manure heaps where this common pest breeds. The Department of Agriculture's scientists have succeeded in destroying from seventy to ninety-nine per cent. of the maggots in a pile of manure. A large galvanized iron pan, measuring five by three feet, with sides four inches high, was made. In this stood a container on legs eight inches high. This container measured four by two by two feet. The sides and bottom were of heavy wire, one quarter inch mesh, supported by a light wooden framework. Twelve cubic feet of manure well infested with eggs and larvæ were placed in this container and sprinkled with water. Water was also poured into the pan below to the depth of about one inch. Surrounding and covering both pan and container was a fly tight inclosure made of a large cage, six by six by six feet. This prevented further infestation of the manure, and an arrangement of traps at the top of the cage made it possible to capture and keep a record of any flies that might emerge. At the time for the emergence of flies the sides of the cage were darkened with black cloth in order to drive the flies into the traps at the top. Each day the maggots were collected from the pan and counted, and each day the manure in the container was sprinkled thoroughly with water and the pan was washed out and again partly filled with water to drown the larvæ which fell into it. From ninety-eight to ninety-nine per cent. of the maggots were destroyed, if the manure was kept moist; from comparatively dry manure about seventy per cent. were destroyed.

Obituary.

GEORGE McNAUGHTON, M. D.,
of Brooklyn, New York.

Doctor McNaughton died at his home, 497 Clinton Avenue, Brooklyn, on March 17th, after suffering from a cardiac disorder for over a year and a half. He was born, of Scotch ancestry, in Mumford, N. Y., in 1856, graduated at Bellevue in 1878, spent three years in Jersey City, and settled in Brooklyn in 1881. He was the first physician to be appointed assistant to the Department of Health, a position he held for four years. Subsequently he became assistant gynecologist at the Kings County Hospital, visiting gynecologist at the Eastern District Hospital and the Brooklyn Hospital, consulting gynecologist at the Long Island State Hospital and Central Dispensary, and chief gynecologist at the Jewish Hospital. For five terms he was president of the Kings County Medical Society, and the beautiful home of that organization on Bedford Avenue owes much to his energy as well as to his private means. Doctor McNaughton was unmarried.

News Items.

Public Health Exhibit at the Panama-Pacific International Exhibition.—The system of hygiene practised in the Canal Zone will receive special attention in the national public health exhibit at the exposition, proving that it was the scientific work of Dr. William C. Gorgas that made possible the construction of the Panama Canal.

Smoke Campaign in Queens.—An energetic campaign against the smoke nuisance has been carried on in the Borough of Queens since January 1st, and the results have been satisfactory. Thirteen cases have been prosecuted in the Magistrates' Courts since that date, and in many fines have been imposed.

New Building for the Clinical Society of Philadelphia.—Plans have been prepared for the construction of an eleven story building for the Clinical Society of Philadelphia; the estimated cost of the new building and the site is $1,000,000. The funds are to come from fees of $1,000 from each member of the society, and it is said that more than two hundred applications for membership have already been received.

Les Médecins humanistes.—A society of this name has been organized in Paris, with the object of uniting physicians who are interested in literature in its relations with the biological sciences, to advance in every possible way the revival of the study of Greek and Latin, and to bring about a reaction against neglect of the humanities in all curricula preliminary to the study of medicine. Those who are interested may communicate with Doctor Menier, Decazeville, France.

Examination for Medical Intern, Government Hospital for the Insane.—The United States Civil Service Commission announces that senior students of reputable medical colleges will be admitted to the open competitive examination for medical intern in the Government Hospital for the Insane, to be held on April 8, 1914, upon filling applications showing them to be otherwise eligible; but in the event they attain an eligible average in the examination their names will not be entered upon the eligible register until they have furnished proof of actual graduation from such colleges.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, March 23d, Section in General Medicine of the College of Physicians, and North Branch of the County Society; Tuesday, March 24th, West Philadelphia Medical Association and the St. Mary's Hospital Clinical Society; Wednesday, March 25th, County Medical Society; Thursday, March 26th, Pathological Society and Germantown Branch of the County Society; Friday, March 27th, Neurological Society, Northern Medical Association, South Branch of the County Society, and the Medical Club (directors).

Philadelphia County Medical Society Committees.—Committees of the Board of Directors of the Philadelphia County Medical Society, under the new administration, have been appointed as follows: Finance, Dr. Herman B. Allyn, chairman, Dr. William S. Newcomet, and Dr. John J. Robrecht; medical defence, Dr. G. Morton Illman, chairman, Dr. Herman B. Allyn, and Dr. J. Torrence Rugh; publication, Dr. Henry Leffmann, chairman, Dr. John F. Roderer, and Dr. G. Morton Illman; scientific program, Dr. John A. McLean, chairman, Dr. Edward Martin, and Dr. J. Torrance Rugh; branches of the society, Dr. John F. Roderer, chairman, Dr. G. Morton Illman, and Dr. John J. Robrecht.

Complimentary Dinner to Colonel Gorgas in London.—Among the guests who will attend the dinner to be given in London on Monday evening, March 23d, in honor of Dr. William Crawford Gorgas, surgeon general of the United States Army, to whom the *British Medical Journal* refers as the "Hercules of hygiene," will be Sir Thomas Barlow, who will act as toastmaster, Sir Rickman Godlee, Sir Francis Champney, Sir David Ferrier, Sir Havelock Charles, Sir William Osler, Sir Clifford Allbutt, and the directors of the medical services of the Royal Navy and Army. The Colonial Secretary, Mr. Lewis Harcourt, and Viscount Bryce have also accepted invitations to be present. Doctor Gorgas is on his way home from South Africa where he had been fulfilling a sanitary commission and his two companions, Doctor Darling and Major Noble, will also be guests of honor at the dinner.

Mortality Statistics of New York.—During the week ending March 14, 1914, there were 1,705 deaths from all causes reported in the city of New York, with an annual death rate of 15.93 in a thousand of population, compared with a rate of 17.94 for the corresponding week in 1913. The following causes showed material decreases: Measles, scarlet fever, diphtheria and croup, whooping cough, typhoid fever, cerebrospinal meningitis, diarrheal diseases under five years of age, other digestive diseases, lobar pneumonia, bronchopneumonia, Bright's disease, and nephritis. The causes showing an increased mortality were organic heart diseases, influenza. The number of deaths reported from all forms of tuberculosis remained the same.

New German Journal of the Science of Sex.—Professor Dr. A. Eulenburg and Dr. Iwan Bloch, of Berlin, the well known authorities on problems of sexual life, are about to found and edit in Bonn the *Zeitschrift für Sexualwissenschaft,* an international journal of biology, psychology, pathology, and the social aspects of sexual life. The journal, which is to be the official organ of the Berlin Medical Society for the Study of Sexual Life and Eugenics, will be published monthly at an annual subscription price of 16 marks. More than 150 scientific men all over the world, interested in this problem, are collaborators. As soon as the first number (April, 1914) is published, we shall give our readers further information. Specimen copies will be sent on request. A. Marcus & E. Webers Verlag (Dr. jur. Albert Ahn), 1 Thomastrasse, Bonn, Germany.

Medical Society of the County of New York.—A stated meeting of this society will be held in Hosack Hall, New York Academy of Medicine, on Monday evening, March 23d, under the presidency of Dr. T. Passmore Berens. The program includes the following papers: Recent Results of Antityphoid Vaccination, by Major Frederick F. Russell, Medical Corps of the United States Army; Vaccines and Serums, by Dr. Hans Zinsser; Practical Application of Vaccines and Serums, by Dr. James G. Dwyer; Cancer, by Dr. Francis Carter Wood. At next month's meeting of the society, which will be held on Tuesday, April 28th, Dr. Dougal Bissel will present a paper on Surgical Replacement of the Prolapsed Kidney and Dr. William Sharpe will read a paper describing a new operative treatment for spastic paralysis. Both papers will be illustrated by lantern slides.

Exempt Position Vacant in Department of Health.—The attention of physicians is called to the fact that a vacancy in the position of attending physician to the tuberculosis clinic exists in Stapleton Clinic, Borough of Richmond. The position required attendance at the clinic on Tuesday, Thursday, and Saturday from 2 to 4 p. m., for the examination and treatment of tuberculous patients, together with such visits to these patients in their homes as may be necessary. The physicians attached to this service receive a compensation of $600 per annum and are required to conform to all the rules and regulations of the Department of Health governing its employees. Candidates should make application to Dr. John S. Billings, Director, Bureau of Infectious Diseases, 149 Centre Street, New York, and should include in the application a statement concerning any special qualifications for the position.

A Special Meeting for the Discussion of Cancer.—The American Society for the Control of Cancer has made arrangements for a special meeting to be held at the New York Academy of Medicine, 17 West Forty-third Street, on Friday evening, April 10, 1914, at 8:30 p. m. This date has been selected in order that physicians and surgeons attending the Congress of the American Surgical Association may conveniently be present. The public is also invited. Dr. William J. Mayo, of Rochester, Minn., president of the American Surgical Association, and Frederick L. Hoffman, LL. D., will discuss the problem of cancer and its control. Dr. Francis Carter Wood, director of the George Crocker Research Laboratory, will describe the investigation of cancer which has been undertaken there under the auspices of Columbia University. Dr. J. Collins Warren, of Boston, professor emeritus of Harvard University, and president of the Harvard Cancer Commission, will give an account of the establishment of that commission and the research work which it is directing at the Collis P. Huntington Memorial Hospital, and the Harvard Medical School.

The Health Department's Bulletins Concerning Pure Food Work.—In view of the fact that there has been a strong public demand for authoritative statements concerning the attitude of the Department of Health of the City of New York toward matters dealing with the control of food supplies, Dr. S. S. Goldwater, commissioner of health, has caused a series of articles to be prepared containing the desired information. These articles will be issued from time to time in the form of press bulletins. Bulletin No. 1, entitled *The Value of Public Health Education in Pure Food Work,* was issued on March 16th. In the next bulletin the development of the present attitude of health authorities with respect to food frauds will be discussed.

Legislation Restricting the Sale of Wood Alcohol.—The Griffin-Thorn bill prohibiting the manufacture and sale of wood alcohol combinations without a "poison label" was given a joint hearing before the codes committees of the Senate and Assembly on Wednesday, March 18th. The bill was drafted by the New York Committee for the Prevention of Blindness and has the support of the American Association for Labor Legislation, the New York State Committee for the Blind, the New York Association for the Blind, the oculists of the medical staff of the New York Eye and Ear Infirmary, the Manhattan Eye and Ear Hospital, the Hermann Knapp Memorial Eye Hospital, the State Law and Order Alliance, the Russell Sage Foundation, the State School for the Blind, and other influential organizations.

Clinical Congress of Surgeons of North America.—Preliminary arrangements have been made for the fifth annual meeting of this congress, which will be held in London, England, during the week beginning July 27, 1914, and the London Committee on Arrangements and the executive committee of the congress are now prepared to announce that the prospects for an interesting meeting are most favorable. It is suggested that steamship reservations be made at an early date. Special tours are also being arranged for those who wish to visit the medical centres of Europe or take sight seeing excursions. Dr. Franklin H. Martin, 31 North State Street, Chicago, is general secretary of the congress and will be glad to furnish further information. A preliminary clinical program will be published in the April issue of *Surgery, Gynecology, and Obstetrics,* the official organ of the congress.

Medical Society of the State of New York.—The one hundred and eighth annual meeting of this society will be held in New York on Tuesday, Wednesday, and Thursday, April 28th, 29th, and 30th, with headquarters at the Hotel Astor. The House of Delegates will meet Monday evening and Tuesday morning, and the sections will hold their meetings on the mornings of Tuesday, Wednesday, and Thursday, the afternoons being devoted to clinics at the various hospitals. The officers of the society are: President, Dr. William Francis Campbell, of Brooklyn; first vice-president, Dr. W Stanton Gleason, of Newburgh; second vice-president, Dr. G. F. Blauvelt, of Nyack; third vice-president, Dr. Myron B. Palmer, of Rochester; secretary, Dr. Wisner R. Townsend, of New York; treasurer, Dr. Alexander Lambert, of New York. Dr. Charles H. Richardson is chairman of the committee of arrangements, and Dr. Thomas J. Harris of the committee on scientific program. The annual dinner of the society will be held at the Hotel Astor on Wednesday evening, April 29th.

Fourth Midyear Meeting of the Medical Section of the American Life Convention.—This meeting was held at the French Lick Springs Hotel, French Lick, Ind., March 4th, 5th, and 6th. Among those who read papers and took part in the discussions, were: Dr. C. Naumann McCloud, of St. Paul, Minn.; Colonel W. C. Rucker, of Washington, D. C.; Dr. H. A. Baker, of Pittsburgh; Dr. Fred M. Hodges, of Richmond, Va.; Dr. Victor C. Vaughan, Jr., of Detroit; Dr. William J. Mayo, of Rochester, Minn.; Dr. William M. Harsha, of Chicago; Dr. J. Allen Patton, of Newark, N. J.; Dr. J. N. Hurty, of Indianapolis; Dr. Henry H. Schroeder, of New York; Dr. Amand Ravold, of St. Louis, Mo.; Dr. Ambrose Talbot, of Kansas City, Mo.; Dr. T. D. Crothers, of Hartford, Conn.; Dr. Robert H. Babcock, of Chicago; Dr. W. S. Harpole, of Chicago; Dr. Charles L. Mix, of Chicago; Dr. George V. I. Brown, of Milwaukee; Dr. James T. Case, of Battle Creek, Mich.; Dr. W. Edward Magruder, of Baltimore; Dr. Wyeth E. Ray, of New York, and Dr. Alexander M. Campbell, of Grand Rapids, Mich.

Pith of Progressive Literature.

PRESSE MÉDICALE.

February 14, 1914.

Endobronchial Treatment of Asthma.—M. Sourdille gives a detailed description of Ephraim's endobronchial method of treatment, and asserts that its apparent complexity is more than compensated for by the excellent results obtained. Intratracheal sprays are insufficient; to attain the bronchioles the spraying must be done in the bronchi themselves. The instruments consist of a rubber tube with equidistant markings and a special conical and slightly bent spraying tip. The other end of the tube is connected with a fifteen c. c. receptacle in which are placed the solutions to be introduced. Joined to this system is a tube from a compressed oxygen tank, with safety valve blowing off at one kilogram pressure. The larynx is first anesthetized with alypin-epinephrine solution, next the upper trachea, and the larynx again with alypin-epinephrine or cocaine spray, and then the lower trachea and roots of bronchi with a spray of quinine and urea hydrochloride and epinephrine solution. A. Brünings spray apparatus is used in treating these parts. Next the author's bronchial spray tube is introduced as far as the upper trachea through a metallic cannula; the latter is then removed, and after coughing has subsided, the tube passed down into the left bronchus, the patient leaning to the left, rotating the head to the right, and dropping it on his right shoulder, to bring this bronchus in line with the trachea. That the tube has entered this bronchus can be definitely ascertained by running in a little oxygen and auscultating. The bronchioles are next anesthetized by spraying in three or four c. c. of one per cent. quinine and urea solution, and a few minutes after, the author's therapeutic solution, consisting of normal saline, ten c. c.; ten per cent. novocaine solution, one c. c.; and one to 1,000 epinephrine, twenty drops, is sprayed in. The right bronchus is then similarly treated. Treatment leads to abundant expectoration of thick mucus for some hours or days. Early subjective relief is experienced, and on the day after treatment, or the next, emphysema is found markedly diminished, lung capacity greatly increased, and sibilant rales gone. To obtain permanent relief, the treatment has usually to be repeated once or twice at five or six day intervals.

February 18, 1914.

X Ray Treatment of Overacting Ductless Glands.—A. Zimmern and Cottenot point out that overacting glands are more susceptible to the action of x rays than when acting normally. Rave has recently collected 321 cases of exophthalmic goitre thus treated. Nervousness was found to be the symptom most readily relieved (fifty-one per cent. of the cases); next came the tachycardia and tremor; thyroid enlargement and exophthalmos were seldom markedly influenced, but the weight increased in one half the cases. Béclère has reported a case of gigantism in which the excessive growth was arrested and symptoms of brain tumor, especially visual disturbances, improved by x ray treatment of the hypophysis. Crémieux considers x ray the measure of choice in thymus hypertrophy, and eight cases of this affection have been thus treated by various observers with good results. Zimmern and Cottenot have themselves treated twenty-nine cases of continued high blood pressure by irradiation of the adrenals, with resulting fall in pressure of from ten to forty mm. Hg. in all but four instances. In some cases the effect had been maintained already seven months at the time of writing, but in others repeated irradiations were found necessary to prevent reascent. Headache, vertigo, and paresthesias underwent simultaneous improvement. The best results were obtained in fifteen cases of pure hypertension, without atheroma or renal disease. In three albuminuric arteriosclerotics there was no effect. Strongly penetrating rays were used, with a one mm. aluminum shield, and about six H units a month were administered. Destructive changes in the adrenal medulla and cortex were produced experimentally in animals.

SEMAINE MÉDICALE

February 18, 1914.

Tabetic Dyspepsia.—M. Loeper and R. Oppenheim call attention to the frequent occurrence in tabes of gastric disturbances other than the typical crises. Of thirty-five tabetics carefully studied as regards gastric disorders, eighteen at no time showed any such disturbances, four showed ordinary gastritis; seven, typical gastric crises without dyspeptic manifestations during the intervals; two, gastric crises with intervening dyspepsia; and four, tabetic dyspepsia without gastric crises. Tabetic dyspepsia is manifested in four ways: 1, Cramps immediately after eating; 2, flatulence; 3, pain coming on a long period after meals; 4, complete motor paralysis of the stomach, accompanied by lowered sensibility of the organ. The first three of these manifestations occur in the early stages of tabes, the fourth, in the advanced stages. Dyspepsia may occur as a prelude to periodical crises, or the latter may give way in the final stage to gastric torpor and atony. The dyspeptic disturbances are to be regarded as an attenuated or prolonged equivalent of the gastric crises. Clinical examination of the dyspeptics shows that there is little or no secretory disturbance, but that pronounced hypermotility exists. Such hypermotility may, in fact, be present in tabetics presenting no gastric symptoms. Spasm of the cardia or pylorus may also occur, causing the usual symptoms. Tabetic dyspepsia appears to be the result of loss of equilibrium and lack of harmony between the left vagus, or motor and secretory nerve of the stomach, and the sympathetic, the sensory and vasomotor nerve. It probably originates in a chronic, progressive meningoradiculitis, whereas the gastric crises depend on a subacute meningoradiculitis. Although antiluetic measures appear to be useless in the former condition, distinct improvement occurred in one of the author's cases. Cocaine solution may be used to overcome the supposed hyperesthesia of the stomach, and belladonna, atropine, and valerian to remove spasm. Lukewarm applications to the epigastrium and a bland diet, poor in chlorides and rich in phosphorus and lecithin, are also indicated.

Primary Strumous Iliac Bubo.—F. Lejars reports a personal case, and cites others, illustrating the diagnostic difficulties that may be encountered when a single iliac lymph node undergoes marked tuberculous enlargement, unaccompanied by any other significant cutaneous or lymphatic lesion of the lower extremity or abdominal wall. Such masses are rounded or ovoid, slightly movable vertically, and found near the anterior margin of the pelvis. Whether their nature is recognized clinically or not until laparotomy is performed, removal en bloc is indicated. The progress after this has been done would seem to be very favorable, though the bare possibility of subsequent further lymphatic tuberculous trouble must be recognized.

BRITISH MEDICAL JOURNAL.

February 28, 1914

Pathological Changes of the Thyroid in Disease.—Rupert Farrant's findings are based on a study of some 700 thyroid glands removed post mortem, and, in the case of some of the rarer diseases of bacterial origin, on the results of inoculation of guineapigs. He gives a table showing the effect of various bacterial and nonbacterial diseases on the thyroid, from which a few of the most important may be excerpted. Among bacteria which produce no effect on the thyroid are the gonococcus (?), pneumococcus, the staphylococci, certain of the streptococci including the rheumaticus, polyserositis, carcinoma and sarcoma, Addison's disease, diabetes, jaundice, lymphadenoma, and lymphatic leucemia. Certain organisms and diseases produce a colloid or chronic hyperplasia: The coliform bacilli, chronic tuberculosis, Micrococcus melitensis, the meningococcus, late stages of syphilis, actinomycosis, acute anterior poliomyelitis, rheumatic and scarlet fevers, chronic nephritis, and pernicious anemia. Lastly, there are diseases which cause complete or acute hyperplasia of the thyroid, among which are: Diphtheria, dysenteries, paratyphoid, tetanus, acute tuberculosis, secondary stages of syphilis, malaria, measles, pertussis, bronchopneumonia, chronic nephritis, hepatic cirrhosis, and intoxication with the diphtheria toxin. Hyperplasia of the thyroid varies from a slight cell increase with excess of colloid to a hemorrhagic hyperplasia with total absence of colloid. Hyperplasia is so certainly present in the diseases mentioned and is so definitely dependent on the severity and more especially on the duration of the disease that the thyroids from several cases of any one disease may be arranged in order of the intensity of their changes, and this will be found to correspond exactly to the severity and duration of the cases from which they were obtained. It is noteworthy that no signs of thyroid excess are found in the hyperplasia of either the acute or the chronic toxemias nor in the colloid hyperplasia of endemic goitre, though they are found in the hyperplasia of exophthalmic goitre. So it may be said that there are two main differences between the hyperplasias of the toxemias and the hyperplasias of the goitres, one the hyperthyroidism of exophthalmic goitre when compared to the complete hyperplasia of the toxemias, and the other the increase in size seen in endemic goitre compared to that of the chronic toxemias. It is probable that those toxemias which are counteracted by the production of an antitoxin do not lead to thyroid hyperplasia unless the antitoxin is absent or is produced in insufficient amount. There are certain toxemias in which a subacute condition supervenes upon a chronic one, such as cirrhosis of the liver. In such cases it is not uncommon to find evidence of hyperthyroidism in addition to the presence of thyroid hyperplasia. This is encountered in both old standing cases of cirrhosis of the liver and in certain cases of chronic interstitial nephritis. It suggests that the second toxic stimulus acting on a previously hyperplastic thyroid is capable of bringing about a condition of excessive activity.

Observations on the Effects of Adrenaline.—Malcolm Donaldson believes that this drug, while often restoring a pulse previously too feeble to be detected, does so at the expense of injury to the heart. His observations were conducted on healthy normal adults and on several patients apparently needing the drug. Adrenaline was given subcutaneously in doses of three to five minims of the usual one to 1,000 solution. The observations were controlled by injections of similar amounts of normal saline solution. In seven normal persons, subjective symptoms noted after the adrenaline were so marked, that not one patient was willing to undergo any more observations. Symptoms of which they complained were chiefly breathlessness and a sensation of cold. The former was often extremely distressing; the latter was so intense in one of the patients as to lead to a severe rigor. In normal persons as well as in patients, there was usually blanching of the skin. Blood pressure rose from fifteen to forty-five mm. in normal persons; the pulse rate from fifteen to fifty-two beats a minute. Symptoms usually passed off within a comparatively short time. Donaldson believes that even the subcutaneous use of adrenaline is associated with considerable danger, although all of his cases ended favorably.

LANCET.

February 28, 1914

Morbid Anatomy of Tuberculosis in Man.—Theodore Shennan introduces his paper with some interesting statistics which show that even between two regions so closely related as England and Scotland there is a difference in the age period of maximum death rate. In England, the maximum occurs in the decennium from thirty-five to forty-five years; in Scotland it is between twenty-five and thirty-five. The rates do not vary in relation to the density of population, but some local climatic condition, or some difference in mode of life, must play a part. After the age of twenty-five the death rate among men continues above that for women, possibly because women are more subject to cancer and to death from complications of maternity. In 1416 post mortem examinations on children under fourteen years of age, thirty-six per cent. died either from tuberculosis or showed evidence of the disease; it was latent in less than four per cent. of the tuberculous cases. Shennan concludes that a tuberculosis of lymphatic glands indicates an infection from the portal or organ drained by them; and that usually the primary portal of invasion is indicated by the greater age of the

tuberculous process in its regional glands. He also believes that primary infection may, in addition to the local lesion, be followed by a lymph hemic spread and development of foci, which would explain in children some isolated and contemporaneous chronic lesions in several organs. From a study of tuberculosis and of the several forms of pneumoconiosis, Shennan is forced to the conclusion that in the adolescent and adult a hemic infection of the lungs is by no means so important as the aerogenic infection in the vast majority of cases of pulmonary tuberculosis. . . . But, while to his mind the foregoing conclusions are rational and true, they by no means exclude the hemic route as a channel by which the lungs may be attacked, particularly if hypersensitiveness has developed, and especially in children.

Actions of Chloroform and Ether on the Blood Pressure.—H. P. Fairlie thus sums up effects of the two anesthetics on blood pressure: A fall of pressure is produced throughout the administration of chloroform. With the establishment of full anesthesia this fall amounts to at least ten mm. and sometimes considerably more; along with this the pulse beats slower and a varying degree of pallor is present. Surgical shock during chloroform anesthesia produces a slight further fall of pressure. With the withdrawal of these two depressants—chloroform and shock—the blood pressure exhibits a tendency to rise rapidly and very often soon reaches a point a few mm. below the patient's normal. Little alteration of blood pressure is produced by ether. It may cause a rise, it may maintain a constant level, or it may cause a fall. It causes more rapid and more forcible cardiac action, with dilatation of the smaller vessels, as evidenced by flushing; the blood pressure level remains almost constant. With intercurrent shock a considerable fall of pressure takes place, a fall almost equal to the combined effects of chloroform and shock. Recovery from shock is slow, some time elapsing before the blood pressure approaches the normal. Fairlie's summary is based in part on observations made on animals, but mainly on his experiences of three years' use of the drugs in man. It is not generally appreciated that ether thus may lead to an increased danger in the face of surgical shock, and he quotes from several prominent authorities to substantiate this belief. Chloroform would thus seem to be the anesthetic of choice for cases with severe shock, but where shock is absent or likely to be slight, ether should be employed owing to its greater margin of safety.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE

January 15, 1914.

Use of the Tuning Fork in Diagnosing Outlines of the Viscera.—James Cantlie states that when a vibrating tuning fork is made to impinge over an organ, solid or hollow, to which the bell of the stethoscope has also been applied, the note of the tuning fork manifests by its loudness the limits of the organ, becoming faint or altogether inaudible the moment a boundary of the organ is passed. The best tuning fork for the purpose is one with a note of G sharp and with the fork not flattened, but rather pointed. The fork may be struck against anything hard, and is best not dragged along the skin, but raised and "dabbed" on it at short intervals. Over the chest the end of the fork has only to be gently pressed against the skin, but when a careful search must be made for the lower edge of the liver in stout people or in tympanites or ascites, the fork should be pressed fairly deeply. The method is available where palpation or percussion fails to indicate where the liver ends on the left, in cases in which the spleen is enlarged and in contact with it. Pleural effusion can be definitely differentiated from upward displacement of the upper border of the liver the result of hepatic abscess or abdominal distention. The dimensions of the heart, stomach, cecum, and pregnant uterus, ovarian cyst or uterine fibroid can be readily gauged, and a distended gallbladder felt as a tumor can be isolated by sound from the liver or other adjacent organs. Doubtful fractures of the large limb bones, ribs, sternum, and clavicles can be detected by the same method. A fatty liver gives out tones distinct from a cirrhosed liver.

Espasmo Tropical.—R. Vergne presents the first scientific investigation of this disease, which has, however, been known to exist in Porto Rico for years. The benign form is characterized by sudden trismus, shortly followed by fever and unconsciousness, which yields in eight to fourteen hours to stimulating treatment, recovery taking place in the majority of cases. In one malignant form there are superadded restlessness and muttering delirium; the pain sense is preserved, and in two or three days death almost always follows. In the second malignant—or the typhuslike—form, there is brief malaise, the victim then suddenly vomiting, falling to the ground, and losing consciousness. Fever does not appear for seven or eight hours. After three or four days of unconsciousness, convulsions of extreme violence develop, followed, in the few cases that end favorably, by insanity persisting for two or three weeks. The tongue and an eruption in this form are both pathognomonic, the former assuming by the third day the appearance of a piece of charred flesh, and the latter consisting of small dark spots with raised edges, not disappearing on pressure, and usually localized in the abdominal region. On the third day the spots turn red and become somewhat umbilicated, and on the fifth or sixth, they assume a bluish color. There is intense cardiac weakness, the spleen is enlarged and hard, and the liver congested. Acute endocarditis is the cause of death. In twelve cases the blood showed an oval body, measuring two to three microns, mainly extracellular, but sometimes found in red cells. There was also a striking differential increase of the large mononuclear white cells. Near a place where five cases occurred were several breeding places of anopheles. The treatment consists of injections of strychnine, caffeine, and camphorated oil, as well as intravenous saline infusions. Quinine hypodermically gave no results.

PRACTITIONER.

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Diabetes and Its Treatment by Physical Agents.—Joseph Rivière suggests for general treatment of diabetes high frequency in all forms, d'Arsonvalization, monopolar and bipolar effluves over the whole body, general vibrotherapy, general

mecanotherapy, thermoluminous baths, dry heat, hydroelectric and carbogaseous baths, electrostatic baths and faradization, continuous currents, and atmotherapy. He says: 1. Electricity, generally speaking, hyperactivates and balances our trophic molecules and interferes with cellular disturbances. High frequency currents and diathermy will increase the breathing in volume and in carbonic exhalation, renovate oxyhemoglobin, gradually decrease the amount of sugar, quicken the skin functions and muscular forces, do away with creeping amblyopia and genital asthenia, and lessen insomnia and cryesthesis by bringing about an unusual euphoria. 2. Continuous currents are sedative as regards neuralgic and arthritic pains, will stop trophic troubles, and promote the cure of furuncles and carbuncles by introducing ions of iodine, sulphur, lithia, and salicylic acid into the system. 3. Static electricity counteracts neuron anarchy, agrypnia, hypochondria, cramps, visceral spasms, pruriginous dermatosis, and various sensorial disorders. The faradic current is reserved chiefly for costiveness and gastrointestinal atony, which are of frequent occurrence in diabetics. 4. Thermoluminous baths counteract neurasthenia, albuminuria, dyscrasia, tuberculization, and serious dermatosis, as well as denutrition and hypoglobulia. 5. Vibrotherapy, mecanotherapy, and kinetic gymnastics, carried on easily and with accuracy, stimulate deficient nutrition, promote permeability of the skin and suppleness in the muscles, help reflexes, and cause a fairly prompt recuperation of vasomotor activity, so valuable to those whose nutrition is slackened. The amount of therapeutic benefit, which can be derived from well directed vibration and massotherapeutic molecular propulsion maneuvres, is almost beyond belief. 6. Hydroelectric, carbogaseous and radioactive baths, combined at times with the various hydrotherapeutic methods, are intended to increase the necessary eliminations, to alkalinize the blood, to quicken cellular vitality, to augment the potential reserve of nervous efficiency, to prevent and heal skin lesions, and to decrease the spinal irritability of diabetics. 7. All such balneal practices have a tendency to steady, balance, and harmonize vital actions, and to bring about dynamogenic reflexes. In balneation the hydrosinusoidal or undulatory bath has the greatest effect on diabetes proper by decongesting the viscera, perfecting osmosis, increasing the urea ratio and the breathing capacity, and expelling all noxious waste. Our radioactive baths and the carbonic acid baths counteract acidism, insure tegumental counter-effects, and promote, always with happy results, nutrition by stimulating usefully the capillary circulation, the real controller of general trophism.

Treatment of Harelip and Cleft Palate.—H. Blakeway gives a historical account of the operative treatment of harelip and cleft palate, and discusses in detail the modern operations advanced by Arbuthnot Lane, Langenbeck, and Brophy. He says that in deciding among these three methods of treatment every one will agree that in any case of cleft palate the cleft should be operated on as early in life as possible, consistently with the attainment of good result as regards closure of the palate and the function of speech. If we bear in mind these conditions, Brophy's operation must be set aside, for it closes only the alveolar arch, and it cannot be right to subject an infant to this formidable operation in order to gain such an inconsiderable advantage. The mere closure of a harelip in an infant is followed in a few months by a result nearly approaching that which Brophy obtains without having closed the harelip. He believes Langenbeck's operation to be very much safer than Lane's, and to yield better results, both anatomically and functionally. If the cleft palate is associated with harelip, the latter should be operated on first, during the first three months of life. With regard to the time at which the operation upon the palate should be attempted, no absolute rule can be laid down; it depends upon the width of the cleft, breadth of tissue available to close it, thickness and vascularity of that tissue, the height of the palatine vault, general health of the patient, and a variety of other conditions. While the operation cannot as a rule be done during the first year of life, it can be performed in most cases by the end of the second year, and in exceptionally favorable cases the operation may be attempted much earlier than this. He has seen a successful closure of a cleft of the soft palate in a child only four months old.

CANADIAN MEDICAL ASSOCIATION JOURNAL

February, 1914.

Immunities of Tolerance.—John L. Todd and J. G. Adami pursue a line of reasoning that leads to the following conclusions: The apparent immunity which can be acquired against parasites causing many diseases, is often the result of a tolerance of these parasites acquired by their host. Tolerance is maintained by constant infection by the parasite, and it disappears when the infection maintaining it ends. A constant infection upon which tolerance depends may conceivably result from a long continued single infection, or from many repeated infections, and it is possible that tolerances may be produced in both, or either ways.

BOSTON MEDICAL AND SURGICAL JOURNAL.

February 26, 1914.

Serodiagnosis of Pregnancy.—A. K. Paine says that while the theory of the serodiagnosis of pregnancy is simple, the actual practice of the test demands a high degree of laboratory skill and most painstaking regard for the minutest detail. Thirty c. c. of the patient's blood are taken from one of the superficial veins; placental albumin is obtained from fresh normal placentas, and freed from all dialyzable substances. One gram of this placental albumin is placed in a dialyzer, together with 1.5 c. c. of the serum, and the dialyzer is then washed in running water to remove any possible albumin contamination from its outer surface. It is then placed in a container with twenty c. c. of distilled water, the top of which should be twenty-five cm. above the top of the dialyzer contents and covered with a layer of toluol. The container is closed with a sterile cotton plug and placed in an incubator at 37.5° C. for sixteen hours when the dialyzate is tested for the products of albumin digestion. Ten c. c. are taken free from toluol and placed in a small beaker; to it are added two c. c. of a one per cent. solution of ninhydrin, after which it is boiled for one minute after

the first bubbles appear. The color is red after thirty minutes. A clear or yellow color denotes a negative result, a violet, light lavender, or bluish purple color shows a positive result. This test, he thinks, is by far the most accurate method at our disposal for the diagnosis of pregnancy, and available where the services of a competent laboratory can be had, but until some method is devised whereby the materials used, especially the prepared placental albumin, may be kept for some time and in a more convenient form, and trustworthy dialyzers are more easily procurable, it will not be generally available. It places in our hands a possible means of making remarkably accurate diagnosis of pregnancy should the exigencies of any case demand a prompt determination of the fact.

Effect of "606" on the Eye; Seven Cases of Serious Eye Complications Following Its Use.—P. S. McAdams, in summing up the effects of "606" on the eye, says that no case of injury to the healthy eye has been proved. The consensus is that it is innocuous to the healthy eye. A favorable result is to be expected from salvarsan in syphilitic disease of the iris, the choroid, retina, and optic nerve in syphilitic paralysis of the ocular muscles, and sometimes in interstitial keratitis. It is an effective specific remedy in syphilis of the eye especially indicated when speedy aid is urgent. It is not a panacea for ocular syphilis and cannot entirely replace other preparations. No benefit is produced in simple, primary optic atrophy.

Significance of Earache.—Irving Sobotky pleads with the practitioner to treat earache with the respect it deserves, and emphasizes these points: 1. The cause of the earache must be determined. 2. Treatment must be prompt. 3. The patient must be closely watched for complications (mastoiditis). 4. If complications arise, despite careful treatment, the patient must be immediately referred to an otologist. 5. In repeated attacks of earache, nasal irrigations and violent blowing of the nose must be prohibited. 6. Enlarged tonsils and all adenoid tissue must be removed.

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Relation between Epilepsy and Migraine.—George A. Waterman believes that, since we must accept a relation between these two neuroses in different generations of the same family and in different attacks of the same person, symptoms of epilepsy in an attack of migraine may indicate a relation between the two diseases in that attack, and need not stamp it as essentially epileptic.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

February 28, 1914

The Charge of "Human Vivisection" in Antivivisection Literature.—R. M. Pearce avers that the recent activities of the antivivisectionists are directed, not so much against animal experimentation as against new methods of scientific procedures in medicine, which the antivivisectionists term "human vivisection." The apparent cooperation of the American Antivivisection Society with forces opposed to improvement of public health must be noted. He reviews a number of points—the atropine and morphine investigation, thyroid extract in the insane, lumbar puncture, misleading statements as to the serum treatment of meningitis, criticisms of the use of tuberculin, of cerebral localization, a distorted view of Noguchi's luetin test for syphilis. He concludes that three courses are open to the medical profession: 1. To refuse to try any new drug, new operation, or new means of diagnosis, because it would be an "experiment" and an example of "human vivisection." 2. To test new ideas, suggestions, and methods at once on man. 3. To make the first tests and experiments on animals, and then it would be found useful and not dangerous to apply them, with every possible safeguard, to man. If the first course were followed all progress would cease, and all medical and surgical treatment would become stereotyped. The second involves a moral responsibility which few conscientious physicians would care to assume. The third has a basis in a definite ethical principle. Which course would any sensible person choose as a guide to medical practice?

Ischemic Lumbago.—J. R. Hunt, in a previous paper, directed attention to a lumbar type of intermittent claudication, characterized by painful spasm of the lumbar muscles after walking or standing, and which promptly disappears after rest. Pain is bilateral and limited above by the twelfth rib, and below by the crest of the ilium. In the present paper this clinical picture is the subject of further study, and is enlarged by description of a strictly unilateral type, a milder form of lumbar intermittent claudication, which resembles lumbago, though evidently vascular from its intermittent nature—the ischemic lumbago. In ischemic lumbago there is a sensation of pain or painful cramp, associated with weakness or stiffness, localized in the lumbar muscles; and it may be bilateral or strictly unilateral. If there is no effort nor strain on the muscles, there is no pain. When pain occurs, any posture which places the affected muscles at rest promptly produces relief. For diagnostic purposes, bending movements of the spine may be used to induce pain and demonstrate its local and intermittent character. Movements of the spine are normal and, in the beginning, painless, an important distinguishing feature from lumbago of rheumatic origin. In the cases under the author's observation, pain was not influenced by changes of weather, and this may be regarded as another point of difference.

Snare versus Sluder Operation in Tonsillectomy.—H. C. Todd, after thoroughly testing the original Sluder tonsillotome, and Ballenger's modification of it, is of the opinion that a considerable proportion of tonsils cannot be removed by it at all, or only with the greatest difficulty. The following method he holds to be of equal service in all cases: The patient is placed in the dorsal position, the head slightly lowered, and in complete relaxation, obtained by ether anesthesia, and the throat is thoroughly illuminated by a good headlight. Grasp the tonsil firmly and deeply with a curved tenaculum, lift the gland from its bed and dissect it from the surrounding structure with a rightangled knife (or scalpel), slip a snare over the tonsil down to its base, and remove it. With such a simple, complete, and universal method as the snare operation, it seems to the author difficult to understand why

many appear to be earnestly searching for some other method and willing to try a new instrument and adopt another technic.

Prognostic Value of Slight or Transient Albuminuria, with Special Reference to Life Insurance Examinations.—H. W. Cook states that large quantities of albumin always indicate impairment, and even traces indicate it in applicants over forty years old. When we consider the increasing incidence of cardiovascular and renal diseases after forty years, we must appreciate a method of examination which will enable us to say that this applicant is or is not passing albumin to a workable quantitative degree. His conclusions are: 1. In applicants over forty or forty-five years, it is of great importance to determine the presence or absence of slight albuminuria. 2. Slighter albuminurias are almost constantly overlooked by the average examiner. 3. Apparently, the only way to obtain this very vital information is to have the uranalysis made at the home office, although an improvement may be expected from the examiners' use of a more delicate and simple test, or Ulrich's test.

March 7, 1914.

Shortcircuiting the Colon.—J. R. Eastman asserts that anastomosis of the caput coli, at its lowest level, with the rectum presents all the advantages and eliminates many evils of operations now in use. Such anastomosis may be made with sutures or the Murphy button; he has employed the one and a half inch button frequently and satisfactorily. In this instance the button is quite safe, since in whatever way withdrawn it will drop into the large intestine and be readily discharged; the corrugated caput coli has adapted itself more readily to the button than to sutures. Selection of the site, however, is of more importance than method of securing the anastomosis. In order that the latter may be made on the most dependent surface of the caput coli, the appendix, though normal, should be removed if it is in the way of anastomosis or good drainage.

Psychogenic Factors in the Etiology of Mental Disease, Including a Review of Psychanalysis.—F. X. Dercum states that the increasing spread of the cult known as psychanalysis, the consequent tendency to neglect the clinical study of psychiatry, and the confusion resulting from the disregard of established clinical distinctions, have led him to undertake a consideration, first, of the value of psychogenic factors in general; and, second, of sexual factors in particular. Having completed a comprehensive review of these matters, he concludes that psychanalysis will in due course pass away, will be a matter of history, taking its place side by side with other mystic practices, as animal magnetism, mesmerism, hypnotism, braidism, metallotherapy, Perkinism, Dowieism, Eddyism, Worcesterism, divine healing, new thought, the Bergeon treatment of tuberculosis, suspension in tabes, and other weird procedures which have time and again swept the earth in epidemic form.

Rupture of the Intestine; Its Early Diagnosis.—M. Kahn, in speaking of diagnosis, says that the history is obviously of primary importance. Frequently no external sign of injury exists, so that the amount of injury to the abdominal wall gives not the slightest indication of the degree of visceral damage. Further, any injury to the abdomen may be associated with grave damage to the intestine. Few other serious conditions are likely to be confounded with traumatic rupture of the bowel. Intraabdominal hemorrhage may for a time simulate it, but here one would expect to find signs of hemorrhage most marked, namely, air hunger, anemia, thirst, restlessness, faintness, free fluid in the abdomen, etc. Both conditions may coexist, but differentiation between them is not of utmost importance, since in both treatment is prompt surgical interference; in such cases a surgical diagnosis is sufficient. In traumatic rupture of the intestine some symptoms disappear, but some of the more important endure; particularly rigidity and pain, though pain may be slight. Persistence of initial symptoms, with the history, is sufficient to warrant operation. To discover the early signs, and detect their continuance, requires the most observant supervision during the first hours of injury. The presence, then, of rigidity with pain or tenderness leads to a diagnosis of probable rupture, and is sufficient to justify exploration. The danger of an infrequent needless operation is a nullity contrasted to playing with death by delaying surgical intervention in the case of rupture.

Ultraviolet Light as a Germicidal Agent.—F. H. Verhoeff finds that a series of experiments, made at the pathological laboratory of the Massachusetts Charitable Eye and Ear Infirmary, prove conclusively that ultraviolet light cannot under any conditions destroy bacteria within the cornea without severely injuring corneal tissue, even when the latter is perfectly transparent. It does not seem possible that ultraviolet light could in practice be successfully used to destroy bacteria within a corneal abscess or ulcer; that is, when the cornea is no longer clear, even with the sacrifice of corneal tissue. For the exposures would have to be impracticably prolonged, or of such extreme intensity of light, that the heat would exceed the pure ultraviolet action. It is doubtful also whether ultraviolet light of such intensity could be made available for therapeutic purposes. It must be concluded, therefore, that, as regards direct destruction of bacteria within tissues of the body, ultraviolet light possesses no therapeutic value.

MEDICAL RECORD.

March 7, 1914.

X Ray Observations on Colonic Peristalsis and Antiperistalsis; Function of the Ileocolic Valve.—J. T. Case states that, according to present conception, the prevailing movement in the proximal colon is antiperistalsis, or anastalsis, consisting of a movement backward toward the cecum. Most observers have described antiperistalsis in the proximal colon only, basing their conclusions on animal experimentation, although antiperistalsis might appear in any portion of the large intestine. The author has for a number of years observed incompetence of the ileocolic valve in a certain proportion of cases, and remarks that in the majority of instances incompetency is associated, not with diarrhea, but with constipation. Our present knowledge of antiperistalsis in the colon makes it easy to understand why we find ileal stasis and constipa-

tion, rather than overmotility, when reflux from the colon into the ileum is no longer prevented by a competent ileocecal valve. It is generally recognized that rectal alimentation is, on the whole, unsatisfactory, but it seems to him reasonable, in the light of this knowledge, to suppose that rectal alimentation, when successful, means ileocolic valve incompetence.

Simple Subcutaneous Cut to Cure "Trigger Finger" or "Snap Finger."—Robert Abbe relates that, after studying many cases, he operated on the hand of Dr. Robert F. Weir. Under cocaine anesthesia, he made a long incision, beginning near the distal joint of the finger, but found no relief to repeated snapping tests with the exposed tendon until he had cut nearly to the middle of the palm. Then, by division of the constricting transverse fibres resting on the tendon sheath, instant relief was afforded. He decided to try, in the next case, a simple subcutaneous cut with a fine knife at this point, or *exactly under the extreme flexure crease of the palm.* In the next case he painted the part with iodine, inserted a fine bistoury in the flexure crease, and, pressing the point down to the tendon, drew it along for half an inch. The relief was instantaneous and final, the finger now closing into the palm and playing naturally without catching. A small pad of boric gauze made pressure for two days, and the trouble was cured.

Cause of Peritoneal Adhesions.—A. Bassler regards the conditions "pseudoperitoneal adhesions," "Jackson's membrane," "Lane's kink," etc., as parts of the same process, namely, reaction of the parietal peritoneum to irritation or protection from irritation or both. While the cause of these adhesions is held by many to be as yet unsettled, suggestive argument has recently been advanced that they are secondary to certain unknown toxic processes primarily taking place within the gut. Study of the bacteriology of the stools in his cases, and findings at operation and post mortem, prove to the author that adhesions are commonly due to bacteriological changes in the intestinal tract, from the lower ileum to the midtransverse colon, the result of reactions of the peritoneum to bacteria food toxins resorbed by the lymphatics and venous radicles as they emerge from the gut. He believes that in appendicitis or gallbladder infection, the colon bacillus, which in itself is a nonpyogenic organism, cannot be taken as a cause, for anaerobic bacteria can always be grown from these same specimens. In inflammation, pyonephrosis, abscess of the kidney or liver, subphrenic abscess, other bacteria, generally anaerobes, are more responsible than the colon bacillus for the infection. He refers to several anaerobes, such as Bacillus fusiformis VII and Bacillus streptococcus anaerobicus, met with in all inflammatory conditions about the appendix, and adds one which he belives to be now first described. Various other organisms are all capable of cultivation where there are adhesions, but his investigations have led him to conclude that neither one nor any combination of them is as common a finding as this bacillus. He gives a detailed description of the characteristics of the new organism, which is Gram positive and met with in three shapes, fusiform, sausage shaped, and, rarely, with square ends.

AMERICAN JOURNAL OF TROPICAL DISEASES AND PREVENTIVE MEDICINE.

Water Borne Disease in Children.—A. J. McLaughlin, in an investigation of the effect of sewage pollution of water on infant mortality, found that gross pollution usually coincides with an excessive infant mortality, which is especially high in the winter and spring. While it is often impossible and always difficult to convince adults that certain simple hygienic measures will prevent disease, the receptive mind of the child quickly accepts principles and eagerly applies them, and children should be taught in school both the fundamentals of personal and family hygiene, and the fact that it is their right to demand from the municipalities safe water, which must, furthermore, be subjected daily to bacteriological examination. Two primary facts should be taught in regard to food infections: 1. Contamination of food or drink with the fingers may be equivalent to homicide; and, 2, that such results can be avoided by careful cleansing of hands and nails after using the toilet and before handling food and drink. Such instruction would reduce the incidence not only of typhoid fever, but also of bacillary dysentery and the conditions commonly grouped as diarrhea and enteritis of children.

Dementia præcox.—Bayard Holmes lays stress on the fact that a positive laboratory diagnosis of this disease, from which probably sixty per cent. of asylum inmates are suffering, can now be made by means of Abderhalden's defensive ferment reaction, Fauser having demonstrated a degenerative process of the testicle or ovary in this disease which can be recognized by the Abderhalden procedure. He also quotes approvingly Lundvall's treatment of the disease, which is said to cure thirty per cent. or more and consists in injecting subcutaneously, when the blood has shown a polycythemia and leucopenia, two to twenty c. c. of a solution made up of sodium nucleate, 100 parts; arsenic trioxide, 0.05; hetol (sodium cinnamate), 10; and distilled water, 400. This should be sterilized before use and administered warm. The dose should be repeated as soon as the resulting leucocytosis has subsided, and the treatment continued over a long time.

ANNALS OF OPHTHALMOLOGY.

Diagnostic and Therapeutic Uses of Tuberculin in Ocular Diseases.—A. Edward Davis concludes that the tuberculin reaction tests play as important a part in arriving at a correct diagnosis in tuberculous diseases as does the Wassermann reaction in syphilitic diseases. Both are of the utmost value in making a differential diagnosis. As a therapeutic agent, tuberculin, used in the right way, is the most valuable remedy we possess in the treatment of ocular tuberculosis. Used consistently and persistently the results accomplished at times are little short of wonderful, but it should be ever kept in mind that we are dealing with a powerful toxin, and with one that is capable of doing much harm, if not properly given and in the right dose. Each patient must, therefore, be individualized and treated according to his or her reaction, for we are dealing with an agent that is not a cure in itself,

but acts by stimulating the body cells to manufacture the antibodies or protective materials for its own defense against the tubercle bacillus.

Relation of General Arteriosclerosis to Certain Ocular Conditions.—Elsworth Smith divides the etiological factors of arteriosclerosis into four great classes: 1, Wear and tear of life; 2, acute infections, syphilis, eruptive fevers, diphtheria, influenza, typhoid, and tuberculosis; 3, intoxications, alcohol, nicotine, lead, endogenous toxins from faulty metabolism, together with autointoxications and autoinfections from the gastrointestinal tract; 4, conditions that keep up high blood tension, such as overeating. With regard to the treatment of all ocular conditions which can reasonably be assumed to be dependent upon general arteriosclerosis, he maintains that they should have the benefit of a general therapeutic regime along the following lines: 1, When the conditions in the eye are so grave as to threaten integrity, the patient should be immediately placed at complete rest in bed, with the hope of thereby assisting in the reduction of the arterial tension, and thus averting a calamity in the eye, as well as in the heart, brain, etc.; 2, if the condition in the eye, or the general condition, is not urgent enough to require complete rest in bed, the patient should be urged to pursue the even tenor of his way, free as possible from all sources of worry and strain. The strenuous life must be dropped, and, while it is not well to enjoin an active man from all occupation, he must be taught moderation in work. Moderate, graduated exercise must be insisted on, and, what is most important, a careful diet. Alcohol, tobacco, and meat should be denied, or at least greatly limited. The most efficient drugs are mercury and iodide of potassium, even when syphilis is not present, especially the latter, as it has a double value.

ANNALS OF SURGERY.

January, 1914.

Pericolic Membranous Films and Bands.—L. S. Pilcher believes that it is easy to accept the theory that there are persistent remnants of embryonic conditions which become contributors to disease and disability. The mechanical irritation of prolapsing organs tugging at a structure which restrains, or infection transmitted from within the bowel, establishes a mild degree of proliferative inflammation that makes more dense and strong the constricting fibres until they interfere with peristalsis, obstruct the fecal current, and aggravate a fecal stasis. Sufficient clinical observation has now accumulated to confirm and emphasize the teaching that right sided pericolic membraniform veils and bands, crippling the peristaltic functions of cecum and ascending colon, were of frequent occurrence, and that, when present, they form a well defined surgical condition which always is a menace as to the future, and in many cases already the cause of ill health. Operation, if planned, should make it possible to explore for their presence and do whatever is necessary for their removal.

Localization of Foreign Bodies within Tissues.—A. J. Brown suggests the following method of localizing foreign bodies as simple and accurate, requiring no apparatus beyond the usual x ray outfit: Preliminary radiographic examination to substantiate the diagnosis is made and the approximate position of the foreign body noted. The area of skin over the foreign body, and a surrounding area of a few inches, is then prepared in the following manner. Vertical and horizontal lines, running at right angles to each other, are painted upon the skin with silver nitrate solution, thus laying the skin out into squares. The size of the squares can easily be made to bear a proper relation to the size of the foreign body on the one hand, and that of part to be prepared on the other. As a rule, one inch squares will be found very convenient. The component lines of the checkerboard thus formed are numbered for the purpose of more easily locating the individual square. The area thus painted should include one half the circumference of the part. As an example, in the knee the first vertical line should run along the anterointernal margin of the knee, and the last along the posteroexternal. The horizontal line should connect the vertical. The silver solution is allowed to turn black and the skin thus stained. The lines are then painted over with white lead paint and this is allowed to dry. Two radiographs are now taken, one anteroposteriorly and one laterally, the target of the tube being placed directly over the position of the foreign body, as shown in the preliminary skiagraph.

Tumors of the Carotid Body.—J. C. Callison and J. E. McKenty state that subjective symptoms are due to involvement of the cranial and sympathetic nerves. There may be difficulty in phonation or swallowing or an annoying cough or deafness or conjunctivitis. At a late stage some pain occurs as nerve trunks are being included in the growth. The subjective symptoms are surprisingly few. The findings on examination will vary according to the stage at which the patient presents himself. In the early stage there is a tumor from the size of a robin's egg to one that can just be palpated. It is underneath the sternomastoid, or at its anterior margin, on the level with the upper border of the thyroid cartilage. It is egg shaped, single, discrete, firm, elastic, movable laterally, but not vertically. There is pulsation transmitted, but it is not expansile. A stethoscope placed over the tumor will reveal a distinct bruit in most cases. As the tumor progresses the picture changes, and more and more structures are involved. Perhaps the most constant of the later symptoms is the paralysis due to involvement of the recurrent laryngeal, while its fibres are still within the vagus. These reveal themselves as paralyses of the cords and other laryngeal and pharyngeal muscles, leading to difficult phonation and deglutition. The larynx may be congested and catarrhal. The pupils may be irregular and fail to react to light on the affected side. When the tumor becomes more extensive and invades surrounding structures its mobility may be distinctly less. At this stage the larynx may be pushed to one side, or the tumor may bulge into the pharynx.

ARCHIVES OF DIAGNOSIS

January, 1914.

Digestion of a Murphy Button.—O. Kiliani reports the case of a man in whom, four years after a posterior gastroenterostomy with insertion of a Murphy button, continued pain in the epigastrium was experienced, with vomiting at intervals. Upon

opening the stomach the wire spiral spring from the Murphy button was found in the pylorus and removed without much difficulty. Ether pneumonia followed the operation, leading to the patient's death in six days. At autopsy the two cylinders of the button, unnoticed at the recent operation, were found lying loose in the stomach, covered with food particles and mucus. The remaining parts of the button—mushrooms, middle plate, and two smaller springs—must have undergone more or less complete digestion.

Periarticular Suppuration of Gonococcic Origin.—De Witt Stetten mentions the case of a woman in whom, upon subsidence of what appeared to be an acute rheumatism, there remained, after seven weeks, an extraarticular abscess in the tendon sheath of the left tibialis posticus, behind the internal malleolus. Aspiration yielded pus containing living gonococci in pure culture. In a second case there was an infection of the dorsum of the hand simulating an ordinary pyogenic phlegmon. Incision again showed pus with living gonococci in pure culture, and radiography later revealed destruction of the metacarpophalangeal joint of the adjacent finger. Stetten concludes that periarticular suppurations of pure gonococcic origin may occur simulating an ordinary pyogenic tendosynovitis or cellulitis. They apparently follow an arthritis of a neighboring joint, which in itself may have been nonsuppurative. A history of gonorrheal infection, a urethritis, the previous articular lesions, the absence of an external point of entry for the infection, and the presence of gonococci in the urethral or vaginal secretions may suggest the diagnosis, which will be confirmed by finding the organisms in the pus of the periarticular lesion. The condition is subacute and offers a favorable prognosis if the pus focus is promptly incised and the systemic infection combated by means of appropriate vaccine therapy. Baur's contentions that in gonorrheal rheumatism the gonococcus does not live after the sixth day of the disease and that it cannot exist in the soft periarticular tissues are unwarranted.

Prostatic Incident in Diabetes.—Heinrich Stern asserts that association of prostatic and diabetic states is frequent and of great clinical importance. In the diabetic, prostatic hypertrophy may appear ten, twenty, and even thirty years earlier than in the normal individual. While sometimes the result of a gonorrheal prostatitis in which the sugar laden urine participates in the perpetuation of the inflammatory process, the early prostatic hypertrophy is often due to another infection—colon bacillus, yeasts, and fungi—or may be evoked by the urinary glucose directly, or again, by nutritive or secretory disturbances of the gland, these disturbances, in turn, being due to local or general angiosclerosis or sometimes, perhaps, to certain irritating or toxic elements in the blood. An enlarged prostate may be the cause of cystitis, which is more obvious than the prostatic condition itself. Prostatic hypertrophy based on diabetes differs from the usual form, not only in developing earlier in life, but usually in involving the greater part of the gland. In a case reported, treatment of the diabetes symptoms afforded likewise relief of the subjective prostatic phenomena.

Diagnostic Pitfalls in Pediatrics.—H. B. Sheffield, discussing, among other subjects, the diagnosis of pyloric stenosis in infants, states that in spite of recent improved methods, such as the x ray-bismuth test and the duodenal bucket, it is still impossible to differentiate a mild case of true congenital pyloric stenosis from a severe case of the spasmodic variety. In one of the author's cases, the fact that the infant did well for the first month pointed to a spasmodic condition; yet, ten days later, after the usual methods of treatment had been found useless, operative intervention showed the pylorus to be cartilaginous, thick, and barely permeable to a minute probe.

Symptomatology of Hyperthyroidism.—W. Harmar Good lays stress on menorrhagia as a symptom of hyperthroidism. He observed it in eighty-five per cent. of his cases. It is usually not painful. Often it is ascribed to venereal excesses when the excesses and menorrhagia are but symptoms of hyperthyroidism. The last named state seems a deciding factor in some abortions.

JOURNAL OF INFECTIOUS DISEASES.

January 1914.

Transmutations within the Streptococcus-Pneumococcus Group.—Rosenow reports the transmutation of streptococci into pneumococci and vice versa. In twenty-four instances strains of streptococci have been converted into pneumococci. Thirteen strains of pneumococci were made to correspond to hemolytic streptococci; transformation being complete as shown by every known test. It seems probable that transformations take place in foci of infection where streptococci and pneumococci possibly evolve new affinities for tissues.

Rabies-Hydrophobia Vaccine Treatment.—Cumming states that the vital preliminary in the vaccine treatment is the proper cauterization of the wound, and that a second, and equally important step, is immediate antirabic treatment. By proper cauterization with formalin it may be possible to reduce by one half or more the infecting virus that may be present in a severe lacerating wound. This, followed by the vaccine treatment, should reduce mortality from hydrophobia to zero. Cumming's method consists in the use of a virus that has been dialyzed in collodion sacs against running distilled water. Such a vaccine confers marked protection against infection, and, furthermore, when injected intracranially, will not produce the disease. Therefore, subcutaneous injections of the dialyzed vaccine are not only perfectly safe as a prophylactic, but confer the highest degree of immunity. A series of twelve successive daily injections of the standard dialyzed vaccine gives the same degree of immunity as obtained by the intensive form of Pasteur treatment, which consists of twenty-one days of injection. The author states that over 800 persons bitten by animals suspected of having rabies were treated by this method. Of this number, sixty-two per cent. were bitten by animals proved by laboratory examination to have been rabid, and in every case the treatment was successful.

Observations on Antibody Formation in Typhoid.—Moon reports experiments made in order

to observe the behavior of the agglutinin curve in human subjects. Although the agglutinins were down to the normal at the end of two years, he found that antibody formation occurred much more rapidly in those who had been sensitized or had had typhoid than in those who had been injected for the first time. He concludes that the protective effect of antityphoid inoculation lasts longer than two years, and that it is due, not so much to the persistence of antibodies in the blood, as to the promptness with which new antibodies are formed in the presence of typhoid proteins.

Sanitary Significance of Body Cells in Milk.—Breed believes that it is impossible to make even a guess as to final conclusions regarding the significance of variations in number and character of body cells. The cells certainly have not the significance of pus cells under ordinary conditions, nor does it seem probable that it will be possible to recognize admixture of pathological with normal milk by means of these cells alone.

Tubercle Bacilli in the Blood.—Berry reports that microscopic examination of fifty-one specimens of blood taken from patients in advanced stages of tuberculosis proved negative, no tubercle bacilli being found. This result, according to the author, is in agreement with the experience of a large number of observers.

SURGERY, GYNECOLOGY AND OBSTETRICS.

January, 1914.

Postoperative Results of Trachelorrhaphy.—V. N. Leonard contrasts the postoperative results of trachelorrhaphy and amputation of the cervix in the following conclusions: The presence of a marked cervicitis should be considered as a contraindication to performance of trachelorrhaphy. Although serious postoperative hemorrhage is not infrequent after amputation of the cervix, five per cent., this accident is very uncommon after trachelorrhaphy. Influence of trachelorrhaphy in improving the general condition of the patient is, in properly selected cases, quite as marked as amputation of the cervix. In each instance about ninety per cent. of the patients report improvement in general health. Although trachelorrhaphy may render a mild endocervicitis more amenable to treatment, it cannot be considered, like amputation of the cervix, as a curative measure. Laceration of the cervix is a frequent cause of dysmenorrhea in multiparæ, and its removal by either amputation of the cervix or trachelorrhaphy is followed by the disappearance or amelioration of menstrual pain in over sixty per cent. of cases. Fertility is much more likely to follow trachelorrhaphy than amputation of the cervix. After amputation of the cervix the incidence of abortion and premature delivery is greatly increased, while trachelorrhaphy has no effect on the course of subsequent pregnancy. Labor after amputation of the cervix is usually difficult, while after trachelorrhaphy it is almost always normal. Amputation of the cervix is an operation to be avoided in women in the child bearing period until all other therapeutic means have been exhausted. Trachelorrhaphy has a therapeutic efficiency, in properly selected cases, quite as high as amputation of the cervix, and, having no influence upon the subsequent marital history of the patient, is the operation of choice for women in the child bearing period.

Recurrences and Metastases of Carcinoma of the Breast.—G. E. Pfahler has had such striking success in the treatment of these cases that he makes the following conclusions: The application of the Röntgen rays will at times cause a disappearance of both small and extensive recurrent and metastatic carcinomata. The disease can at times be made to disappear when it covers the greater portion of the chest. In at least one case there seemed to be produced some constitutional condition which led to the rapid disappearance of carcinomatous tissue which had not even been exposed to the rays. The additional administration of thyroid extract in small doses seems to aid materially in the cure of the disease. The disease should be treated as actively and with as large doses as circumstances will permit, using every possible means for the protection of the skin. The best time to treat with the rays is immediately after operation, when least disease is present. This postoperative treatment should be thorough and given with the same care that would be used with palpable disease.

Proceedings of Societies.

FEDERATION OF STATE MEDICAL EXAMINING BOARDS OF THE UNITED STATES.

Second Annual Session, Held at the Congress Hotel, Chicago, February 25, 1914.

The President, Dr. CHARLES H. COOK, of Natick, Massachusetts, in the Chair.

Public Health Administration.—Assistant Surgeon General W. C. RUCKER, of the United States Public Health Service, Washington, D. C., stated that morbidity reports of the communicable diseases showed the location of cases which constituted foci from which disease might be spread to the well. The collection of morbidity reports thus made it possible to know where to take the proper precautions for the protection of persons who might be exposed to a given disease, and therefore acted as a prophylactic measure for the community at large. The knowledge of the occurrence of disease made it possible to see that the sick received proper treatment, not only from a preventive, but from a curative standpoint. Morbidity statistics were of value to the local health officer in that they gave him the knowledge upon which to undertake operations for the prevention of the spread of disease in his particular locality. The United States Government, in its work of preventing the interstate spread of disease, found that morbidity information was absolutely essential. Three things were necessary to efficient public health administration: First, the man, well trained, well remunerated, full time health officer; second, the power, the intelligent, uniform, accurate law, and the adequate appropriation; third, the knowledge of the location and prevalence of disease, in order that it might be controlled by the cooperative effort of the general public, the medical profession, and the public health administrator.

Dr. JOHN A. WITHERSPOON, of Nashville, said it was unfortunate that in this country they had never seemingly appreciated the real value of human life. They had never appreciated that public health was a science and one that must be carried on by the very best men of the profession. The science of medicine had developed so thoroughly in the last decade along the lines of preventive medicine that they now had broad gauged, scientific men who could handle these problems. The American people must awaken to a realization of the fact that men must be trained for this work, and that politics should not enter into it any more than it did into the courts.

Dr. VICTOR C. VAUGHAN, of Ann Arbor, said that since the discovery of the tubercle bacillus, in 1882, the death rate from tuberculosis in the United States had been reduced fifty-four per cent. In the past ten years 200,000 lives had been saved from tuberculosis. A battle in which 20,000 lives were lost would stir the world at the time and fill the pages of the historian of the future. Preventive medicine in the United States had averaged 20,000 lives a year saved in the last ten years. The average of human life had been increased nearly four years in the last decade. The average of the human life in the United States today was fifty years, and if they were to apply exactly what they knew today, the average human life in this country would be increased about fifteen years more. Since he began the practice of medicine, scarlet fever had been reduced in its death rate from fifty-four per 100,000 in the registered area to six; and diphtheria had been reduced from 117 to eighteen. Complete morbidity statistics would show the people their value, and he thought the people then would be intelligent enough to respond.

A Uniform Minimum Curriculum for Medical Schools.—Dr. JOHN L. HEFFRON, of Syracuse, pointed out that they should have a simple, straightforward statement of what were considered fundamental subjects and an outline for each, giving what were recognized as the essential principles to be mastered, and a standard by which to measure knowledge and power. With such a minimum curriculum, each college recognized by a State as worthy, could offer electives in various subjects so that every student could pursue a more extended course in the particular subject which commanded his greater interest. In such a way the university idea of education could be carried out. The formulation of any curriculum should be the work of men trained in the science of education. The very terms of the law by which members of the medical examining boards in most of the States were selected, made it impossible for them to be teachers. The purpose of such a law was self evident. The cause of medical education would be forwarded if this federation secured the cooperation of specialists in universities and in medical education and, with their aid, formulated a uniform minimum curriculum for medical schools to present for adoption to the various States, and this great federation should endeavor to secure such an administration as would really test by practical examinations the knowledge of all applicants.

Dr. JOHN K. SCUDDER, of Cincinnati, doubted the advisability of attempting to adopt a uniform curriculum for medical schools, as the enforcement would have to lie with the individual board, and even then within powers written into the various State medical laws. He thought if this curriculum was hard and fast and not flexible, it would defeat the very object desired, the rational education of the student, and would prove a serious detriment to the already burdened college. Flexibility was the keynote of his argument and continuously holding in mind the teaching of medical students to think and not to make automatons of them, which was unfortunately the tendency of modern education.

Dr. J. M. BALDY, of Philadelphia, said that Pennsylvania had no idea of adopting hard and fast rules in the administration of its law. The bureau unanimously agreed that flexibility was the proper and only thing, and it was the only way any law could be intelligently enforced.

The Standardization of Medical Education.—Dr. HAROLD C. ERNST, of Harvard University, said it was unfortunate that the teaching of any important branch of medicine should be under the control of a single individual. The desire for standardization had extended already to an unfortunate extent in the almost universal demand that a candidate for registration to practise medicine should be the possessor of the degree of M. D. This demand ignored the fact that this degree was really of university grade; that it was not a prerequisite to the practice of medicine in the older countries, and that it should not be in this. What the supporters of such a requirement really meant was that the candidate should have a degree in medicine, which should be a certificate of having had proper medical training; whether it was a doctorate or not was entirely aside from the question. This was a matter of academic standing, pure and simple. The faculty of medicine of Harvard had taken a definite position in regard to the hospital year as a prerequisite to a license to practise. After considering all the facts that could be gathered, a committee of the faculty reported that such a step was not advisable, a strong determining factor in the formation of this opinion being the rule of some of the most important hospitals that their interns must be graduates in medicine and holders of that degree.

Dr. ABRAHAM JACOBI, of New York, stated that the standard of medical education even now should be raised, so that when young men were sent out to practise among the people they would know more than preventive medicine. The people wanted to know, not only about preventive medicine, but what this or that doctor had done in a similar case, and whether they could be cured or not. This was just as important, both from a practical and theoretical point of view, as to consume so much time in talking about preventive medicine which they did not put into practice.

Dr. N. P. COLWELL, of Chicago, referred to the decrease in the number of medical colleges since 1904, and said it meant a distinct advance. The diminution from 166 down to approximately 100 medical schools had been largely due to the merging of two or more medical colleges in the various States into one stronger and better equipped school.

The decrease in the number of medical colleges had been largely brought about through the voluntary action of the colleges themselves. As to prescription writing, there had been a positive effort made in the medical colleges to have prescriptions written for individual cases and to discontinue the method of using numbers, as has been done in the past.

Use of the Government Medical Services in Standardizing Medical Education.—Lieutenant-Colonel JOHN R. KEAN, of the Medical Corps of the United States Army, spoke of the need of some central examining board which, while determining the competence to practise of medical graduates, might at the same time set a uniform and reasonably high standard of medical education, and confer the right to practise anywhere in the United States. If, therefore, such a board could be appointed by the President of the United States for the examination of officers for the medical reserve corps, of a composition which would insure a high standard of requirement, and the State boards would agree to accept and license, without examination, the holders of reserve corps commissions, as was now done by many States for medical officers of the government services, the thing could be accomplished.

Dr. DE WITT G. WILCOX, of Boston, said that any physician who had given even superficial consideration to this subject would agree as to the absurdity of using forty or fifty different standards for testing the ability of physicians to practise in the United States and its dependencies. The people of Maine did not require any different therapy from the people of Florida or of California. The difficulty had been to find some method by which one board could agree to pass upon all of the graduates in medicine. There were constitutional difficulties in the way of establishing such a National board, either compulsory or optional.

Dr. WILLIAM L. RODMAN, of Philadelphia, said that inasmuch as the constitution of the United States had been amended twice recently, it would not be difficult to amend it so as to establish a National examining board, and when a man had passed such a board he should receive a license or diploma which would be broad enough to permit him to practise anywhere in the United States.

What Instruction Ought Medical Colleges to Give in Pharmacology and Therapeutics?—Dr. SAMUEL W. LAMBERT, of New York, said there was a great amount of good in the older materia medica and certainly more good than could be found by the laboratory methods of pharmacology, but there was much that was inert and useless, and it was the duty of a school to select the good from the bad and to limit teaching to the essential drugs. It should be the duty of an examiner to draw out from the student, by presenting theoretical therapeutic problems, the first mention of any therapeutic measure or of any drug, and then to hold the student strictly responsible for an accurate knowledge only of the remedies mentioned and suggested by himself. The same rules could be applied to teaching the newer materia medica. The course of instruction in the laboratory of pharmacology should be given by men who had taken the M. D. degree and who had had hospital training in clinical medicine. The course should include a study of the effect of small doses of drugs upon animals and also the toxicology of larger doses in the same way. Therapeutics should be considered, not as a separate department, but as a part of the department of clinical medicine, and certain instructors should be delegated to present to the fourth year students serving as clerks, such therapeutic problems as might arise in the course of the ward service.

Viewpoint of the State Examiner.—Dr. WALTER L. BIERRING, of Des Moines, said that considered as an index of the qualifications for medical practice, an examination in pharmacology should constitute one of the best criteria of a candidate's ability to apply logically knowledge acquired in a medical school. Of equal, vital influence to the progress of therapeutics was the standardization of drugs, for in this way a unity of knowledge was established that formed an important factor in the license examination. No opportunity was to be omitted to emphasize the close relation that existed between the pharmacist and the physician. In the broader use that had been given to the term pharmacology, there was included practically all nonsurgical or nonoperative measures in the treatment of disease. From the original drug treatment it had branched out to include chemotherapy, organotherapy, serotherapy, immunotherapy, the application of various forms of physical therapy, and, perhaps, psychotherapy. The proper application of physical therapy, the underlying principles of chemotherapy, serotherapy, and immunotherapy could readily be incorporated in questions pertaining to disease conditions, thus permitting a wide range in formulating the questions, yet all with some degree of practical aspects, and thus constituting a marked improvement over some of the methods that had prevailed heretofore.

Dr. BERNARD FANTUS, of Chicago, said there was need for considerable improvement in prescription writing. This could be secured if it was realized that prescription writing could not be taught by lectures and demonstrations; that the students must be drilled in prescribing. He believed that the best results could be obtained if a course on pharmacy and prescription writing was given before the work in pharmacology was taken up. The students should be made familiar in this course with the various classes of pharmaceutical preparations and their prescription. When the student then entered on his course in pharmacology, he was ready to write prescriptions from the very beginning, and he ought to be required to write prescriptions for each of the important drugs as they were studied, paying special attention to methods of pleasant and efficient administration. When the student finally advanced to the study of therapeutics, he should be required to write prescriptions from the standpoint of the effect. If the clinical instructors would do their duty and require students to write prescriptions for the remedies needed by the patients treated in hospitals and in dispensaries, the students would leave the medical college well trained in prescribing.

Reciprocity.—Dr. J. M. BALDY, of Philadelphia, stated that the method they had adopted had been to take each individual school and judge it on its own merits, irrespective of the fact that it was in a bad environment of faulty State legislation or poorly

administered State laws. Having passed on the school and found it competent, as judged by the legal standards of Pennsylvania, as well as by the enforcement of its own standards and by its finished products, they registered that school and were ready to accept its graduates and endorse the licenses which they had received from any other State in the Union, it mattered not what State, provided only that that State would do the same with the graduates of Pennsylvania schools. The Pennsylvania law required this. They did not even ask that their estimate of Pennsylvania schools be accepted by the other State.

Election of Officers.—The following officers were elected: President, Dr. Charles H. Cook, of Natick, Massachusetts; vice-president, Dr. T. A. McCann, of Dayton, Ohio; secretary-treasurer, Dr. Otto V. Huffman, of Albany, New York; executive committee, Dr. J. M. Baldy, of Philadelphia; Dr. Herbert Harlan, of Baltimore, Maryland; and Dr. Walter L. Bierring, of Des Moines, Iowa.

Chicago was selected as the place of meeting for 1915.

Letters to the Editors.

A NOTE FROM DOCTOR BASSLER.

NEW YORK, *March 17, 1914.*

To the Editors:

Permit me to acknowledge for publication the correction of the term Bacillus adhæsioformis to Bacillus adhæsioformans. Decidedly more important than the correct term is an interest in this bacterium, as well as others that could and do cause adhesions to form, so that a better knowledge of their etiology would be understood.

ANTHONY BASSLER, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Stammering and Cognate Defects of Speech. By C. S. BLUEMEL. In Two Volumes. Volume I: The Psychology of Stammering; Volume II: Contemporaneous Systems of Treating Stammering, Their Possibilities, and Limitations. New York: G. E. Stechert & Co., 1913. Pp. Vol I, vii-365; Vol. II, v-391. (Price, $5.)

It is gratifying to find in a book on a restricted topic a useful presentation of information of wide applicability. While perhaps not interested in the subject *per se*, one is thus rewarded by learning much one needs to know or reconsider. Bluemel is not a physician, yet he presents a thorough research on speech, its defects, especially from the standpoint of disorderliness in the psychic realm, along with convincing testimony from pathology and personal experience. However we may come to regard his careful inferences and temperate conclusions, his scholarly argument cannot fail to shed much light on an ever baffling and stubborn neurosis.

The postulate is outlined that heretofore stammering and cognate defects of speech have been studied almost exclusively in their physical manifestations—the point of view of physiology. The author purposes to present a research primarily from mental aspects. Volume I contains an excellent summary of psychology, especially as concerned with the genesis of speech, and abnormalities in its evolution, including sensation, mental images, association, perception, conception, cognition, volition, and the nature of thought. Subsequent chapters discuss quite fully mental types; eye mindedness; ear mindedness; the verbal image; the brain; the relation between mental imagery and voluntary speech; impairment of brain centres; aphasia in its various forms; visual amnesia and object blindness; visual verbal amnesia; articulatory, kinesthetic aphasia; auditory aphasia; the relation between motor and auditory aphasia; associational aphasia; amnesia; transitory aphasia; lowered excitability of brain centres; ability of an aphasic to repeat, to read aloud; interjectional speech; causes of aphasia, etc. Chapter VII on stammering, shows how stammering and aphasia are allied in many respects, due to the same causes; manifest the same symptoms, the specific form of aphasia being allied to auditory amnesia or auditory aphasia; reports of questionnaires—in brief, "pure stammering." Then follow analyses of secondary manifestations of the defect—physical; also acquired or kinesthetic stammering, due, like the first, to mental causes, by perversion or distortion of the mental imagery of speech; the origin of stammering in the plastic, unstable years of childhood. Chapter VIII reviews mental confusion in stammering, and Chapter IX, fear and autosuggestion, i. e., the direct effects of fear; of autosuggestion; emotional associations; the nature of fear, etc. In Chapter X are reviewed the evolution of causes and effects, and also fear; autosuggestion; multiple thought; distortion of imagery; physical stammering; pure stammering. Finally, in the second volume, the writer presents a synoptical review of the various systems employed in Europe and America in treating stammering and those he approves—a splendid appregate of resources of which the physician should avail himself. The object of the writer is achieved with vast patience, full fairness, and thoroughness.

La Sécrétion pancréatique. Par EMILE F. TERROINE. Questions biologiques actuelles. Collection de monographies publiée sous la direction de M. A. DASTRE, membre de l'Institut. Paris: Librairie scientifique A. Hermann & Fils, 1913. Pp. 133.

In this small monograph the author reviews the functions of the pancreas, not only from the standpoint of the physiology of digestion, but also from that of the modern conceptions of the pancreatic enzymes in their relations to the organism at large. Of special interest in this connection is the study of interrelations of various organs through the agency of hormones, an action which the author terms "humoral reflex." Beginning with the discovery by de Graaf, in 1671, of a secretion which he, at least, thought to be derived from the pancreas, the author traces its history up to the time of Pavloff. He then reviews in turn the excitants of the secretion and mechanism of the excitosecretory action of acids up to the labors of Bayliss and Startling; the humoral characteristics of the secretion; the chemical and functional correlation between the pancreas and the intestine and finally the humoral reflex. The author regards the existence of the latter as fully established by experimentation, even though many problems are still to be solved.

Die Lokalanästhesie, ihre wissenschaftlichen Grundlagen und praktische Anwendung. Ein Hand- und Lehrbuch. Von Prof. Dr. HEINRICH BRAUN, Obermedizinalrat, Direktor des königlichen Krankenstiftes in Zwickau. Dritte, völlig umgearbeitete Auflage. Mit 207 Abbildungen. Leipzig: Johann Ambrosius Barth, 1913. Pp. xv-840.

Since the appearance of the second edition of this work, in 1906, advances in local anesthesia have been so great that the author has found it advisable completely to rewrite the portion of the book dealing with the practical applications of this method. Many changes and additions have also been made in the sections on the theory of local anesthesia. There are few of the illustrations in the former editions that have not been replaced by better ones. The earlier chapters are concerned with such subjects as the history of local anesthesia, the effects of nerve compression, anemia, and cold, the osmotic tension of aqueous solutions, the absorption and local effects of anesthetic substances, etc. Next follows a systematic discussion of the several drugs employed—cocaine, tropacocaine, eucaine, holocaine, etc., a chapter on the uses of epinephrine in local anesthesia, and two chapters on the various methods of local anesthesia employed, with a general account of the indications and technic of each. In the latter half of the book the special methods of local anesthesia suitable in the various individual regions of the body are taken up, beginning with

the head and continuing with the neck, chest, abdomen, genitourinary organs, rectum, and extremities. This portion of the volume, with its numerous cuts and diagrams, cannot fail to prove useful to the surgeon and also to specialists in affections of the eye, ear, nose, and throat.

Manual of Tropical Medicine. By ALDO CASTELLANI, M. D. (Florence); privatdocent (Naples), Director of the Clinique for Tropical Diseases, Ceylon, etc., and ALBERT J CHALMERS, M. D., F. R. C. S., D. P. H., Director, Wellcome Tropical Research Laboratories, Khartoum, etc. Second Edition. New York: William Wood & Co., 1913. Pp. xxxii-1747. (Price, $9.)

Although the authors state that they have tried to keep their book as small as possible, and have omitted the various laboratory methods, detailed descriptions of bacteria, etc., it contains 1,663 pages of text, beside a complete index and list of authorities. This affords an idea of the great scope covered, even though no subject can be said to have been overloaded with matter unnecessary to the practitioner. Much attention is given to therapeutic details on the justifiable plea that practitioners working in the tropics are often deprived of works of reference. Beside the diseases peculiar to the tropics, the work contains many germaine subjects such as the various poisons, venoms, etc., used criminally or accidentally by man, against cattle, in trials by ordeal, on weapons, in fishing and hunting, trades, etc., all beautifully illustrated. On the whole the work is practically a library of all facts pertaining to tropical practice, and brought faithfully up to date, as this, the second edition, has been, it represents a valuable acquisition to physicians of all climes.

A Manual of Surgical Treatment. By Sir W. WATSON CHEYNE, Bart., C. B., D. Sc., LL. D., F. R. C. S., F. R. S., Honorary Surgeon in Ordinary to His Majesty the King, Senior Surgeon to King's College Hospital, and F. F. BURCHARD, M. S. (Lond.), F. R. C. S., Surgeon to King's College Hospital and Consulting Surgeon to the Children's Hospital, Paddington Green. New Edition. Entirely Revised and Largely Rewritten with the assistance of T. P. LEGG, M. S. (Lond.), F. R. C. S., Surgeon to the Royal Free Hospital, etc., and ARTHUR EDMUNDS, M. S. (Lond.), F. R. C. S., Surgeon to the Great Northern Central Hospital, etc. In Five Volumes. Volume V: The Treatment of the Surgical Affections of the Pancreas, Liver, and Spleen, the Neck, the Breast, and Thorax, and the Genitourinary Organs. Philadelphia and New York: Lea & Febiger, 1913. Pp. xxviii-619. (Price, $6.)

The present volume completes this manual of surgical treatment, which has undergone extensive revision so as to bring it up to date. The authors have succeeded in this, as in the preceeding volumes, in presenting a concise and systematic treatise on surgical affections and their treatment on modern lines. All superfluous matter has been eliminated and only those methods are described which the authors have found useful in their wide experience. These methods are in many instances taken, with due credit, from clinics outside of England and demonstrate the authors' broadness of mind in selecting the best wherever it is found. The description of operative measures on the gallbladder and ducts is particularly complete and the same may be said of goitre. A useful appendix on gynecological procedures which may be found necessary during laparotomy, completes the volume. The illustrations and diagrams, while not numerous, are well executed and help materially to elucidate the text. The whole treatise is adapted both to the student and practitioner of general surgery.

The Principles and Practice of Gynecology. For Students and Practitioners. By E. C. DUDLEY, A. M., M. D., Professor of Gynecology, Northwestern University Medical School, Gynecologist to St. Luke's Hospital, Chicago, etc. Sixth Revised Edition. With 439 Illustrations and 24 Full Page Plates in Colors and Monochrome. Philadelphia and New York: Lea & Febiger, 1913. Pp. xiv-795.

Dudley's *Gynecology* is so favorably known that the present edition, the sixth, cannot but meet with appreciation. The work presents the great advantage that its subjects are arranged in pathological and etiological sequence. Thus, infections and inflammations are studied concomitantly so as clearly to elucidate such disorders as vulvovaginitis, metritis, salpingitis, oophoritis, and peritonitis. The reader thus has before him what the author terms the "physiological and pathological unity" of the entire reproductive system, instead of the less logical arrangement usually resorted to, in which all the diseases of a particular organ are treated in one chapter. Space is not wasted in the form of repetitions, which must necessarily occur when the latter plan is followed. While every chapter has been brought up to date, twenty-eight plates and other illustrations have been added to explain more clearly the various operations described. The author strives conscientiously to aid the practitioner and is entitled to praise.

Gould and Pyle's Pocket Cyclopedia of Medicine and Surgery. Based Upon the Second Edition of Gould and Pyle's Cyclopedia of Practical Medicine and Surgery. Second Edition. Revised, Enlarged, and Edited by R. J. E. SCOTT, M. A., B. C. L., M. D., New York, Formerly Attending Physician to the Demilt Dispensary, etc. Philadelphia: P. Blakiston's Son & Co., 1913. (Price, $1.)

The plan of the second edition of Gould and Pyle's Pocket Cyclopedia remains as heretofore, but it has been thoroughly revised, and enlarged to the extent of 155 pages. While the information afforded by such a book is necessarily scant, its purpose is to meet immediate or emergency needs; it fills this want admirably for its diminutive size.

Cunningham's Textbook of Anatomy. Edited by ARTHUR ROBINSON, M. D., F. R. C. S. Ed., Professor of Anatomy, University of Edinburgh. Fourth Edition, Enlarged and Rewritten. Illustrated by 1124 Figures from Original Drawings, 637 of which are Printed in Colors, and Two Plates. New York: William Wood & Co., 1913. Pp. xxv-1596. (Price, $6.50.)

Unquestionably Arthur Robinson, professor of anatomy in the University of Edinburgh, the successor of Professor Cunningham, is qualified, as editor of the present edition, to uphold the high standard of excellence established by his distinguished predecessor, and with the assistance of a number of equally eminent anatomists such additions and revisions have been made as to make the fourth edition the equal of any textbook of anatomy in English. At a glance one is impressed with the text, the illustrations, and the nomenclature. The descriptions are clear and concise and made the more so by the employment of over 1,000 drawings, plates, and diagrams. Over 600 of these are beautifully done in from one to ten colors, giving the various parts an accurate perspective and elucidating the text much after the manner of an atlas. The authors have used both the old and the new nomenclature, so that those who have learned the old terms will have no difficulty in reading the text.

The volume appropriately opens with the section on embryology rewritten by the editor. Ten color diagrams, remarkably executed, aid materially the comprehension of the text. The section on osteology is written by Professor Thompson, of Oxford University. The muscular system, by Professor Paterson, of the University of Liverpool, is systematic and uniformly excellent. The exposition of central nervous system, originally prepared by Professor Cunningham and revised by Professor Smith, of the University of Manchester, is probably one of the best in English; it is profusely illustrated by varicolored diagrams. In a word, much can be said to recommend the fourth edition of this work to the general medical public.

Interclinical Notes.

That delightful bimonthly, the *Dial,* in its issue for March 1st, takes up the question of the various methods of pronouncing Latin, and avers, contrary to information we have received, that at Oxford the old fashioned English pronunciation still prevails. In the course of our adventures in that tongue, we have been obliged to learn four different methods, viz., the old English, the French, the modern Italian, and the Continental; the Italian, which, except in France, is used throughout the Roman Catholic church, both by priest and choir, is by long odds the most musical, and one would think the more logical also, just as modern Greeks may be considered to know best how Demosthenes spoke and the English to be the best judges of the pronunciation of Anglo-Saxon, as well as of Elizabethan English. We will gladly accept any pronunciation

if only physicians will respect Latin and Greek sufficiently to submit their additions to our nomenclature to some competent etymologist and spare us the increasing horrors in the new editions of our dictionaries.

* * *

For the word, isolated, in our note on heroine last week, the word, derived, should be substituted. Heroine is the diacetyl ester of morphine, hence though derived from opium can hardly be said to be isolated from it. While this difference may seem no great matter, such aberrant use of words is not in consonance with the meticulous onomatological precision for which these notes are so justly famous.

* * *

A short story of unusual interest and distinction appeared in the *Survey* for March 7th, by John Palmer Gavit, entitled Some Inf'mation for Mother. The elementary facts concerning reproduction are communicated to a little girl by a grave scientist, and the child finally runs away to give mama the new and important information. The story is told with charming humor and tact and might serve as a model for parents if all little girls were as bright and as apposite in their comments as the heroine.

* * *

The Trapping of Rhoom, by George Sterling, details further adventures of our young friends of three hundred thousand years ago, Uk and O-o, in the March month end *Popular*. Save for some conversational limitations, the gentlemen of that age bore—*crede auctori*—the most remarkable resemblance to those of the twentieth century. Rhoom was a mammoth, and furnished food eventually to the troglodytes; a furnished Rhoom perhaps we might call him, were it not quite beneath our dignity.

* * *

Publicity agent for a third rate medical school is the first position offered Amy Jakes, the adventuress, in The Mother of Becket, by Mary Synon in *Women's Stories* for March 15th. The story is outrageously funny, although it uses coincidence somewhat coolly, but we doubt if there are any more Truax medical schools since Mr. Flexner began his crusade

* * *

From a story in the March *Wide World Magazine*, My Chinese Husband, we learn that it is the disagreeable custom in the interior of China not to attend the wife in childbirth; there is neither doctor nor nurse and etiquette forbids the presence of relatives. The writer is severe on the missionaries, who refused to aid her in any way. The apparent moral of the story is that young women who marry Chinamen must take care to keep out of China.

* * *

One of the most remarkable compliments we have heard paid to American intelligence is the statement by a great publisher that the writings of H. G. Wells sell better in the United States than in England; Wells is as close to being a genius as a living man can ever be. His admirers will read with delight in the March *Century* part of his prophetic trilogy, The World Set Free.

* * *

A story translated from the French of Paul Bourget, The Patch of Nettles, opens the March *Strand Magazine*. It is an ingenious tale of how a young woman escaped capture during the Revolution by simulating smallpox. This was accomplished by beating her about the head, neck and body with nettles, a very painful performance according to the author, but not one that leads to serious results. The hero, Cauvin, subsequently becomes chief surgeon and a baron of the Empire.

* * *

Mr. Alfred Henry Lewis's article, From the Field Notes of a Reformer, will entertain and instruct physicians as taxpayers when they read it in the February *Pearson's;* and, as our friends have to purchase shirts and other garments like ordinary people, they will read also with more or less amusement and edification the revelations of Arno Dosch on Advertising Honesty. *Pearson's* is now an absolutely unique magazine and is worth reading for that reason beside many others.

* * *

Doubtless The Saber Tooth, by George Sterling in the Popular for February 1st, abounds in inaccuracies, for the scene is laid over three hundred thousand years ago when that kind of a tiger was plentiful, but the tale has verisimilitude just the same and is exciting to boot. Its appeal to physicians lies in its being based on the theory of evolution. There are other stories about Chinamen, detectives, cowboys, circus men, sealers, and other fur hunters, to suit all tastes in fiction and admirably done.

Meetings of Local Medical Societies.

MONDAY, *March 23d.*—Therapeutic Club, New York; Medical Society of the County of New York.

TUESDAY, *March 24th.*—New York Psychoanalytic Society; New York Dermatological Society; Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Pathology); New York Medical Union; New York Otological Society; New York City Riverside Practitioners' Society; Valentine Mott Medical Society, New York; Washington Heights Medical Society, New York.

WEDNESDAY, *March 25th.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; New York Society of Internal Medicine; Schenectady Academy of Medicine.

THURSDAY, *March 26th.*—New York Academy of Medicine (Section in Obstetrics and Gynecology); Ex-Interne Society of Seney Hospital, Brooklyn; Medical Union, Buffalo; Hospital Graduates' Club, New York; New York Physicians' Association.

FRIDAY, *March 27th.*—New York Society of German Physicians; New York Clinical Society; Manhattan Medical Society; Brooklyn Society of Internal Medicine; Italian Medical Society of New York.

SATURDAY, *March 28th.*—New York Medical and Surgical Society; West End Medical Society; Lenox Medical and Surgical Society.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending March 11, 1914:

De Valin, Hugh, Passed Assistant Surgeon. Directed, upon completion of duties as recorder of board of examiners, to make a study of the question of the pollution of railway tracks between Washington, D. C., and Baltimore, Md. **Frost,** W. H., Passed Assistant Surgeon. Detailed, at the request of the director of the Illinois Water Supply Association, to attend a meeting of that association to be held at Urbana, Ill., March 9 to 11, 1914. **Gillespie,** J. M., Assistant Surgeon. Relieved from duty at the Hygienic Laboratory, and directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty. **Guthrie,** M. C., Passed Assistant Surgeon. Relieved from duty in the examination of arriving aliens at Gloucester City, N. J., and directed to proceed to the Canal Zone and report to the governor of the Panama Canal, relieving Surgeon J. C. Perry, for duty in connection with the maritime quarantine of the Canal. **Herring,** R. A., Passed Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed, by way of Washington, D. C., to Spartanburg, S. C., for duty under Surgeon Joseph Goldberger in connection with pellagra investigations. **Hoskins,** John K., Sanitary Engineer. Directed to proceed, as instructed by the officer in charge of the Ohio River investigations, to various points for laboratory studies and sanitary surveys of the Ohio River Watershed. **Lowe,** Dan, Epidemiologist. Directed to proceed to Washington, D. C., for conference and instructions and thence to such places as directed by the medical officer in charge of the work, for duty in connection with the epidemiological survey of typhoid fever. **Mathewson,** H. S., Surgeon. Directed to proceed to Ellis Island, N. Y., to study methods there used in the examination of aliens suspected of mental defects. **Ridlon,** J. R., Passed Assistant Surgeon. Relieved from duty at Philadelphia, and directed to proceed, by way of Washington, D. C., to Spartanburg, S. C., for duty.

under Surgeon Joseph Goldberger, in connection with pellagra investigations. **Spratt,** R. D., Passed Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Gloucester City, N. J., reporting to Surgeon Fairfax Irwin for duty in the examination of arriving aliens. **Townsend,** J. G., Assistant Surgeon. Relieved from duty at the Marine Hospital, Baltimore, Md., and directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

Board Convened.

Board of commissioned medical officers convened to meet at the bureau, Monday, March 9, 1914, for the examination of candidates to determine their fitness for appointment as Assistant Surgeon in this Service. Detail for the board: Assistant Surgeon General W. G. Stimpson, chairman; Surgeon C. H. Lavinder, member; Passed Assistant Surgeon Hugh de Valin, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending March 14, 1914:

Ashburn, P. M., Major, Medical Corps. Reports arrival at Ancon to establish a board for the study of tropical diseases. **Crile,** George W., First Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States on account of an existing emergency and is detailed as special professor, Army Medical School, Washington, D. C., session 1913-1914, to take effect on or about March 21, 1914, and will proceed on or about that date to Washington, D. C., for the purpose of delivering a course of lectures at that school; upon completion of this duty will return to his home, and upon arrival there will stand relieved from further active duty in the Medical Reserve Corps. **Guinan,** Edward R., First Lieutenant, Medical Reserve Corps. Resignation of commission accepted, effective March 10, 1914. **Shaw,** Henry A., Lieutenant Colonel, Medical Corps. Relieved from duty as attending surgeon at Boston, Mass., to take effect at such time as will enable him to comply with this order, and will proceed at the proper time to West Point, N. Y., and report in person on or about July 1, 1914, to the superintendent, United States Military Academy, for duty as surgeon and professor of military hygiene, relieving Lieutenant Colonel Frank R. Keefer, Medical Corps, who upon being thus relieved will proceed to Fort Sam Houston, Texas, and report in person to the commanding general, Southern Department, for assignment to duty as sanitary inspector of that department and as surgeon of the Cavalry Division. **Stengel,** Alfred, First Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States on account of an existing emergency and is detailed as a special professor, Army Medical School, Washington, D. C., session 1913-1914, to take effect on or about April 28, 1914, and will proceed on or about that date to Washington, D. C., for the purpose of delivering a course of lectures at that school, and on completion of this duty will return to his home, and upon arrival there stand relieved from further active duty in the Medical Reserve Corps. **Truby,** Willard F., Major, Medical Corps, and **Deshon,** George D., Lieutenant Colonel, Medical Corps. So much of paragraph 21, Special Orders No. 53, March 5, 1914, War Department, as relates to Major Truby and Lieutenant Colonel Deshon is amended to read as follows: Major Willard F. Truby in addition to his other duties, at the proper time will assume charge temporarily of the medical supply depot at Fort Mason, Ga., to relieve Lieutenant George D. Deshon; Lieutenant Colonel Deshon, after being thus relieved, will proceed to Ancon, C. Z., in time to report on May 1, 1914, to the governor of the Panama Canal for duty as superintendent of Ancon Hospital.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Navy for the week ending March 14, 1914:

Barrow, A. R., Assistant Surgeon, Medical Reserve Corps. Ordered to training station, Newport, R. I. **Dunbar,** A. W., Surgeon. Detached from the Naval Hospital, Washington, D. C., and ordered to duty as fleet surgeon, Atlantic Reserve Fleet. **Howard,** J. V., Assistant Surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered home to await orders. **McClelland,** N. M., Assistant Surgeon. Detached from the Navy Yard, Charleston, S. C., and ordered to the *Hartford*. **McDowell,** R. W., Passed Assistant Surgeon Detached from the Naval Academy, Annapolis, Md., and ordered to await orders at Annapolis, Md. **Munson,** F. M., Passed Assistant Surgeon. Ordered to the Naval Hospital, Mare Island, Cal., for treatment. **Omelvena,** J. G., Assistant Surgeon. Detached from the naval station, Cavite, P. I., and ordered home to await orders **Porter,** F. E., Passed Assistant Surgeon. Detached from the *Rainbow* and ordered to Yokohama Hospital. **Pratt,** L. L., Assistant Surgeon. Detached from the Naval Hospital, Olongapo, P. I., and ordered home to await orders. **Shipp,** E. M., Surgeon. Detached from the Naval Hospital, Yokohama, Japan, and ordered to the Naval Hospital, Puget Sound, Washington **Thompson,** Edgar, Surgeon. Detached from the naval station, Guantanamo, Cuba, and ordered to the Naval Hospital, Washington, D. C. **Woods,** E. L., Passed Assistant Surgeon. Ordered to the Naval Hospital, Washington, D. C.

Births, Marriages, and Deaths.

Married.

Steindler—Junk.—In Waterloo, Iowa, on Sunday, March 1st, Dr. Arthur Steindler, of Des Moines, Iowa, and Miss Louise Junk.

Died.

Armstrong.—In Crawford, Texas, on Sunday, March 8th, Dr. A. M. Armstrong, aged seventy-six years. **Bready.**—In Philadelphia, on Tuesday, March 10th, Dr. Conrad R. Bready, aged fifty-four years. **Brown.**—In New York, on Monday, March 9th, Dr. William Bedford Brown, aged fifty years. **Devine.**—In Troy, N. Y., on Wednesday, March 4th, Dr. John R. Devine, aged twenty-seven years. **Dillard.**—In Spencer, Va., on Saturday, February 21st, Dr. John Dillard, aged eighty-six years. **Fellows.**—In Bucksport Center, Me., on Thursday, March 5th, Dr. Albert R. Fellows. **Good.**—In Philadelphia, on Thursday, March 5th, Dr. Albert P. Good, aged forty-six years. **Grim.**—In Philadelphia, on Sunday, March 8th, Dr. Henry A. Grim, aged eighty-two years. **Harrison.**—In Clifford, Ont., on Saturday, March 7th, Dr. George Harrison, aged fifty-six years **Harrison.**—In Cub Hill, Md., on Wednesday, March 4th, Dr. Henry T. Harrison, aged sixty-nine years. **Hartman.**—In Harrisburg, Pa., on Sunday, March 1st, Dr. Paul A. Hartman, aged sixty-three years **Henderson.**—In Philadelphia, on Monday, March 9th, Dr. Thomas D. Henderson, aged thirty-six years. **Hendon.**—In Ensley, Ala., on Wednesday, March 4th, Dr. William T. Hendon, aged thirty-six years. **Hill.**—In Pine Island, Minn., on Tuesday, March 3d, Dr. Charles Hill, aged eighty-five years. **Hill.**—In Baltimore, Md., on Tuesday, February 24th, Dr. Charles Irwin Hill, aged thirty-six years. **Imwall.**—In Chicago, on Wednesday, March 4th, Dr. Charles M. Imwall, aged thirty-eight years. **McManus.**—In New York, on Thursday, March 12th, Dr. Thomas McManus, aged forty-eight years. **Moore.**—In Macon, Ga., on Wednesday, February 25th, Dr. W. B. Moore, aged fifty-eight years. **Nichols.**—In Brooklyn, N. Y., on Monday, March 9th, Dr. Hubert Nichols, aged forty-five years. **Peyton.**—In Orlando, Fla., on Friday, February 27th, Dr. John C. Peyton, aged seventy-one years. **Robinson.**—In Danville, Va., on Sunday, March 1st, Dr. William L. Robinson. **Rotch.**—In Boston, Mass., on Monday, March 9th, Dr. Thomas M. Rotch, aged sixty-five years. **Sawyer.**—In Sommerville, Mass., on Wednesday, March 4th, Dr. Emily Harriet Sawyer. **Sparhawk.**—In St. Johnsbury, Vermont, on Tuesday, March 3d, Dr. Samuel H. Sparhawk, aged seventy-two years. **Swavely.**—In Pottstown, Pa., on Wednesday, March 4th, Dr. Samuel B. Swavely, aged sixty-seven years. **Turner.**—In Brooklyn, N. Y., on Sunday, March 8th, Dr. Hiram E. Turner, aged sixty years.

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Original Communications.

TREATMENT OF CHRONIC NEPHRITIS

BY JAMES TYSON, M. D., LL. D.,

Philadelphia,

Emeritus Professor of Medicine, University of Pennsylvania.

The treatment of acute nephritis is comparatively simple, consisting for the most part in rest, a liquid and semiliquid diet with a minimum of proteid, along with depletion by the bowels and skin. Most cases of acute nephritis are cured by these measures.

The treatment of chronic nephritis is a different problem requiring much more experience and trained judgment to qualify for it, for several reasons. In the first place, the degree of structural change, to which the term inflammatory is applied with scant accuracy, varies greatly, from changes scarcely appreciable and harmless to a severity which leads inevitably to a fatal termination. Second, some difference of treatment is required by the varieties of what is known as chronic nephritis. Finally, modifications of treatment are rendered necessary by symptoms and complications which are much more varied and numerous in chronic than in acute nephritis. My own experience has taught me that it may be arranged most satisfactorily to meet three chief indications:

First, to protect the system against toxins which tend to accumulate in the blood because of deficient elimination by the damaged kidney; second, to protect against complications and certain grave symptoms and their consequences; third, to restore the normal structure of the diseased organs.

The first indication is met by cutting out proteid foods whence for the most part arise the toxins referred to, and, second, by stimulating the function of organs other than the kidneys whose office it is to supplement the renal excretion. The proteid foods referred to are represented especially by meats. Other proteids are the gluten of bread, the casein of cheese, and the yolk and white of egg, the former containing as much and more albumin than the white. An important practical question relates to the rigor with which such exclusion is carried out. Shall all meat be excluded? Except in cases in the throes of uremia or threatened uremia—no. Again, there is no one kind of meat which is practically more harmful than another. The red meats, which have borne for many years the special stamp of danger, are no more harmful than white meat, the small additional quantity of blood which produces the red in the former going for naught. Thus the monotony of a diet which permits only white meats, is escaped. As intimated, except in the case of actual uremia, it is sufficient to reduce meat foods to a minimum, just enough to give a relish to the meal, say two ounces daily, represented by such light stuffs as bacon, very palatable when thoroughly done, and of which the fat also is not contraindicated. The same may be said of eggs, of which one or two a day cooked in any way may be permitted in cases of chronic nephritis without active symptoms. The proportion of proteid contained in bread is not regarded as sufficient to demand reduction to any positive degree. The same is true of the cereals and the soft juicy vegetables, which are excellent foods for the disease under consideration. The casein of cheese seems to be less harmful than the proteids of beef, beef extracts, and beef teas, and may be also moderately allowed. Beef extracts are especially objectionable. It is not proposed to discuss these at this time. Suffice it that they contain substances which are poisonous, substances which the normal kidneys remove from the blood, but for which function they are disqualified when diseased.

Quite as important as the quality of food is the quantity. Overeating is often the cause of nephritis; especially therefore should it be avoided by the nephritic. Milk and cream are ideal foods for him, and the cereals fill a like role. Their combination is even better. Sweets are not contraindicated, except when taken in such quantity as to derange digestion. Alcohol, being an irritant to the kidney, should not be used by the chronic nephritic, though it may be used in emergencies when stimulants are needed.

Having cut down proteid foods and substituted others, the next step is to stimulate the excretion of the toxic products of deranged proteid metabolism. Intangible as these substances are—be they protein, urea, nitrogen, creatinin or purin bodies—they are removable from the blood by the skin and bowels as well as by the kidneys.

The functions of the kidneys are stimulated by the saline diuretics, of which potassium citrate is the type, and by the alterative diuretics as iodine and calomel. These offices are, however, variously limited by the diseased state of the kidneys, and we must look elsewhere for supplemental function. Such is found in the bowels and skin, while experiment goes to show that bowel elimination is the more effective, so much so as to have suggested to

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Professor von Noorden the graphic remark made in my hearing some years ago when discussing this subject: "In a case of nephritis don't cure a complicating diarrhea." Free purgation is the means, of course, by which the bowels are to be availed of, and here again the salines are our sheet anchor, not only because they stimulate excretion, but also because they are less irritating and exhausting than elaterium, jalap, and others of this class. The bowels should be kept free, therefore, by salines, either in the shape of the natural mineral waters or such members of this group as magnesium sulphate, sodium sulphate, sodium phosphate, or Rochelle salt. These should be supplemented by an occasional dose of blue mass or calomel, followed by a saline on the following morning.

The skin is also an efficient agent in eliminating toxins. It is availed of most effectually by the hot pack, the hot air bath, hot vapor bath, or electric light bath. One of these should be given twice a week or oftener, even daily when the case demands it. It is usual to allow the patient to remain in the bath for fifteen or twenty minutes after the sweating has commenced. Less urgent indications are met by the nightly warm bath, which removes dead epithelium and promotes the action of the skin. Pilocarpine hydrochloride or nitrate in moderate doses, say one twelfth of a grain increased to one sixth, may be used to stimulate the action of the skin. A very efficient remedy is the official solution of potassium citrate in half ounce doses, with half a dram of sweet spirits of nitre and a few minims of tincture of squills, every two or three hours. It is an admirable diuretic as well as sudorific, and acts also moderately on the bowels.

The differences of treatment called for by the different forms of chronic nephritis are not great. In chronic interstitial nephritis there is more extensive destruction of renal epithelium, and in a general way supplemental measures to secure elimination should be more active and the patient more closely watched because he is in greater danger. Unfortunately many of the milder cases of interstitial nephritis are not distinguishable from those of parenchymatous nephritis, and on this account vigilance should be exercised over all cases of nephritis. The presence of albuminuric retinitis, although not limited to interstitial nephritis, is presumptive evidence of its presence.

An important measure of treatment in chronic nephritis is the regulation of work, exercise, and rest. Many patients with mild cases are unconscious of symptoms, in others symptoms are so mild as to attract little attention. There are none, however, which are not more or less influenced by rest and exertion in whatever way these are practised. Muscular exercise is a promoter of albuminuria, even in health. A patient must, therefore, graduate his work and exercise so as to produce a minimum of albuminuria. Except the grosser symptoms of the advanced cases, such as dropsy and its results, a sense of fatigue or weakness is the only indication of a failing strength which demands rest. Yet the weary feeling is produced by many conditions other than nephritis. An examination of the urine might aid us. The finding of albumin and casts increases the probability of nephritis as a cause, but does not make it certain. The nephritis once established, the amount of rest and exercise including work must be adapted to its consequences. Many patients with mild nephritis can work, sometimes to their advantage. On the other hand, it is needless to say, that to attend store from six o'clock in the morning to twelve at night rapidly aggravates the disease. Fortunate is the patient who can afford an automobile and thus secure the benefit of outdoor life without fatigue.

There can be no doubt that the kidney is subject to structural repair. This has been shown by experiment on animals as well as in efforts at repair of acute lesions as disclosed at autopsy in human beings; but I know of no medicine or food which will directly help to restore the normal structure of a chronically inflamed kidney. All that can be done is to place the patient under such conditions as favor repair, and give Nature the best chance to exert her recuperative tendency.

All that promotes natural and normal function and maintains normal circulation, tends to promote healing. All that interferes with normal circulation and normal excretion, tends to keep up the diseased state. The overgrown connective tissue of the cirrhotic kidney seems to be invulnerable to all drugs which have been directed against it. The iodide of potassium, the great destroyer of certain kinds of fibrous tissue, seems to be without effect on the fibrous tissue of the contracted kidney, although some German clinicians hold that in all cases of interstitial nephritis the iodides should be given continuously in such doses as are easily borne. The proliferated and packed epithelium of parenchymatous inflammation appears to retain better the ability to function, and there seem to remain areas of sound tissue which supplement deficient excretion in those parts of the kidney which have undergone degeneration. At all events, this form is less likely to be attended by uremia.

TREATMENT OF COMPLICATIONS AND SPECIAL SYMPTOMS.

The complications of chronic nephritis are numerous, but only a few demand detailed consideration. They include bronchitis, edema of the lungs, pneumonia, pericarditis, more rarely endocarditis, pleurisy, and effusion into the serous sacs. Derangements of digestion succeed on chronic nephritis, and are probably therefore more frequently results, but not rarely they are the first symptoms to attract attention. Then closer examination will find other symptoms of nephritis. Pseudomembranous enteritis is sometimes seen as a terminal infection.

Among symptoms requiring special or modified treatment, are uremia and edema, general and local. Uremia is the most alarming and dangerous symptom. It is acknowledged to be more frequent in chronic interstitial than in parenchymatous nephritis. Occurring often suddenly when least expected, its treatment should be correspondingly prompt. Fortunate are we if premonitory symptoms present themselves, such as drowsiness, intense headache, or vomiting of matters laden with urinary constituents. A brisk purge, a sweat, or a blood letting may avert the threatening convulsion

and coma. A coincident hypodermoclysis or intravenous injection of a pint of normal salt solution will aid in eliminating these poisons. It should be associated, however, with a blood letting, with the blood pressure as high as it usually is in uremic coma. This is important, for the intravenous injection without the removal of a corresponding amount of blood may produce excessive intravascular pressure and death.

More fortunate still are we if the phenolphthalein test informs us that the sufficiency of the kidney is greatly less than normal, when a similar treatment may be equally efficient. The presence of coma or convulsions militates against the usual modes of giving medicine. A couple of drops of croton oil mixed with a teaspoonful of plain oil may be carried to the back of the tongue, or one sixth grain of elaterium or one twelfth grain elaterin dissolved in a small quantity of water. Chloroform may be inhaled to control the convulsions. After the purgative has had its effect, an enema of chloral in solution, as much as a dram of the drug in four ounces of water, may be given to supplement the effect of ether and to continue it. Simultaneously, or in close association with these measures, is the sweating which may have been used in the initial stage of treatment. The best method of securing sweating at this stage is by the hot pack or vapor bath. The fluid extract of jaborandi or pilocarpine hydrochloride may be used to facilitate the action of heat, small doses such as a quarter of a grain of pilocarpine being sufficient when combined with the heat; while large doses, though more active, are apt to produce edema of the lungs. Should this complication occur, 1/100 grain of atropine hypodermically will commonly dry up the exudation. This dose may be repeated. Uremia is sometimes mistaken for the delirium of cerebral arteriosclerosis, an error to be guarded against.

For edema and general ansarca much the same treatment, modified according to the exigencies of the case, is indicated, associated also with diuretics like digitalis, acetate and citrate of potassium, and the theobromine derivatives, including especially acetotheocin. Extreme degrees of anasarca may require incisions or Southey's tubes to draw off the serum. Excellent results have followed this treatment. I prefer incisions behind the ankles; when dressed antiseptically they are less uncomfortable than the Southey's tubes, and less likely to cause local irritation.

Operative treatment. The operative treatment of chronic nephritis—Edebohl's operation—is not resorted to as often as it should be. It is indicated in all cases which have resisted after a fair trial the usual remedial measures. Although complete cures are claimed for it, I have never met them. On the other hand, I have seen the most marked improvement, an improvement which might be characterized as "almost a cure" with a prolongation of life for several years in comfort and safety. The operation is free from risk if it is not deferred until the disease is so far advanced that death is liable to occur at any moment.

1500 SPRUCE STREET.

THE CONSERVATION OF THE FUNCTIONS OF THE EAR, NOSE, AND THROAT.*

BY W. SOHIER BRYANT, M. D.,
New York.

The ear, nose, and throat are the most important defenses of the human body in its constant warfare against the attacks of bacteria, dust, smoke, and poisonous gases. The trend of all sociological and scientific investigation is in the direction of fortifying these defenses so that they shall become impregnable towers of strength rather than feeble, inefficient pickets that can be overcome by the first attack of the enemy. What can legislation do to strengthen these forts, which are, especially in our metropolitan life, of such vital and potential importance? It seems to me that this question is the common meeting ground for the legislators and the specialists. In order that we may make the meeting ground more sure, more definite, let us consider the functions and general fortifications of these human citadels.

The ear, nose, and throat are the most vulnerable parts of the body and are attacked by a great and often overpowering army of external forces. Like all invaders these aggressors are not satisfied with an objective victory. After the direct effect on the ear, nose, and throat, these impurities of the air press their way through the outposts and storm the general system. The secondary effects of these poisonous substances do not appear until there is some imperfection in the function of the upper air tract (that is, the ear, nose, and throat). If the barriers are fortified as they should be, the attack is defeated and the individual is the victor. But if the individual refuses to obey the mandates of his natural judgment, if he neglects the promptings of his senses of smell and taste, always given by Nature, that great protectress, he becomes a traitor to himself and an ally of his enemies. Clearly our function is to unite and to legislate to protect the individual.

The ear, nose, and throat are obviously of vital importance because of their important functions and because of the comparative ease with which these functions can be jeopardized and turned into destructive processes. The three organs demand joint consideration because they are intimately connected by their mutual interrelation, particularly through the nerve and blood supplies, and by their common mucous membrane lining.

The enemies of the ear, nose, and throat and the causes of impairment of these organs, are the breathing of impure air, contaminated with destructive bacteria, chemical reagents, sharp particles, poisonous gases, rapid changes of temperature, and humidity.

The functions of the ear are: 1. Auditory; 2, equilibrational; 3, psychical; and, 4, protective.

From a sociological point of view, hearing is the most important of our senses, since it is the chief means of communication with our fellow beings. Deafness causes loss to the individual in addition to the loss of hearing. It brings about more or less isolation from other human beings. It tends to lessen mental activity, and the general progress of

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the individual is retarded. Because of his isolation, the individual is more disposed to fall a victim of psychoses. A visit to a home for the aged will convince one of the degree of incapacity and psychical irritability caused by the inability to interpret sounds correctly.

The ear is the peripheral organ of equilibrium. This function cannot be entirely replaced by the eye and muscular sense, even after loss of the vestibular equilibrational mechanism of the ear and years of dependence on the substitute equilibrational mechanism. The accuracy of coordinate movements depends on the ear. This equilibrational function is especially interesting now that aviation puts a new test on man's ability to orient himself in space, time, and direction. The acuteness of the vestibular mechanism of the ear is what determines the success of the aviator.

The ear furnishes the basis for all intellectual processes. It is the screen upon which all intellectual activity is projected. The ear is the intellectual sense organ, the peripheral organ of the intellect; the peripheral organ of the mind; the peripheral organ of mathematics. It furnishes the scale by which all events, thoughts, and objects are measured. We can see, therefore, why hearing is fundamentally of inestimable value; without hearing we observe that education is very laborious and never reaches the same achievement as with it. It also has a powerful psychic balance effect, which serves to keep the mind from falling a prey to psychoses.

The senses of time, space, direction, distance, geometry, and form are located in the vestibular apparatus, and the mathematical sense, which includes number, arithmetic and rhythm is situated in the cochlea of the ear. The vestibule represents the physical site of the metaphysical concepts of space. From the psychological point of view it is not possible to account for the power of the mind to arrange in space the perceptions received from the visual, tactile, and muscular senses, since by no process of thought can we be conceived to attain the space element in our perceptions from a combination of sensations, varying only in intensity and quality, but not in kind. The ear supplies the needed sense. The constant inflow of vestibular sensations with both vestibules acting gives a "spacial" tone to all other sensations.

The relative importance of the ear as a sense organ and the basis of intellectual thought demonstrated by deductive and inductive reasoning, outstrips one's experience and observation. The problem becomes simplified if we conceive of all sensation as being projected on a continuous stream of sensations (like a revolving drum and style), operating from the three dimensions of space and qualifying every sensation by variations in the intensity and quality of its three dimensional attributes. This assumption is justified by the disarrangement of our spacial perceptions that takes place from irritative processes affecting the vestibular impulses. This relationship is also demonstrated by the aprosexic state produced by disarrangement of our labyrinthine sensations in grave tinnitus and vertigo.

It is interesting as well as instructive to look over this field and see how to apply our knowledge to the interpretation of experience. We shall then appreciate that our intellectual development depends wholly on the integrity of our ears, and as intelligent beings we shall treat the sense organs of the ear with even more respect than we did before, since we shall then realize that their mechanical functions furnish the very foundation for our entire intellectual superstructure.

Every one knows that interference with the sense of hearing, especially before mental development is complete, is a great obstacle to progress. This is because the word, concept, or medium of storage and exchange of ideas is lacking. We find by observation that those unfortunates who lack this organ or the use of this organ, are deficient in the sense of time, space, direction, and number.

The loss of mentality through defect of the inner ear and the difficulty of education of those with defective auditory organs is shown by the slow progress of deaf mutes. Precocious children and prodigies stop their mental development because their vestibular reaction becomes exhausted, causing a halt in development. In stupid children ear reactions are delayed, while quick ear reactions, including the music, rhythm, and mathematical senses, are markedly emphasized in bright children.

Early deafness destroys hope of normal intellectual development and justifies the expectation that those afflicted will remain in the dependent class. Deafness before maturity hinders or arrests the mental development; causes general mental, psychic, and intellectual inferiority. If one wants to see what befalls those bereft of hearing and ear functions in childhood, one must go to a big deaf mute school and see the intellectual cripples assembled.

The subconscious sensations of the labyrinth include the sensation of rhythmic movements, and of the accurate and very fine muscular contractions and microscopic accurate motions of speech, both written and oral. The musical sense is a part of the rhythm or number sense of the cochlea. Without the cochlea there can be no musical sense. The function of the ear serves for protection in warning against coming danger, thus enabling the individual to escape harm.

The *injurious processes* arising from disturbed functions of the ear are: Deafness, psychical impairment, paracusis (wrong hearing), tinnitus (ear sounds), illusions of hearing (hallucinations and delusions), vertigo (dizziness), infection, anaphylaxis.

Paracusis—wrong hearing—is a detriment sometimes of greatest annoyance to the individual and absolutely incapacitates musicians. Tinnitus—ear sounds—is very exhausting, causing loss of sleep and often self destruction. It also is the peripheral cause of auditory hallucination and hallucinosis. Ninety-eight per cent. of patients with ear disease in all or any of its forms have more or less tinnitus; that is, they hear sounds which do not have an external origin, but originate somewhere in the head and are extremely annoying and exasperating. The consequent exhaustion may so tire the mind that a psychopathic individual breaks down and becomes a victim to some psychosis.

These internal sounds of the ear may cause

another and even more distressing disturbance. If the sounds occur in the ear of a psychopathic individual during the time of increased mental irritability, they form the basis of auditory hallucinations, illusions, and delusions; deficient hearing aggravates these reactions. Auditory hallucinations are more often met with than any other kind of hallucination, and are also of more fundamental importance in the make-up of the delusions than any other hallucinations.

Impairment of sight has no special psychical influence, whereas deficient hearing is a serious destructive element in the mental mechanism. Deaf mutes and others who have absolutely paralyzed auditory organs, have no auditory hallucinations or illusions. Absolutely deaf ears have no auditory hallucinations or illusions. We all know from our personal experience and observations of others that a sound is very easily misinterpreted. We are all familiar with the misinterpretation of sound when one is expectant; for example, a creak of the stair becomes the footstep of the expected person. We have all of us noted that very deaf people will carry on a conversation entirely independent of the conversation of the person speaking to them.

The occurrence of auditory hallucinations is attributed to tinnitus because, in clinical experience, when unilateral hallucinations are observed they are always in an impaired ear, and, furthermore, always in the more impaired ear. In cases of bilateral auditory hallucination almost always a considerable degree of ear impairment is present. I have never seen a case of auditory hallucination in a patient sufficiently accessible to give a complete auditory examination, that did not show definite auditory defect sufficient to account for a considerable degree of tinnitus.

These observations illustrate how ear sounds may affect the minds of the people hearing them. The sounds are interpreted in a way suiting the psychical state of the hearer. If the person hearing the tinnitus is psychically unbalanced, these sounds serve as a basis for the foundation of the perverted psychical processes, and these perversions of interpretation increase in proportion to the weakening of the normal critique. The critique in relation to sound is a very easily deranged mental process. The more deficient the hearing of the individual, the more readily is a sound misinterpreted. A normal person often misinterprets a sound, as to the direction of its course, the nature of its source, or its meaning. In the deaf, more so as the deafness increases, the critique for sound is lessened until in the very deaf there is hardly any critique left, and in the absolutely deaf there is no critique at all. When the critique is entirely lost in the psychopathic, then the ear sounds become dominant in the form of fixed auditory delusions. Tinnitus from its persistence may finally wear out the critique.

Factors required for the production of persistent auditory hallucinations are: 1. Deranged function of the cerebrum; 2, peripheral auditory irritation; 3, lack of critique in the comprehension of the auditory sensations which is always enhanced by deafness. The process which leads to the occurrence of the hallucinations should be interpreted as a special process of psychic association, normal in action, but abnormal in intensity and out of proportion to the stimulus.

As regards the influence of hallucination upon the course of idea association, the most important question is whether they are regarded by the patient as real sensations or not. The peripheral stimuli merely supply the impetus for the discharge of the central irritation. The characteristic of the hallucination is determined, not by the peripheral stimulus, but by the existing mental indisposition.

Vertigo results from the disturbance of the equilibrational parts of the ear. The loss of the equilibrational sense reduces the capacity for mental growth through the impairment of the psychic functions, which were aided by the vestibular apparatus, and it also interferes with accurate coordinate movements.

Infections originating in the ear may spread and become fatal diseases—septicemia and metastatic abscess; middle ear inflammation may lead to death, through extension of infection to the brain. The absorbed material from ear suppuration sometimes causes the symptoms of anaphylaxis, a general disease.

THE NOSE AND THROAT.

The function of the nose and throat is to keep poisons out of the body. These poisons may be solids, liquids, gases, bad food, bad drink, bad air, dust, decomposed food, unhealthy foods. The positive function is to admit suitable air, food, and drink; also to furnish the voice, a means of communication reciprocal with the ear.

The sociological value and important functions of the nose are seen in these facts: The nose moistens the inspired air so that the lungs may work readily without wear and tear, and it facilitates the gaseous exchange. It strains the inspired air and frees it from solid particles in suspension, dust, and other floating particles. It prevents the clogging of the respiratory tract and keeps pathogenic microorganisms from going deeper into the respiratory tract, thus avoiding infection and disease. It brings the inspired air to the temperature of the body to prevent irritation of the lungs. The olfactory sense supplies taste for all the finer or volatile flavors, aids appetite by the selection of palatable food, and selects pure, fresh air, and congenial associates. The attraction of people for each other is conventionally conceded to depend on beauty, mental attributes, disposition, temperament, etc. Usually the sense of sight and hearing, and mental appreciation are appealed to; but the most fundamental requisite, as found in Nature, is gratification of the sense of smell.

Protective functions of the nose are to reject poisons and unwholesome food, dirt, and bad air; to aid in avoiding contagion and unwholesome associates, and to discriminate through the sense of smell. The nose is of industrial value where the discrimination of odoriferous substances is required. We are apt to underestimate the value of the sense of smell because most of us have either entirely lost it or have it very much impaired. Perhaps we can remember in our childhood the ecstasy produced by the aroma of a strawberry or the smell

of baking bread, as well as disgust from odor. The sociological value of the protective functions of the nose cannot be overstated. It guards the least protected gateway of the body—the one through which there is a constant passage day and night. It does all this and more, in spite of the disregard civilization has shown to the warnings and promptings of the nose and its damaged condition in the densest centres of civilization.

There are many evils resulting from disturbed functions of the nose beside the loss of the above mentioned advantage. Through an impeded nose, causing imperfect sifting of dust, or when there is more dust than can be sifted, the air tract is irritated and more bacilli are admitted, doubly dangerous under these conditions, undermining the defenses and increasing the entrance of enemies. Obstacles in the nose lessen the intake of air, reduce oxidation, cause inefficiency, and increase the *possibilities of tuberculosis*. They also cause mouth breathing, which supplies irritating and insufficient air to the lungs.

From lack of warming air and moistening air, the imperfect nose irritates the air tract. Local abscess or infection of the nose may become a fatal disease by spreading to the brain, the blood, or some other vital organ. Owing to the tolerance of the nose, infection may exist a long time without attracting special attention, meantime becoming the source of anaphylactic poisoning, which may result disastrously in a general disturbance, such as gastric ulcer, asthma or hay fever. Impairment of the nose and loss of the sense of smell is largely due to breathing vitiated air containing dust, poisonous gases, and pathogenic bacteria. The sense of taste for all volatile flavors is obviously lost when the sense of smell has gone.

The throat serves as a supply tube for air, food, and drink, and as an exhaust for consumed air. It supplies the functions of the voice, second only to the functions of the attentive ear in sociological importance. The presence of the sense of taste situated in the tongue is a safeguard where non-volatile flavors—sweet, salt, sour, bitter, and acrid—are concerned and warns against poisons such as bichloride of mercury.

The throat has a very important function, exemplified in its lymphoid tissue system, found in Waldeyer's ring. This lymphoid organ serves to destroy bacteria which have passed in thus far with the food and drink or in the dust of the air. Detriment from disturbance of the function of the throat leads to the loss of the gustatory function of the tongue. Damage to Waldeyer's ring allows the entrance of bacteria into the system, causing tuberculosis, consumption, rheumatism, carditis, nephritis, and meningitis; or causing local infection resulting in distant intoxication, the effect of bacterial infection.

Coal smoke from power furnaces and the dust of very large cities are both new. They were not here a hundred years ago. Our ancestors had comparatively good air, practically free from these impurities. What prevented the growth of great cities in the past were the ravages of epidemics bred by the decomposing filth of the atmosphere. We have done away with this and have advanced bearing a new burden—the dust of very great cities and the gases of manufacturies. Our knowledge of this subject has advanced far enough for us now to know that it behooves us to exert even greater care as to what air we breathe than as to what food we eat. This is because the absorption by the lungs is much more rapid and complete than absorption through the alimentary tract.

Fifty years ago the great Iron Age had not got under full headway, and the amount of poisonous gases in the air was negligible. An increasing death rate from acute diseases of the lungs has been shown to be constantly connected with the growing smoke and dust contaminations of our atmosphere. The breathing of foul, contaminated air is so usual that the blackness and blocking of our lungs by dust and dirt can be known as a physiological anthracosis. The infant's lungs become stained and blackened by smoke often before it is a month old.

Aside from being a direct carrier of disease germs, dust acts upon the human organism, creating a predisposition to disease by the maintenance of constant irritation and congestion of the mucous lining of the respiratory tract, which tract has been shown to be much more freely penetrable for infectious germs than the intestinal mucosa. In 1907, Findel showed by experiment that it took 6,000,000 times as many tubercle bacilli to infect by way of the digestive tract as it did by way of the inspired air.

Dust has been said to be the greatest enemy of mankind. At present it is second only to the poisonous combustion gases. Dust is made up of fine powder resulting from man's exuviæ and of his domestic animals, together with the detitrus resulting from the attrition caused by the occupation of man; the fine particles are irritating, some by reason of their sharp edges, and others by reason of their chemical composition.

Dust contains pathogenic bacteria, which retain their vitality a variable length of time, depending on the species and on the exposure of the dust to sunlight and drying. Germs of typhoid fever, dysentery, Mediterranean fever, diphtheria, tuberculosis, and suppuration may be carried by floating dust, and it is certainly possible for anthrax and other spores to be carried in a viable state for a long time in this way. Pus organisms and colon bacilli have been found in schoolroom dust; pneumococci have been found in dust; meningococci have been found in dust; Paris city air shows 4,970 bacteria to the c. c. of air, while in the suburbs there are 345 bacteria per c. c. Winslow and Kligler, working in New York dust, found 150,000 to 145,000,000 bacteria to the gram of street dust. In indoor dust they found the average was between 3,000,000 and 5,000,000 bacteria. Among the bacteria of outdoor dust, colon bacteria were always present and sometimes in indoor dust. Streptococci mucosi were found in nearly half the samples of indoor dust and in most of the street samples. The streptococci average 22,040 bacteria to the gram of outdoor dust; in indoor dust the average was 42,500. In some samples the number of the streptococci went up to 100,000. Other observers have found that tubercle bacilli, various

strains of streptococci and diplococci, some of these resembling pneumococci, would survive several weeks in dry dust. Camus found tubercle bacilli in five to ten per cent. of the culture of dust not exposed to tuberculous infection. Dust from the neighborhood of tuberculous patients showed tubercle bacilli in twenty-five to fifty per cent. of the cultures. Street dust and industrial dust damage the upper respiratory tract and are therefore important. Dust acts on man mechanically by obstructing the air passages, becoming a mechanical irritant, a chemical irritant, and frequently a carrier of pathogenic organisms and a cause of disease. A dust laden atmosphere is apt to be germ laden.

The dust in great cities is largely soot. Its relatively light particles, together with those of coal dust, penetrate into the bronchi, in contradistinction to the heavier dust of the street, and ultimately reach the pulmonary alveoli, when they act, not only mechanically, but also as chemical irritants, owing to the admixture of sulphurous acid, hydrochloric acid, and ammonia.

The maintenance of health among the working community depends to a considerable degree upon the control of industrial dust or the warding off of its injurious consequences. Industrial concerns play an important part in the air contamination of cities. Atkins estimates the dust particles in country air at from 8,000 to 100,000 to the cubic inch; while in the city air he finds them to average from 1,000,000 to 50,000,000.

Combustion gas is found wherever men live in communities, increasing in quantity with the density of size and population. Angus Smith found a decided difference in the air of Dundee: centre of the city, and country, tested at night, showed carbon dioxide, in the city, 0.042 per cent.; in the country, 0.028 per cent. Although harmless in itself, carbon dioxide indicates the amount of combustion gases present and is a measure of the pollution by other gases that are actively poisonous. Carbon monoxide gas —the industrial poison—due to the escape of illuminating gas, improper heating apparatus, or imperfect consumption of coal gases, causes neurasthenia, neuralgic disturbances, epileptiform attacks, digestive disturbances due to hyperacidity, also albuminuria and glucosuria, and general incapacity. Pollution of air by leakage of illuminating gas in large cities is a considerable factor in the metropolitan burden.

Smoke fills the air with acid poisonous compounds and soot particles which may serve as carriers of the obnoxious products of human fatigue, which irritate the sensitive membranes of the eye, nose, throat, lungs, and gastrointestinal tract, increase the susceptibility of gastrointestinal, pulmonary, and nasopharyngeal diseases, diminish the potential reserve, working capacity, and well being of the individual, increase fatigue, irritability, and malcontent, and hasten premature decay.

Soot and poisonous gases result from the combustion of coal and from the roasting of mineral substances and chemical poisons. Soot acts on the respiratory organs as dust does, clogging the passages. It also acts as an irritant, mechanically and chemically, because of the acid it contains, derived from the burning coal. The poisonous gases act as bad irritants of the upper air tract and if they penetrate further, act on the lungs and blood.

In Leeds, England, the air was found to contain 11.6 micrograms of sulphurous acid to the 100 cubic feet of air, while in the outskirts the amount was 5.5 micrograms. The effects of poisons from nitric acid fumes are irritation of the mucosa of the air passages, diminution of the alkalinity of the blood, and irritation of the central nervous system. Hydrogen fluoride gas, an industrial poison, reduces natural protection against infection. Ammonia gas is an industrial poison and causes disturbances of the respiratory organs, impairment of the nutrition, impoverishment of the composition of the blood, and reduction of the resistance to infection.

Many occupations are deleterious to the ear, nose, and throat because they are accompanied by dust, the escape of poisonous gases into the air, the escape of poisonous particles with the dust, continuous loud sounds, explosions, and detonations, rapid changes of temperature, rapid changes of humidity, rapid changes of barometric pressure, wetting of the surface of the body, entrance of water into the nose or external auditory canals, concussion of air in the external auditory canal, entrance of foreign bodies into the external auditory canal, blows about the head, entrance of pathogenic organisms, hydraulic and barometric pressure in the external auditory canal or upper air tract, and abnormal high barometric pressure in the upper air tract.

There are few occupations which do not, in some particular, partake of the foregoing deleterious conditions of occupation. The enumeration and description of occupational diseases of the upper air tract is valuable, since a study of the subject points out the wide extent to which these diseases prevail. Such a study should direct the attention of the public to the necessity of protecting itself from injury in many occupations.

The effect of general ignorance is shown in a striking manner in the backwardness of public opinion, and consequently in legislation, but most unmistakably in the lack of interest in the enforcement of protective laws which are even now on the statute books. This investigation will collect data and observations which should result in the mitigation of unsanitary and harmful conditions, for instance, the unnecessary accumulation of city dust, and, most important of all, the air contamination of cities. We refer to the contamination of the air by the poisonous gases resulting from coal combustion, chief among which are sulphur dioxide, and carbon monoxide, the most destructive of all.

The etiological factors in occupational diseases of the nose and throat, classified according to their importance, are: 1. Gaseous impurities of respired air; 2, dust impurities of respired air (mechanical and chemical); 3, hydrometric irregularities of inspired air; 4, temperature (thermal) irregularities of respired air.

PROTECTION

The smell of fresh air should be made familiar to all. The prevention of all the sociological losses

and retention of the sociological benefit may be accomplished by managing the ear, nose, and throat as one region, and by avoiding irritating and poisonous gases, dust, and soot. This protection from dust, smoke, and poisonous gases is demanded because they are the causes of injury to the ear, nose, and throat.

Occupations deleterious to the ear, nose, and throat are obviously most destructive to these organs; but the damage to those individuals employed in such occupations is far outweighed by the loss to the community in general by reason of the less obvious but more widespread damage to all exposed to the more diffused and destructive agents. The metropolitan point of view is most important in this regard, because the metropolis suffers most from this trouble.

The people should not only be allowed, but should be encouraged to respond to the dictates of their ears, nose, and throat, in order that they will no longer have ears, nose, and throat so weak that they cannot control the individual, whether the weakness is because of ear, nose, and throat disease, or because of inhibition of the protective impulses of the ear, nose, and throat, brought about through overwhelming individual repression of the senses. The Chinaman has acquired his immunity to poison and disease, remarkable in the impregnability of his armor compared with our frail defense, through the slaughter of millions of hecatombs through millenniums.

Protection from dust and the contained bacteria can very satisfactorily be assured outdoors by having all streets kept from becoming powdery by sprinkling with oil or a hydroscopic solution, such as calcium chloride. Indoors the use of the vacuum cleaner is very satisfactory. Dusty trades require special provisions to protect the workers; in most cases the protection can be secured by confining the dust to the machine that makes it and by obliging the worker to add to the natural filter of his nose by wearing a special filter mask. Personal protection of the worker from dust requires the precaution of bathing after work, change of clothing, and partaking of meals outside of the work rooms.

Experience has shown that the separation of the dust from smoke and factory air is best obtained: 1. Through cooling of the gases; 2, through surface contact and the diminished draught of the gas current, a sudden change in the direction of the current, if possible opposite to the ascending tendency of the gas; and, 3, filtration of the gases.

Combustion of coal is the direct source of the great bulk of smoke and poisonous gases. The balance is produced by the effect of the heat derived from the combustion of coal on various poisonous substances. The carbon monoxide gas is produced by imperfect combustion. The other poisonous gases are derived from impurities of coal and from the roasting processes applied in the arts to various substances: for instance, in metallurgical work and chemical manufacture. The gases are to be kept from escaping into the free atmosphere. They are to be burned or oxidized until they become harmless by the use of a small amount of heat and draught. If the poisons are acids, they are to be neutralized.

Illuminating gas contamination of the atmosphere is to be guarded against by keeping the gas pipes free from leaks or by using electricity when practicable. Occupational poisoning from poisonous gases is to be avoided by forced exhaust draught, ventilation, by masks, and by confining the volatile substances.

What is the source of poisonous gases in the atmosphere? Poisonous gases—the gases formed by coal combustion—bleach the pallid faces of the poor in manufacturing districts and destroy the trees. Compare the trees on Staten Island, or in any city park, with great forest trees. They are made sickly and stunted in growth by these gases; and these gases have the same effect on man.

The possibility of the condensation of smoke in so far as the contents may be restricted and the noxious gases absorbed, is not unthinkable from the technical point of view, but from the utilitarian point of view (especially in regard to the acid gases in smoke), the purification of smoke is not always indicated, partly on account of local considerations and partly on account of the small value of the products obtained by condensation.

CONCLUSION.

We now realize the importance of the integrity of the ear, nose, and throat. The danger from soot, dust, and poisonous gases in every occupation where they occur should be recognized by law and should be minimized by law. When the public is sufficiently educated to appreciate the loss through these remediable hardships, it will not be slow in demanding salutary legislation, and in punishing by legal penalty and public opprobrium. The special means of protection in every instance are very obvious.

We should view this subject from the metropolitan point of view, considering it from the point of view of the people most affected. Public sentiment should be aroused by an exposition of the dangers and losses from remediable causes, and protective legislation providing general regulations should follow. Public sentiment should be aroused through an appreciation of the value of the functions of the ear, nose, and throat to an active campaign to preserve these functions for the coming generation. Public sentiment should also be moulded to revere as sacred the respect due to the promptings of their sense organs, and to appreciate the value of the warnings and the great danger which these sense organs point out

It should be compulsory that children have the necessary attention to their ears, noses, and throats. They do in the public schools of New York. The importance of keeping dust down is shown by London, which, largely on account of its dustfree foggy air, is the great health city. The legal safeguards we have now are few—only broad municipal ordinances; for instance,

Sanitary Code, City of New York, 1913, Chap. 14.

Paragraph 96. No one shall cause, suffer or allow cinders, dust, gas, steam or offensive odors to escape.

Paragraph 181. No person shall cause, suffer or allow dense smoke to be discharged.

We must now choose the means to approach the end in view, without dangerous speed, but with the

evidence of advance. Legislation should compel all large users of coal to destroy or mitigate all acid fumes, volatile, poisonous elements, and consume all smoke; thus improving the air for breathing.

The dust problem does not require legislation as much as the problem of effluvia does; it can well be regulated by city ordinances and public opinion, which should demand a city ordinance providing for sprinkling oil or a hydroscopic fluid in the streets to lay the dust, at all times of the year. Vacuum cleaning should be used in all public buildings, places of business, manufactories, hotels, and apartments.

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19 WEST FIFTY-FOURTH STREET.

OBSTRUCTIONS IN THE LOWER URETER.

Notes on Their Demonstration.

BY LEO BUERGER, M. D.,
New York,

Associate Surgeon and Associate in Surgical Pathology, Mount Sinai Hospital; Attending Surgeon, Har Moriah Hospital.

Although the problem accurately to determine the site, extent, and character of an obstruction, or of a stenosis of the ureter, may appear easy of solution since the introduction of the ureteral catheter, the cystoscopist knows by experience that the ureter catheter alone does not suffice, for not only inadequate, but even fallacious deductions may result from its use. An obstruction met in passing an ureteral catheter is frequently not due to obturation, or even to kinking of the ureter, but may be caused by the rigidity of the catheter itself or by the raising of a fold of mucous membrane in its advance.

Since the introduction of pyelography and the employment of argyrol or collargol to demonstrate the outlines of the pelvis of the kidney and the conformation of the ureteral tract, we have seen added to our stock of diagnostic procedures a most reliable and accurate means of studying the nature of obstructions and stenoses of the ureter. We must not lose sight, however, of certain difficulties that sometimes impair the value of even this method of

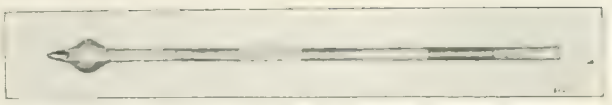


FIG. 1.—[illegible]

demonstrating the patency of the urinary tract. Thus, variations in dilatability of the normal ureter, variations in the appearance of the shadow depending upon the amount of fluid injected, and variations due to mere differences in technic may be such as to permit of a considerable latitude of interpretation. It would seem wise, therefore, that the technic, at least, of this procedure be thoroughly standardized so that more uniformity of interpretation be secured.

It is in the lowermost portion of the ureter, in the intramural segment, and that just above the bladder, that the study of the nature and extent of obstructions or stenoses is attended with uncertainty. On the one hand, we encounter cases where

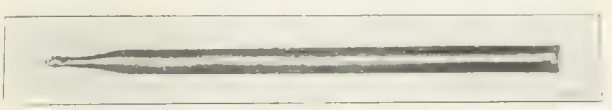


FIG. 2.—Catheter with bulbous enlargement.

we may be able to pass a ureteral obstruction with a catheter, and still be unable to say whether or not marked interference with the efflux of urine from the kidney obtains or not; for it will be conceded that an obstruction in the ureter must be estimated and measured according to the obstacle it presents to a current flowing from the kidney toward the bladder, rather than in the other direction.

On the other hand, and still more difficult of exact study, are those obstructions which do not permit of the passage of an ureteral catheter, and are so low down that, when argyrol is injected, and the ureter mouth is carefully watched, practically all of the fluid is seen to regurgitate into the bladder.

Calculi, too, not infrequently lodge at a point situated between three and five cm. from the ureteral orifice, where they obstruct the passage of the catheter. Sometimes the shadows obtained by x ray have to be corroborated by pyelography, and it is important to succeed in injecting the argyrol or

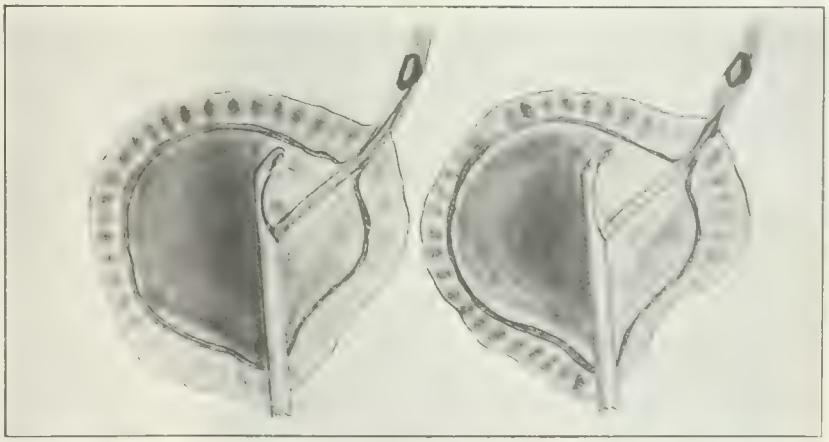


FIG. 3.—[illegible] and an obstruction low down in the ureter.

FIG. 4.—[illegible] demonstrate amount of obstruction, either in centripetal or centrifugal sense.

collargol beyond the supposed stone or obstruction. Then, too, granted that we are dealing with a stone and the diagnosis of the ureteral calculus at three, four, or five cm. from the orifice has been accepted, we may want to determine whether the ureter, or even the pelvis of the corresponding kidney has already suffered considerable dilatation for the purpose of deciding as to the time of operative intervention. In such cases of obstruction low down in the ureter, it has been my custom to apply a procedure which is, I think, somewhat different from that usually employed.

Some three years ago, I discarded the ordinary style of olivary or whistle tip catheter, and had two types constructed by Eynard. One was provided with a terminal orifice only, the catheter being either 7 or 8 Fr. in size, or larger, and tapering at the point (Fig. 1). The other type of catheter also had a single terminal hole, but was provided with a bulbous enlargement (Fig. 2), for the purpose of occluding the ureteral orifice. In most instances the former type of catheter will suffice for our purposes. It is employed in argyrol or collargol x ray, also for the purpose of injecting oil or glycerin beyond a calculus in the ureter.

When we are dealing with a stenosis, obstruction, or a calculus very near the ureteral orifice, our technic in pyelography is as follows: The catheter is either pushed up until the tip engages between the calculus and the ureteral wall, where it is jammed tight against the obstruction (Fig. 3), or a large catheter is selected, of sufficient size completely to fill the ureteral meatus, and is introduced only far enough to prevent reflux of the argyrol solution (Fig. 4). In both methods, if the catheter is properly introduced, and is large enough to fill the ureteral meatus, regurgitation of the solution is prevented, as can be easily determined by watching the orifice while injection is being done.



Fig. [illegible] 4 cm. from vesical orifice or ureter.[1]



Fig. 6.—Argyrol radiogram showing dilated ureter, and ballooning of ureter distal to the stone.[1]

When obturation of the ureteral channel is complete, the argyrol or collargol will be prevented from passing up beyond the obstruction, and the ureter distal to the obstacle will become distended, giving a fusiform shadow in the radiogram. In case the obstruction is incomplete (in the centripetal sense), the injected fluid will first distend the ureter, and, as it finds its way upward beyond the obstacle, the topography of the upper[2] part of the ureter will be revealed.

A recent case in which we were dealing with a stone situated four cm. from the ureteral orifice (Fig. 5), and in which it was impossible to pass even a No. 4 Fr. catheter beyond the calculus, afforded a very good example of the value of this technic in demonstrating the extent of the obstructing influence of the stone. Here the second method was employed. The conical catheter was passed almost up to the obstruction, the ureteral orifice being completely blocked so that reflux could not take place. The x ray photographs demonstrated that ballooning of the ureter distal to the calculus took place, and that the argyrol had penetrated upward into the dilated ureter. From the consideration of this particular radiogram the following conclusions could be drawn: First, the shadow (Fig. 5) truly represented a stone; second, the obturating effect of the stone was considerable in the centripetal sense, sufficient to afford marked hindrance to the injection of fluid in the direction toward the kid-

[1] In figures 5 and 6 the relative situation of stone and fixed bony points varies, since the radiograms were taken on different dates, and the tube was situated somewhat differently.

[2] Above the obstruction.

ney; third, the obstruction (centripetal) was not complete; and, fourth, dilatation of the ureter above the stone had already taken place (obturation in the centripetal sense).

From the standpoint of therapy, too, this method is of value, for the descent of calculi in the lowermost part of the ureter is certainly facilitated by its use. This can be easily demonstrated by taking a series of x rays on the days immediately following the argyrol or collargol injection.

40 East Forty-first Street.

A TEACHING CLASSIFICATION FOR THE TERATA AND HEMITERATA.

By Robert A. Keilty, M. D.,
Philadelphia,
Instructor in Pathology, University of Pennsylvania.
(From the McManes Laboratory of Pathology, University of Pennsylvania.)

The question of a classification of the monsters, especially from the teaching standpoint, has long been a bothersome one. In this outline I have attempted to group the terata from a developmental and anatomical standpoint, being ever mindful that some conditions would better be grouped from other points of view.

The subject of monsters, anomalies, and allied conditions is much like pathological physiology; it is endless. Researches along etiological lines are most valuable and there is no telling what important features of embryology might be met with.

In this paper no attempt has been made to classify any of the smaller anomalies, such as changes in bloodvessel anatomy, due to the fact that the grosser conditions fall just short of confusion. In the first place the monsters are divided into the terata proper and the hemiterata or semiterata; the terata include all forms which are distinctly and grossly monster and the hemiterata more moderate changes not classing the individual as a monster. Necessarily in the general classification the two divisions become merged.

Likewise, we consider single, and multiple or double monsters. The question of single monsters is an easy one, but with the double forms some difficulty may be encountered. In this paper where gross multiple parts exist we have considered them as double.

The first question is that of quantitative and qualitative faults; quantitative illustrated by conditions in which there is too much substance, as in gigantism, or too little, as in dwarfism. Under qualitative changes we may consider the anomalies in the substance and content of the body; e. g., too much or too little hair in normal situations, too much elastic tissue, variations in pigment, too little or too much, irregular distribution or lack of the deposition of the lime salts producing bone anomalies.

Secondly, we have the question of faults in union and fusion; under faults in union, parts which should unite fail to unite, leaving gross and impossible monsters. Faults of fusion are closely allied with failures of union, but in this case such things as persistence of clefts, or cyclops, and harelip will result.

For convenience one may start with failures of the somatapleura anteriorly and posteriorly, beginning at the head anteriorly. Here failures of fusion and union are closely related; various clefts involving skin and even bone may be seen over the vault of the cranium. Where there is protrusion of the meninges, a meningocele; where there is protrusion of brain substance, a cerebrocele or encephalocele will be found.



Fig. 1.—Looking at the base of the cranium and at the roof of the mouth with the lower jaw removed a cleft palate and unilateral harelip is well seen. (From the Pathological Museum, University of Pennsylvania.)

Proceeding downward, failures of the face first met with, are seen about the eye and nose. Faults in the proper descent of the frontonasal process may leave a snoutlike protuberance, rhinocephalus; the two eyes are not fused but are allowed to develop side by side by this frontonasal failure. Further fusion of the eyes may produce cyclocephalus or cyclops. The eyes may fail of development completely, leaving an opening with or without rhinocephalus. A further failure of fusion between the frontonasal fold and the lateral processes causes development of a harelip, unilateral or bilateral, with or without central incisors. Further failure of these structures is seen in cleft palate. To finish the face failures in union, the rami of the lower jaw fail to unite, with the production of a cleft in the midline, schistonatus.



Fig. [illegible] the somatopleura anteriorly over the belly with eventration. (From the Pathological Museum, University of Pennsylvania.)

In the neck, failures of the skin with persistence of branchial arch clefts produce fistulæ, central or lateral, and tracheocele. Developmental defects of the ear are shown by abnormalities in size, too large or too small, complete or partial absence, accessory lobes, etc.

When we come to the chest several failures occur; complete absence of the clavicle will allow both shoulders to be approximated. Faults in union of the ribs and sternum, a schistothorax or schistosternum, will produce such anomalies as exocardia, one case on record being that of a living child with the heart protruding outside of the skin.

In the abdomen the anterior wall may fail to

unite along its entire length in the midline, schistosoma; eventration is sure to take place. The belly walls may fail for a short space, as in extrophy of the bladder. Faults along the dorsum of the penis cause epispadias, those along the inferior portion, hypospadias.



Fig. 3.—Polydactylism; the hands and feet are from the same case. Note the extra fingers and toes beyond the little fingers and little toes, respectively. (From the Pathological Museum, University of Pennsylvania.)

Let us return to the head and descend posteriorly. Gross failures about the cranium are probably the commonest of all forms of the single monsters, because of their almost constant etiology, adhesion. The faults of fusion of the scalp and bones of the cranium are spoken of as craniochisis, and this condition is commonly met with in connection with brain faults anencephalon, absence of brain, pseudencephalon, brainlike development without related structure, exencephalon, normal brain protruding. Descending, the failure of the posterior somatopleura with bone failure along the spinal canal, will form a rhachioschisis and in combination with head failure, which is common, cranirrhachioschisis. This is the typical frog face monster. Due to this failure posteriorly, the top of the forehead comes to lie close to the neck, protrusion of the eyeballs takes place, hypertrophy of the muscles of the neck and shoulders is likely, producing the hunched up appearance. Failure further down results in a spina bifida, bulging of the cord, and soft coverings with or without actual failure of the skin surface. Pressure of spina bifida upon spinal nerves produces secondary trophic degenerations in the muscles supplied, with play of the opposite muscles and the development of such things as clubfoot.



Fig. 4.—"Horseshoe" kidney, a fusion of both kidneys. An example of the union of parts that should remain separate. (From the Pathological Museum, University of Pennsylvania.)

Anomalies of the genital organs are common, and of these the female canal and uterus will be discussed. The different faults are numerous and dependent upon suppression or faulty development of the Müllerian duct. The difficulties do not seem to lie in the understanding of the conditions and their etiology, but in the confusion of the terminology, from the simple condition, uterus unicornis, a uterus with the suppression of one lateral horn, to the complex uterus duplex separatus, a double uterus with one set of appendages and two vaginal canals. Many variations are seen. In the conclusion of this paper I have tabulated these malformations, using the simplest accepted nomenclature.

Along the alimentary canal, failures of union at the stomatodeum and proctodeum will produce such faults as stricture of the esophagus and imperforate anus. Absence along the alimentary canal, that is of portions, is occasionally seen, especially at the esophagus. The persistence of the primitive vitello intestinal duct results in a common malformation of the intestine, Meckel's diverticulum, the latter being of clinical importance in diverticulitis mistaken for appendicitis. The persistence of the allantois as the nonobliterated urachus, and of the umbilical vein producing cyst of the round ligament of the liver, might well come in at this point.



Fig. 5.—Paramelus and syndactylism, the uneven development of the lower extremities in which the right is smaller and the left larger than a normal ratio. Both hands show three fingers, the loss being in the phalanges. (From the Pathological Museum, University of Pennsylvania.)

Failure of parts to remain separate, with or without complete fusion, may be considered briefly and such examples as the horseshoe kidney and the fused kidney with double ureter illustrate the condition.

The faulty formations of septa between cavities and other anatomical structures have a wide possibility. Of these failures the heart affords the most striking varieties. We have recently had a case at necropsy with almost complete failure of the auricular septum, so that interchange of blood in both right and left sides was intimate and yet the patient lived to adult life, without symptoms, but with perplexing murmurs. Partial failures in both the auricular and ventricular septa are quite commonly noted, and failure of the closure of the foramen ovale is not rare by any means. Other examples of this condition are seen in the absence of the falx cerebri and in the forma-



Fig. 6.—Sacral teratoma, better classified with the tumors, but at times capable of resembling true monster. (From the Pathological Museum, University of Pennsylvania.)

tion of a cloaca at the rectum. One might present a very interesting paper on anomalies of the heart alone, but I shall leave that to some future date.

The occurrence of abnormal members and parts in a single monster may involve any portion of the body or any organ of the body. Thus one encounters too many and too few fingers and toes, polydactylism and syndactylism, no head, acephalus, double head, dicephalus, supernumerary spleens, accessory lobes to the lung and liver, and many others, of which these will serve as examples. Of the displacements the variations are widespread, situs transversus being the limit in this group of cases. Single parts, as cardiodextra, are not uncommon.

A word on the hermaphrodites. There have been probably six or seven cases of true hermaphroditism reported, and no doubt the pseudoform occurs more often than the literature shows. Suffice it to say, that the true condition must not only show the external characteristics of the opposite sex, but must have histologically both ovarian and testicular structure.

The subject of multiple monsters is a wide one, the condition being due in large part to faults in cleavage, homologous twins occurring as the result of normal cleavage, and heterologous twins from the impregnation of two ova at different times. The question of union producing multiple monsters is, I think, separate from that of cleavage; which cases to call a fault in cleavage, and which to call a union, may be difficult of determination, but it is hard to conceive that twins would unite at identical points.

The cleavage faults from above downward may be considered as catadidymus. That is, multiple monsters above the pelvis and single below; those due to faults from below upward, anadidymus, that is multiple below the pelvis and single above; those with cleavage both above and below, anacatadidymus. It is at this point that the question of union (pagus) might come in. Going back to catadidymus, one sees a double face, diprosopus, janoprosopus, or janocephalus, two faces pointing in opposite directions like the god Janus. One may see a double head, double thorax, four arms, single pelvis, and two legs, when the complicated, and yet if worked out, easy term Catadidymus dicephalus dithoracus tetrabrachialis monopellus (pellus= pelvis) dipus applies.

In the anadidymus forms, where we meet with one face, two arms, one chest, but two pelves and four legs, the term monocephalothoracus dipellus tetrapus would be appropriate; the name is worked out according to the point and amount of cleavage.

The anacatadidymus monsters must be separated into those which are of a distinct cleavage, and those which are simply a union due to homologous twins becoming adherent during inflammatory processes. The term pagus (firmly fixed) may be applied to both forms, thus craniopagus attached at the heads, pygopagus at the coccyx, sumapagus the abdomen, omphalopagus at the umbilical cord, and so on.

The fetus papyraceus is considered under the heading of monsters, but in reality this is simply a crowding out of one fetus by the other, the growth of one fetus at the expense of the other so that the poor little brother becomes flattened, thinned out, and eventually completely arrested in his development.

The fetus parasiticus, of which Laloo was a striking example, the larger one being the autosite and the smaller one the parasite, probably also belongs in a class by itself, yet under the multiple forms.

The teratomata I should not classify under monsters, but I think they ought to be mentioned owing to the possibility of some of these tumors taking on at times a resemblance to body form. Their proper place should be under the tumors with the dermoid, teratoma of the ovary, testicle, and so forth.

In brief a classification as follows seems rational:

MONSTERS.

1. Quantitative faults:
   1. Gigantism.
      (a) Complete or general.
      (b) Partial.
      Macrocephalism and microcephalism, external or internal hydrocephalus, Phocomelus, larger and smaller hands or feet.
   2. Dwarfism.
2. Qualitative faults:
   1. Anomalies in substance and content of body.
      (a) Ossification and calcification of parts.
      (b) Variations in pigment, e. g., albino.
      (c) Increase in elastic tissue.
3. Faults in union and fusion between different parts of the body.
   1. Faults of fusion and persistence of clefts.
   2. Faults of fusion and union of parts that should have united.
      A. Failure of closure of somatopleura anteriorly.
         1. Head, meningocele, cerebrocele, encephalocele.
         2. Face.
            (a) Cyclops.
            (b) Rhinocephalus (protruding nose like a snout).
            (c) Cleft lip or harelip.
            (d) Cleft palate (missing incisors).
            (e) Schistonatus (cleft jaw, cleft lip).
         3. Neck.
            (a) Fistulæ central and lateral (persistence of branchial arch cleft).
            (b) Absence of ears, extra ears.
            (c) Tracheocele.
         4. Chest.
            (a) Absence of clavicles.
            (b) Schistosternum (failure of union of sternum).
            (c) Schistothorax (failure of union of chest).
         5. Abdomen.
            (a) Schistosoma (failure of union of abdomen).
            (b) Extrophy of the bladder.
            (c) Epispadias (upper part of penis).
            (d) Hypospadias (lower part of penis).
            (e) False hermaphroditism (two sides of scrotum).
      B. Failure of somatopleura posteriorly in relation to the cranium and spinal cord.
         1. Cranioschisis (failure of skin and cranial bones).
         2. Rhachioschisis (failure of the vertebræ, skin, and spinal cord posteriorly).
         3. Craniorrhachioschisis (failure of head, vertebræ, and spinal cord).
         4. Spina bifida (cord with soft covering bulging out).
         5. Failure of the spinal process in the cervical region, interference with the ligamentum nuchæ, and hypertrophy of the muscles of the neck and shoulders.
         6. Secondary degeneration of the muscles innervated by nerves pressed upon in spina

bifida, play of opposite muscles, and such secondary things as clubfoot.

C. Failures in uterus.
1. Uterus unicornis (one horn).
2. Uterus bicornis duplex (double horns).
3. Uterus septus (double uterus).
4. Uterus didelphys (two cervices).
5. Uterus duplex separatus (two vaginal canals).
6. Uterus, two vaginal canals, one vulva.

D. Alimentary canal.
1. Stricture of esophagus (failure at the stomatodeum).
2. Absence of esophagus.
3. Imperforate anus or stricture (failure at the terminal proctoderm and hind gut).

4. Failure of parts to remain separate.
1. Strictures along the alimentary canal.
2. Kidney:
(a) Horseshoe kidney.
(b) Fused kidney with two ureters.
3. Symelus (two legs as one, both sets of bones).
4. Syndactylism (symelus of fingers).
5. Webbing of fingers.

5. Failure of formation of septæ between cavities.
1. Failure of the septum between rectum and urogenital canal with formation of a cloaca. Rectum, vagina, urethra in one opening.
2. Heart:
(a) Connection between arterial and venous sides in heart formation with persistence of ductus arteriosus or duct of Botalli.
(b) Incomplete ventricular septum.
(c) Incomplete auricular septum.
(d) Failure of the foramen ovale to close.
3. Absence of the falx cerebri.

6. Occurrence of abnormal members in a single monster.
1. Polydactylism.
2. Syndactylism.
3. Acephalus (no head).
4. Acardiacus (no heart).
5. Cardioduplex (double heart).
6. Supernumerary spleens, breasts, accessary lobes of lung and liver.
7. Suppression of spleen, heart, ovary, testis.

7. Hermaphrodites:
1. True, both male and female sexual glands (six cases on record).
2. Pseudo (external changes), but sexual glands of other type.

8. Displacements:
1. Situs inversus.
2. One kidney in pelvis.
3. Cardiodextra.

9. Faults of cleavage:
1. Development of multiple monsters.
2. Homologous twins, normal cleavage.
3. Heterologous twins, two ova at different times.
2. Homologous:
(a) Fetus papyraceus (one fetus crowds out the other).
(b) Catadidymus (cleavage from above downward).
1. Double face (diprosopus).
2. Double head (dicephalus).
(a) Janocephalus (incomplete).
3. Double thorax, Dithoracus dicephalus tetrabrachialis).
(c) Anadidymus (cleavage from below upward).
1. Dipygus (cleft at coccyx).
2. Dipellus (cleft at pelvis).
3. Tetrapus (four feet).
(d) Anacatadidymus: (Cleavage from above and below).
1. Craniopagus (joined at head).
2. Thoracopagus (joined at thorax).
3. Xiphopagus (joined at sternum).
4. Pygopagus (joined at coccyx).
5. Ischiopagus (joined at ischium).
6. Pellopagus (joined at pelvis).
(e) Fetus parasiticus, e. g., Laloo is the autosite, little one the parasite.

COMMON COLDS.*

Their Relation to Sinus Diseases; from the Rhinologist's and the Otologist's Standpoint.

By NATHAN P. STAUFFER, M. D.
Philadelphia,
Otologist and Laryngologist, Dispensary of the Presbyterian Hospital; Laryngologist, Tuberculosis Department, Philadelphia General Hospital.

Common cold or rhinitis is an acute or chronic inflammation of the nasal or nasopharyngeal mucosa accompanied by an outpouring of serum and lymphocytes into the adjacent tissues and blood-vessels. We are told that common colds were believed by Galen to be the result of a brain secretion running through the ethmoid orifices into the nares, thereby relieving the brain of the engorgement due to superfluous secretions. (Phillips.)

In the hazy past I considered all colds as just common ordinary colds, caused by wet feet and exposure; this classification I acquired through my childhood escapades and never changed, until experience in the dispensaries and private practice brought a new viewpoint. I have found every man is a law unto himself in colds. Whereas one can sit in draughts with impunity, to others of a rheumatic tendency such exposure means rhinitis, laryngitis, and bronchitis.

Nowadays I search each patient's history for the cause of his cold and base the treatment on the findings. Any reputable conscientious doctor early in his practice realizes that only douching the nose and throat is not permanently going to help his patient or his own prestige. It he desires to keep his patient's confidence, he must find the cause of the recurring rhinitis and cure it, or send the patient to some one who can. I believe the majority of colds in children start from exposure, and once the nares become swollen, the child, unable or ignorant of the way to blow his nose, soon becomes a prey to rhinitis from retained secretions, and then in turn tonsils and glands become enlarged.

I shall not endeavor to discuss *exhaustively* the causes, varieties of and cures of rhinitis, but briefly to point out to my readers some of the ways I classify, prevent, or cure rhinitis.

The common cold causes many diseases; it also precedes or accompanies other infections. The chart to which I ask your attention has at each heading,

We give most frequent causes of common colds (rhinitis).....
1. Improper clothing .....in all ages
2. Adenoids..... ...in children
3. Influenza..... ...in all ages
4. Worry.....in adults.
5. Overeating and overdrinking in adults.

I have made the following classifications of colds and their causes.

1. The chief cause, I believe, is improper clothing. You all realize how dull practice is after summer vacation, until the first cold snap catches unawares the people with light clothing, or a trip downtown without an overcoat which is sadly needed before the cool evening breeze chills one to the bone, or the April shower finds us without an umbrella or a pair of rubbers. The next day there is a stuffy feeling in the nose, or a swollen tonsil followed by the usual earache or hoarseness.

*Read at the West Branch of the Philadelphia Medical Society.

2. Repeated colds in the child, ignorant of the function of blowing his nose, are the cause of adenoids. Once adenoid tissue starts to grow, the posterior nares are occluded, more irritation is produced, and we have constant colds; as a mother said to me, "my baby has a fresh cold every day." This child had double otitis media, adenoids, hypertrophied tonsils, and enlarged cervical glands. Surely it had no legitimate right to hope for a cure unless the cause (adenoids) was removed. (See Fig. 1.)

3. Of all the diseases which create havoc in the nose and ear and their sinuses, I believe influenza is the worst. Next in order I should class scarlatina, measles, and hay fever; and while diphtheria, erysipelas, rheumatism, pertussis, and variola cause many grave attacks, we see these less frequently.

CLASSIFICATION OF RHINITIS.

- Classification of rhinitis (common colds)
  - Acute
    - Infectious
      - 1. Influenza — Most common organisms found in infectious rhinitis are — Bacillus influenzæ. / Micrococcus catarrhalis. / Pneumococcus. / Bacterium fusiforme [illegible] / Staphylococcus. / Meningococcus. / Streptococcus.
      - 2. Measles
      - 3. Scarlatina
      - 4. Diphtheria
      - 5. Pertussis
      - 6. Hay fever
      - 7. Rheumatism.
    - Mechanical
      - 1. Adenoids } Cause — Hypertrophic tonsils. / Irregular teeth. / Hypertrophic nasal bones. / Purulent otitis media. / Cervical adenitis. / Undersized children.
      - 2. Deviation of septum }
      - 3. Occupational causes, dusty rooms, etc.
      - 4. Hypertrophied turbinate bones.
    - Vasomotor
      - 1. Worry, business, etc.
      - 2. Wet feet.
      - 3. Nervous exhaustion.
      - 4. Lack of sleep, late hours, etc.
      - 5. Sexual excesses.
    - Hygienic
      - 1. Poor or improper clothing.
      - 2. Autointoxication, overeating or undereating.
      - 3. Overheated or underheated rooms.
      - 4. Overdrinking—alcohol or coffee.
      - 5. Smoking excesses.
      - 6. Constipation.
  - Chronic
    - Hypertrophic.
    - Suppurative.
    - Atrophic.

Influenza attacks the Eustachian tube and middle ear so frequently that every winter we have epidemics of otitis media with involvement of the sinuses. Last year I had many families with many children in whom the epidemic of influenza attacked the nasal chambers and quickly traveled via the Eustachian tube to the middle ear cavity. Other organisms as the tubercle bacillus, spirochæta pallida, Leprae bacillus of Frisch in rhinoscleroma, bacillus of glanders, are sometimes found in rhinitis.

4. Worry causes loss of sleep and indigestion, then follow diminution of nerve power and a relaxation of the vasomotor system (the governing centre of the muscular coat of the arteries), then a consequent loss of resistance to infection. The following days, the mucosa weeps, a common cold is started, and medicine is of no avail if your patient cannot rid himself of his worries and get relaxation and sleep.

5. Overeating and overdrinking are usually coupled with late hours; we have in sequence a congestion, followed by autointoxication toxemia, with a loss of nerve force, and the mucosa again relaxes and weeps. Of what value would medicine be, if given to a man or woman who indulges in excessive whiskey or coffee drinking? They need instruction in the proper mode of living. Cure them of their gouty habits by teaching them moderation, give them exercise, and purge them; if aggravated by malformations—operate.

These are the five most common causes of rhinitis. I shall ask your attention now to the stages and discuss the treatment. Rhinitis I divide into three stages:

1. Dryness or prickling of nose and throat accompanied by chilliness. The mucosæ are quite hyperemic, dry, and free from secretions. Headache with fullness between the eyes. The temperature ranges from 99° to 104° F. Treatment comprises hot baths, purges (calomel and salts; salts especially to deplete the system of water); rest in bed; icebag to forehead; hot water bag to feet; internally ten grain Dover's powder and hot lemonade to promote sweating; in the nose, locally, epinephrine one to 5,000.

2. Profuse watery discharge, throat sore, headache less. If nose is wide, fullness between eyes diminishes, or if narrow, fullness increases. Treatment: Atropine internally until dryness of nose and throat develops; hot alkaline nasal douches; hydrochloride of cocaine daily, one per cent. solution applied. (*Caution*—Never prescribe cocaine for a patient to use at home). When using cocaine always have aromatic spirits of ammonia handy.

3. Mucopurulent discharge, a lowered temperature, pulse less bounding, headache diminishing unless sinuses are involved, whereupon headache and pressure symptoms increase, accompanied by dizziness. Treatment: Hot alkaline nasal douches, hydrochloride of cocaine to nares, oil sprays, strychine sulphate, grain 1/100 three times a day, egg and milk, increased exercise, alcohol rubs twice daily; hexamethylenamine grains five, internally, three times a day.

This deals with the common cold up to the involvement of the sinuses, whether of the nose or ear, or mastoid. In considering the sinuses I ask your attention to the early symptoms, the diagnostic aids, and the surgical treatment. My ex-



FIG. 1.—Adenoids and hypertrophied tonsils causing cervical adenitis. Showing side view of J. H., Vermont. Note the open mouth, flat nose, and swollen gland.

perience with colds and sinus conditions has led me to conclude that the most common cause of sinus trouble is, not an acute, but a chronic mechanical condition.

Adenoids are followed by hypertrophied turbinate bones, or a deviated septum, which may be the predisposing causes; the exciting cause may be influenza, or any one of the other conditions enumerated on the chart.

A blockade of the natural drainage system of the sinuses (see figs. 2 and 4) by a bent septum and forcing the middle turbinate over, is followed by certain symptoms, which are not always as clear as those enumerated in the textbooks. The regular symptoms of sinusitis are, indefinite or localized headache; unilateral nasal discharge, with or without a slight increase of temperature; foul breath; pain, usually worse in the morning, relieved by change of position, permitting flow of pus; bone tenderness; dizziness aggravated by stooping; recurrent attacks of coryza; continual dropping of pus from posterior nares.

Eye symptoms are edema of lids, supraorbital pain, worse on reading, especially eye on side affected; deep boring pain in back of eyeballs; dread of light; distress on rotating eyeballs. To show that all sinus cases do not follow the usual course and are not so easy to diagnose, I present two cases with symptoms widely differing:

CASE I. Miss T. O., aged twenty-one years, brought to the Pennsylvania Hospital with purulent otitis media and a diagnosis by family physician of acute mastoiditis. Diagnosis was confirmed and a simple mastoid operation was performed the next morning. The mastoid antrum and attic had granulations; the necrosis extended to the lateral sinus and dura but no granulations were found on either sinus or dura. Three days later, the resident told me she had chills and fever and sweats, and wanted me to open the lateral sinus; but I refused, for I remembered that it had shown no involvement at the time of the operation, also pressure now on the jugular veins failed to show the customary engorgement of the forehead veins as we should have in thrombosis of lateral sinus. I insisted on waiting a few days, and finally I was rewarded with a swollen jaw and pus in her right naris from her maxillary sinus. Here was a patient who never mentioned her jaw or nose but complained only of the inability to move her head and severe neuralgia of the ear, with headaches. Had I yielded to entreaties, I should have opened her lateral sinus on account of the typical lateral sinus symptom complex, which proved to be maxillary sinusitis complicating a mastoiditis.

CASE II. Another case will demonstrate how obscure the symptoms are to one and how plain to another. Mr. R. S., aged twenty-five years, pulse 76, temperature 99.5° F., had been treated for unilateral catarrh for a year, and suddenly manifested a small swelling on the lingual surface of the superior maxilla and was sent to his dentist, Doctor Gore, for pyorrhœa alveolaris. This dentist was an observing young man and asked if he had any unilateral nasal discharge, and upon finding a history of a right naris discharge, advised consultation so he was sent to me for examination. A deviated septum was found and pus present over anterior end of middle and inferior turbinates. Transillumination showed absence of light reflex in the right eye and a darkened area over sinus. X ray by Doctor Newcomet displayed an abscessed root, leading into the maxillary antrum, but no darkness. A Myles trocar under inferior turbinate located a large quantity of pus with a foul sickening odor. Doctor Borden extracted the second molar and I introduced a trocar into the maxillary sinus via the lingual root of the extracted molar and have syringed it out daily since; his rhinitis has ceased.

The points in this case of chronic rhinitis were the constant use of handkerchiefs, the absence of pain, of odor (noticed only by forcing air into the cavity), of tooth tenderness, or any marked symptoms pointing to his right maxillary sinus, except a slight swelling in the lingual surface of the superior maxilla, and his unilateral discharge.

The points the general practitioner wants to know are how to recognize and how to prevent sinus involvement. I should like to emphasize as suspicous: 1. Any coryza which does not tend to early recovery. 2. Any constantly recurring coryza with obstruction in nares. 3. Any unilateral discharge. 4. Headaches which are not relieved by glasses or purges.

The examination by transillumination of sinusitis with polypi and pus formation shows: 1. Absence of red pupillary reflex. 2. Absence of light over cheek and dark area under eyes. 3. No sense of light in eye when closed.

After dilatation of the nares, you can sometimes turn the head to the opposite shoulder, and pus runs out via the ostiums into nares. The x rays are good for showing a sinus present and its outlines; but I have not found it always reliable. In two cases lately with pus in the sinuses, the x ray did not show it to my eye.

Treatment: Of remedies cocaine one to two per



FIG. 2.—Common cold due to deflected septum; total occlusion of left naris; submucous resection; operation and cure.

cent. is the most efficient; epinephrine comes next, one to 5,000; and forty per cent. ichthyol in wool fat locally to deplete swollen mucosa, internally five grain

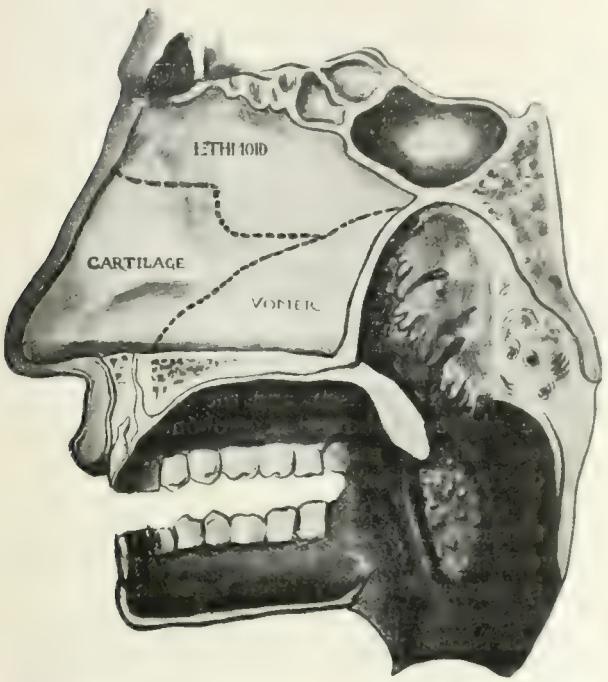


Fig. 3. Chart showing how hypertrophy of adenoids and tonsils block the posterior nares, act as irritants to nasal and pharyngeal mucosa, and divert secretions into Eustachian tubes on each lateral wall.

Dover powders every three hours, salts as cathartics; ice bag to sinus; hot baths and hot nasal irrigations. Epinephrine gives more afterirritation, causing more sneezing and swelling of the mucosa than cocaine. Many disagreeable symptoms are caused by cocaine, and great care should be exercised in applying it, but if you should happen to use too great strength of cocaine, give patient aromatic spirits of ammonia. People will faint from a one per cent. solution as easily as from a twenty per cent. in my experience. It seems to affect them in two ways. In the nares the irritation of rubbing it on the turbinates has many times caused patients to fall over. An excess runs down the throat and causes a choking sensation, which alarms the patient. I used to be afraid if I saw it run into the trachea, but after I saw twenty per cent. solution applied by the one half dram to the larynx for passing the bronchoscope, in European and American hospitals, I ceased worrying, as I knew a little excess from a two per cent. solution would do no harm.

After thorough cocainization, I believe in douching the nose with warm saline solutions. Some object to this because of the danger of infecting the ears. I have used this for years in the Presbyterian Dispensary and also in my private practice, and I believe the good results so far outweigh the bad that I feel that it is of the greatest benefit, and I thoroughly indorse cleansing a dirty nose the same as I would any cavity containing pus. I have aborted many attacks of acute otitis media with warm nasal irrigations and an ice bag to the ear.

You have all been taught there are three turbinate bones, but, as a matter of fact, you rarely see but two and many times only the inferior. The middle and important one you can see only after cocainizing the inferior and then looking high up and to the side. To cocainize the orifices correctly, you must now slip your cocaine under the anterior end of the middle turbinate and keep gradually and gently pushing it back, allowing the cotton to remain a few minutes to give you a better view. If not, you must take a medium sized Killian speculum as Skillern advises, and inserting it under the middle turbinate, pry it outward. This may fracture the turbinate but you need not worry as this only gives better drainage. In addition to the cocainization of the natural orifices, I advise rest in bed with ice bags constantly applied to the face. It is surprising what excellent results we get with the constant ice bags and warm nasal irrigations. Calomel and saline purges help materially. If not markedly improved in ten days to two weeks, you may be sure you have a more serious condition to deal with and that brings us to the operation stage.

From the rhinologist's and otologist's standpoint I want to emphasize, in closing, that rhinitis or common cold is many times just a recurrent attack due to:

1. Adenoids.
2. Deviations of the septum or malformations of the nose.
3. Polypi.
4. Sinus disease.

To prevent or cure rhinitis:

1. Remove the adenoids.
2. Do a submucous resection or removal of portions of the offending turbinates.
3. Snare polyps.
4. Do a Cooper, Kuster, Caldwell, Luc and Denker



Fig. 4. Chart showing several septums of left nares [illegible] the drainage from the frontal, ethmoid and maxillary sinuses, acting as a constant irritant to middle and inferior turbinates, causing sneezing and colds and an external deformity as in Fig. 2. Deformity and rhinitis cured by submucous resection.

operation for drainage of the maxillary sinuses, or the Killian, Jansen, etc., for frontal, or the Skillern, Ballinger, Freer, or some other good surgeon's operation for ethmoid or sphenoidal sinus disease.

218 South Twentieth Street.

THE TECHNIC OF OIL-ETHER COLONIC ANESTHESIA.

By James T. Gwathmey, M. D.,
New York,
Anesthetist, New York Skin and Cancer, Columbus, and People's Hospitals, and St. Bartholomew's Clinic.

The induction of anesthesia by injection of a mixture of olive oil and ether as proposed by me in the New York Medical Journal for December 6, 1913, and January 3, 1914, is a simple, easy, and safe procedure in the hands of an expert anesthetist. But though this procedure is simple, certain precautions must be observed. When a physician deprives a patient of consciousness he assumes the entire responsibility for his welfare, a responsibility which should not be lightly undertaken and which demands the exercise of the utmost skill and vigilance. It therefore may be well to rehearse the technic of this method of producing anesthesia, particularly since experience has shown that stress should be laid upon one or two apparently minor points.

APPARATUS.

The only apparatus required is a rectal tube, one fourth of an inch in diameter and about twenty-eight inches long, the ordinary tube being too short, a clamp for this tube, a three inch glass funnel, and a Lockwood tube about thirty inches long and three eighths of an inch in diameter. These should obviously be sterilized before use.

PREPARING THE PATIENT.

The patient's bowels should be cleared by preliminary administration of castor oil and by irrigation. One hour before the operation a mixture of two to four drams of ether in which is dissolved five to ten grains of chloretone and two to four drams of olive oil, is injected into the rectum, or a suppository containing from five to ten grains of the chloretone is inserted. Half an hour before the operation a hypodermic injection is given of from one eighth to one quarter of a grain of morphine sulphate and one one hundredth of a grain of atropine sulphate. About fifteen minutes before the operation the patient should be laid on the left side in a modified Sims position, and a mixture of twenty-five parts olive oil and seventy-five parts ether passed into the rectum gradually, through the small tube to which the funnel and clamp have been fitted. One minute should be allowed for the introduction of each ounce of the mixture. For children, a mixture containing from fifty to sixty-five per cent. of ether is sufficiently strong. One ounce of the mixture is required for each twenty pounds of the weight of the patient.

Unconsciousness usually follows five minutes after the completion of the injection and, except in rare cases, narcosis is complete from five to ten minutes later; where narcosis is much delayed a few whiffs of chloroform may be allowed. After a patient has received the mixture, the anesthetist must provide and maintain a clear air passage at all times by manipulating the jaw as in inhalation anesthesia, care being taken to prevent the air supply from being cut off, either by the head falling forward or sidewise, or by the tongue falling back. The patient, obviously, should never be left alone at any time after receiving the injection.

These explicit directions may seem superfluous, but it is an unfortunate but notorious fact that the interns in our hospitals at the present time probably know less about anesthetics and their administration than about any other one subject in medicine and surgery. The very simplicity of the procedure proves to be a snare, misleading the inexperienced into the belief that no care is required.

At the conclusion of the operation the clamp on the rectal tube is released, and the end lowered so that the residual mixture is syphoned off. The Lockwood tube is inserted into the rectum to a depth of about six inches alongside the rectal tube. About a gallon of cold soapy water is then introduced through the funnel, being syphoned off by the Lockwood tube. Toward the end of this process the colon is massaged gently from right to left, thus expelling any liquid which may be left. The Lockwood tube is then removed; from a pint to a quart of cold tap water is introduced through the rectal tube and the tube withdrawn.

The question of whether or not a local anesthetic should be used at the site of the operation, as advocated by Doctor Crile, is a matter for the surgeon himself to determine. Where my opinion is asked, I advise its use unless contraindicated by special conditions.

SIGNALS OF DANGER.

The reflexes remain active, and there is a complete absence of stertor and even of the puffing so frequently observed under inhalation anesthesia. A diminution in the activity of the reflexes or the occurrence of stertor, except in very stout persons, in whom a slight stertor is not necessarily a danger signal, or even a puffing of the lips is an indication that the narcosis is becoming too profound. When these symptoms appear, either a portion or the whole of the mixture may be withdrawn from the rectum, and if the symptoms persist the rectum washed out with cold water as above directed, the sphincter stretched, and other methods taken for recalling consciousness.

Since the presentation of my paper before the New York Society of Anesthetists, giving a report of 100 cases in which this method has been used, I have employed it in the Johns Hopkins Hospital in Baltimore, the Massachusetts General Hospital in Boston, and in several hospitals in New York. Dr. Hubert Arrowsmith informs me that it has been used with satisfactory results in upward of thirty cases in his service at the Brooklyn Eye and Ear Hospital, and I have heard, either directly or indirectly, of some 300 cases in addition to the 100 already reported. I have not in hand sufficient data to prepare complete reports on these additional cases. In a few cases I have heard that untoward effects have been noted, and it is on this account that I desire to publish this

note of warning, fearing, as I have already said, that the simplicity of the method may lead to carelessness in its use.

40 East Forty-first Street.

ORGANIC AND PSYCHOGENIC DELIRIUM.*

Differential Diagnosis; Analysis of Psychogenic Delirium.

By H. L. Levin, M. D.,
Ogdensburgh, N. Y.,
Assistant Physician, St. Lawrence State Hospital.

Delirium as regards its genesis and content may be divided into two broad classes, organic and psychogenic. The greater number of cases occur in acute organic disorders, i. e., fevers, infection, endogenous and exogenous toxemias, and in exhaustion conditions. It is not clear just how the disturbance is brought about. It has been suggested that the organic delirium is the result of a metatoxic condition, e. g., in a chronic alcoholic it is not the alcohol itself which causes the trouble, but rather the metabolic disorder induced by the alcohol.

The clinical picture differs in some of its detail in the various organic forms, but the common underlying principles are: 1. Great elaboration defect; 2, great diminution in the mental tension; 3, complete disorientation; 4, fragmentary train of thought; 5, speech defect; 6, hallucinations.

The most striking thing is the difficulty the patient has in properly elaborating upon impressions received from his environment, hence he is disoriented. Simple solitary impressions may be comprehended, but the elaboration disorder is too great to admit of the patient taking in the entire picture of his environment. The mental tension is lowered; he is not very alert; cerebration is going on only in the lower levels of consciousness, hence the train of thought becomes fragmentary. But it is important to note that the level of consciousness keeps vacillating. At times the patient's attention may be attracted readily (when attention once is obtained, the retention is not so bad; this is in contradistinction to Korsakow's disease, where the retention is always markedly impaired, irrespective of the attention); at other times his attention is obtained only with difficulty. It is interesting to observe under what conditions these changes occur; the level is generally lower at night because the darkness and stillness remove some of the stimuli. We can even then, however, by the mere stimulation of an examination make him more alert.

The hallucinations are more marked when the patient is in the lower levels of consciousness. The stimulus of talking may stop hallucination and patients may take in their environment better. When you stop talking, they again become hallucinated. In some cases the hallucinations are not obvious, but one can bring them out by increasing the endoptic phenomena and excluding normal stimuli. This is done by closing the patient's eyes and rubbing them rather briskly, at the same time asking suggestive questions, as "What do you see? What color is the animal?" Not only visual, but tactile hallucinations are found in organic delirium. If these are not apparent, a leading question will bring them out, e. g., "What is crawling on your hand? Take this thread?" The *content* of the hallucinations is rather ordinary, taken out of the patient's everyday life, in contradistinction to the delirium in hysteria and dementia præcox, when it is queer and bizarre. As a rule, Freudian mechanisms do not play a consistent or prominent part.

The speech defect consists in an indistinctness or slurring, and a literal paraphasia, a misplacing of letters or syllables, not the verbal paraphasia seen in cortical lesions. The effect is generally one of fear.

Psychogenic delirium occurs in hysteria and dementia præcox. As to the differential diagnosis, there is no evidence of organic disorder; or where it does exist, it comes on secondarily as a result of the delirious activities. The centre or nucleus of the delirium seems to consist of a wish-fulfilment, which may express itself frankly or symbolically. Reality becomes entirely unbearable, hence the patient in his delirium changes his environment so as to fit in with his wish fulfilment; the nonessentials become essentials and vice versa; he distorts persons and things, misinterprets sounds, and some elements of his environment may be ignored absolutely, but with it all he actually remains oriented. The level of consciousness does not vacillate; there is no speech defect, and hallucinations cannot be produced artificially. The affect is usually a pleasant one and may amount to ecstasy.

PSYCHOGENIC DELIRIUM OBSERVED OBJECTIVELY.

This account is given by the patient's brother, a physician. In the winter of 1905-1906, the patient fell in love with an estimable young woman, a social settlement worker in New York city. In the summer of 1906, he was engaged to her. At this time he was doing architectural designing of exceptional merit in New York. Toward the end of August, 1906, he returned to his brother's home, told him that he had been disappointed in his love affair, but hoped nevertheless to be eventually successful in regaining his sweetheart's affection. He spoke about dropping architecture and devoting his time to preaching against Christian Science, and showed other signs of mental aberration. A few days later, he disappeared and his whereabouts was unknown. It afterward developed that he had taken the train, got off, walked about through the fields and country roads, then took a sleeper again, got off once more, leaving many of his personal effects in his berth, and wandered around, barefooted and hatless, in the fields. He referred to this afterward as "walking the thorny road." At nightfall he appeared in this forlorn condition on the train, walking up and down the aisles and greatly confused. Asked where he was going, all he could say was "Dr. A. W." (his brother). The brother was notified and came to R———, where he found the patient in a pitiable state, his feet sore and swollen, his clothing wet and covered with burrs. They took the train back to W———. Through the night he started several times to rise with the idea that he had some still further call to answer; whither, he said he did not know, but his brother was able each time to persuade him to lie down again. In the morning, however, he had to resort to hyoscine. Later in the morning, he had a long period of exaltation, in which everything appeared funny. On arriving home, he refused to eat meat, and had an idea that he would go and heal an aged friend who was on his death bed. He was taken to the psychopathic ward in the Albany Hospital, where he remained for about a month. His symptoms cleared up; he admitted that he had been abnormal, but maintained that he was not insane, and that it was a mistake to put him with insane people. He was

*Read before the Ogdensburg Medical Society, January 8, 1914.

able to return to his architectural work in New York city, and got along until March, 1908.

The patient gave a partial account of this episode on his first admission here in August, 1910, but it was all (with one or two minor exceptions) in narrative form, and did not offer any more information as to what was really going on in his mind at this time, than could be deduced from his brother's account. He offered no explanations for any of his acts or thoughts; in fact, he denied, in one instance, giving any special interpretation to the environment, or his actions. Thus far there is no clue as to the why and wherefore of the delirium, or for any one of its incidents, and in the past we were satisfied to let it go at that, taking it for granted that they were meaningless and that there was no particular underlying motive. In fact, we had no way of getting at the motive. Even in those cases where the patient was anxious to cooperate with the physician, direct questioning very seldom brought out the motivating agencies. It was only by subscribing to the theory of the "unconscious," and tapping this layer of the mind by means of the hypnoidal, and later by the psychoanalytic method, that investigators in this field were able to find out why these phenomena occurred and what they meant.

In this particular case, during the course of a psychoanalytic interview, the patient recalled this delirious episode and described it substantially as given above. Each item of the delirium was then taken up separately and the patient was asked to tell all that came to his mind. At times he reacted quite frankly, at other times it was evident that he was hiding thoughts. As he is a dementia præcox patient of several years' duration, it was impractical to attempt to get any better cooperation. However sufficient associations were supplied by him (this took up two interview hours) to enable even the casual reader to discover the motive and to interpret the apparently meaningless activities. The following is the patient's own account and the associated thoughts it called forth:

Early one morning he heard a sparrow scratch on the tin roof; he took it as a hint to "go out and dig." He did not rest well during the night; he thought that his father and brother arose from their graves and were coming home, and that he was to be removed to the cemetery. He felt satisfied that this should be so. He got up, looked in the mirror, and thought his face turned to that of his brother John (died 1900). The bright sunlight suggested resurrection morning. A short time previous one of his nephews was circumcised. He took this incident in conjunction with the foregoing events as an omen that there was to be a great change in him, a sort of consecration, or an initiation into a new existence. For some reason, he is unable to tell why, he left home that morning intending to go to New York to work. He got as far as A———, but again for some unknown reason took a sleeper that evening back to W———. En route to New York, he got off at R——— and walked about for a short time. In some way he connected Christ with the sun. He rode on to U———. At U——— ideas about harems occupied his mind; they seemed a sort of goal toward which he was bound. He felt some bodily sensations. Seemed to attract the attention of other people. When he was near certain women, there seemed to be a sort of electrical current, a sort of intercourse. He got off at U——— and, as he went along, he kept saying to himself "Oh for the wings of a dove," alluding to the psalm. Mendelssohn's music ran through his mind. His idea was to fly away and get rid of his trouble and worldly cares, etc. As he went along and saw women, a vague idea of intercourse entered his mind, but did not definitely shape itself into a wish. Saw animals in pastures and that suggested ideas of intercourse with animals. (In actual life there were two such incidences during childhood.) As he wandered about the outskirts of U———, this thought recurred often—"outskirts, found without skirts." En route from A——— to W———, there seemed to be a physical change, his whole body seemed to draw, as if the flesh was disappearing between his bones (pointing to hand), a "sort of change, a sort of rinsing." He smelled something like burning sulphur, like the smell of a corpse. While in the Pullman sleeper, he was disturbed by the idea, that he was a great king, like King David, King of the World. He also thought that at the same time he was being mocked at by some vague spirits. This mockery was a necessary process he was to go through before he could become king of the earth. He saw sparks leave his body, and as each spark flashed he announced the words "Father, Son, and the Holy Ghost." It made him jump in his berth. Lights along the track were spirits, his father and brother. He arrived in U——— in early morning and the carloads of people sleeping in their berths suggested to him that this was the day of Judgment. When he awoke and looked around, everything seemed changed, grass, etc., burned up, everything different. He thought that in some mystical way his train was transported to an island in the Mediterranean, where Miss X., his sweetheart, was. At U——— he saw a sign advertising a food product, reading "the ham that am." It suggested to him that in some way it had to do with a certain traffic of "extra fine" white slaves that a meat packer was carrying on, and that in some way the latter was connected with the mother of his sweetheart. He imagined that there was an undercurrent of double meaning going on in connection with the signs and advertisements seen along the railroad tracks, relating especially to women. The picture of a negro cutting the ham, the shape and coloring of the ham, symbolized a woman's sexual organs. He imagined that the proprietors of this product had some inside information in regard to buying expensive women for immoral purposes. In actual life, he had every reason to believe that Miss X. loved him and would have married him if Mrs. X. had not stood in the way. Miss X. and her mother were almost opposites in temperament. Miss X. was religious, of the trusting kind. Her mother ridiculed religion, was a great admirer of Robert Ingersoll. Miss X. was the more noble character. They often quarreled. He once met a Mr. G. at the house of Mrs. X. Mr. G. is the proprietor of a sign painting company which contracts for such signs as are seen along railway routes. Patient thought he was rather rude, coarse, not the kind that Miss X. would prefer to associate with, but probably very acceptable to one of Mrs. X.'s temperament. For some unknown reason Miss X. did not answer the letters, which he wrote her to Rome, Italy, from New York. After about a year he received a letter from her mother stating that she was married. He considered it very queer that he had not been informed just whom she married, where she was living, whether she was happy or not, children, etc. He had not given her up, and would not do so until he heard definitely that she was happily married and in comfortable circumstances. He had attempted to obtain this information, but without success. Thought she was living some place in Germany. The delirious episode took place while he was awaiting an answer from Miss X. and prior to his receiving the announcement from her mother that she was married. En route from U———, while at R———, the country looked entirely strange to him from the car window. A little woman standing in front of a cabin near the station, he thought was his sweetheart. She seemed to wave her hand, to beckon to him. He got off the train and went toward this cabin, but when he got there she was gone. He climbed up a ladder, couldn't tell just why. Then he went across the railway tracks, guided by a little gust of wind blowing on his neck, and also by some kindly spirit. Went a considerable distance over marshy places and fields, crossed gullies and creeks. He finally came to a stop somewhere, undressed, and shouted out the name of his sweetheart. He imagined that he was a sort of Adam, and his Eve would come if he called her. He heard the cars breaking and bumping, and imagined that the people in the sleepers were being sent to their judgment. He remembered shutting his eyes and kneeling down in the fields, trying to keep the light out of his eyes. The red, however, came through and this he took was a communi-

cation from Heaven. He tried to work a miracle. His mind was occupied with things biblical; the preachments he heard in his youth, i. e., "if you have faith enough, you can remove mountains." He thought he had the necessary faith, but somehow it did not go. He thought the spirits were laughing at him and showing him the folly of that statement. He came to a stream and lay down in it as a sort of baptism. It made him feel very much better, in fine spirits; never felt better. The thorns, briars, and stones hurt his feet. Thought he would be comforted along the road, and he was. For example, he saw a daisy, and he took it as a communication from his departed brother, John, the word daisy having the meaning of "fine, lovely, go ahead." He heard swine squeal in the distance, and immediately thought of "casting out the unclean spirits, etc." He went into a field, following a narrow path, and came to a place where evidently some animals had lain down. He thought that his father and brother John had ascended into heaven from this spot. He took off his shoes there because it was holy ground. It all seemed like an initiation into something. After that he felt he was on some sort of raised place. He undressed and lay down on the ground in a place that seemed to be hollowed out to receive his body. Seemed to have the feeling one gets before intercourse. Had an erection, but did not masturbate. As he lay on the earth he enjoyed a very wonderful sensation of looseness and ease, his whole body seemed to feel as he imagines one would feel if under the soothing and sensuous influence of opium. Then he sat down naked in some partially hidden place. He thought in some way, his sweetheart was to come there, and that they were going to live as Adam and Eve. He shouted for her, called her by her first name; no answer came. He went into a little wooded spot and fell asleep. When he awoke his entire body felt numb and asleep. Insects were biting him, but he did not remove them, felt they were doing him good. He got up walked about until he came to the side of a hill. There he saw several holes like graves, from which he thought bodies were blown out from some depth. It had something to do with the resurrection. He wandered about all day. Toward sunset he followed a road and it brought him to the station. The lights and signals were some heavenly beings. He was in Heaven somewhere, a neophyte. They all understood electricity, but he did not understand it. Electricity was in some way connected with his brother John. John had studied electricity, chemistry, and physics, and now that he was living in the spirit he understood infinitely more about it than when he was on earth. He plucked some flowers which he imagined his brother John wanted him to send to a former sweetheart in New York. It recalled some flowers his father sent to his mother from Scotland. He imagined John's attitude was, that Miss X. was not the right kind of a girl; could have her if he wanted to, but there were others a lot better.

At R——— they asked him what passed through his mind. He did not feel at all like telling them and passed it all up by saying "some one done me dirt." They handed him over to the authorities, who notified his brother.

He looked at the moon and connected it in some way with his sweetheart. There was a sign there, near the tracks, advertising a patent medicine, the figure of a woman lying in a crescent. Miss X.'s name is Cara. The sign had a special meaning to him. It was derogatory to Miss X. She was the butt of the meat packer mentioned above, and her mother and several people were trying to make money by having her play the part of a very wonderful type of mistress.

What he wished to bring about in this episode will become quite obvious when the references to his father and elder brother are explained. In other interviews he spoke of his difficulties in solving his sexual problem. There were several perverted acts during his youth, and he masturbated while at college. There was a terrific mental conflict. He resisted the environment in New York for about a year, but here also there was a constant struggle. Finally he began to go with street women, but the struggle continued. He would confess to his brother, a high school principal, but his brother he imagined was abnormally scrupulous, like his father. (Both are now deceased.) His father, a clergyman, was at one time his ideal type of manhood, but now the patient's attitude has changed. His father's experiences were too limited. His actual acquaintance with the underworld was not that which would advance him with the advance of civilization. He had not sinned enough with sinners; a one sided development. Patient thought his brother was making a foolish fight against instinct. As time went on, the conflict became less, at least consciously, and the "still small voice" was subdued sufficiently to allow, on one or two occasions, even abnormal intercourse with women. Whenever he met an attractive girl in his own set, however, the conflict again came to the front. He would feel that because of his promiscuous intercourse he was not worthy to gain her love, and would resolve to lead a strictly moral life, but this resolve would not be lived up to. Now, when Miss X. ceased communicating with him, and without giving any reason, it is assumed that the old conflict flared up with renewed energy, and he wished that his life had been as spotless as his father's and brother's. In that event she could have had no possible excuse. In his delirium, his religious training and beliefs come to his aid, and he lives out this wish in fantasy form, the psychological mechanism concerned being principally "symbolism." He is cleared of his past, resurrected into a new life, consistently enough under the auspices of his father and brother, and is ready to enjoy a garden of Eden existence with his loved one.

There is also another wish thought represented in his delirium; in the event of Miss X. still refusing him, that he may be worthy of finding, and actually will find some one as good or better. In the delirium his brother consoles him by telling him that Miss X. is not the right kind of a girl; that he could have her if he wanted to, but there are others much better.

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THE DOSE OF HEXAMETHYLENAMINE.*

Based on chemical test for free formaldehyde in the fluids of the body.

By F. D. Austin, M. D.,
Charlotte, N. C.

During the past two years various papers have been read and discussed by some of our best men bearing on the excretion of formaldehyde from hexamethylenamine and the allied compounds by the different organs of the body, all agreeing that there is a variation in the amount of the drug required to show free formaldehyde in the different fluids of the body, particularly the urine.

Before taking up the details, it seems desirable to give a short historical review. Hexamethylenamine is formed by the direct action of four mole-

*Read before the Section on Nervous and Mental Diseases of the [illegible]

cules of ammonia on six molecules of formaldehyde gas:

$$4\,NH_3+6\,HCO=(CH_2)_6N_4+6\,H_2O.$$

It occurs in odorless, colorless crystals, readily soluble in water, less soluble in alcohol. It was first prepared by Butherow, about 1860. When acid is added to an aqueous solution there is a partial decomposition into formaldehyde and ammonia, and, on boiling, complete decomposition. Boiling alone partially causes decomposition. The drug was introduced into medicine as a urinary antiseptic by Nicolaier, about 1895, and has ever since been extensively used all over the world. It was used as a urinary antiseptic alone until S. J. Crowe, in 1908, gave it a reputation as a gallbladder and pancreatic disinfectant, and, in 1909, brought it into its present use as a curative agent in cerebrospinal infections. Armstrong and Goodwin, following Crowe's method, introduced it, in 1911, as a disinfectant of the sputum in tuberculosis, pneumonia, bronchitis, etc., also infections of the nose and throat. After giving it by the mouth hexamethylenamine is found in all the fluids of the body. Many clinical contributions of a more or less confirmatory nature have been added, and the use of the substance as a bactericide in these conditions has grown almost to equal its use as a urinary antiseptic.

TOXIC EFFECTS.

Burnam has injected hypodermically into a two pound rabbit one hundred grains of the drug without the least toxic effect. The equivalent dose for a man weighing 150 pounds would be eighteen ounces. He noticed one difference in man and rabbit in regard to excretion; it is always eliminated as hexamethylenamine and not as formaldehyde in the rabbit. If it was converted into formaldehyde, it would in all probability kill the rabbit in a few hours. The toxic effect of hexamethylenamine on the human being has been due to the liberation of formaldehyde gas in the urine in too strong solution. The symptoms are frequency of urination, hematuria and vesical irritation.

TOXIC EFFECTS OF FORMALDEHYDE.

Weak solutions of formaldehyde from 0.5 per cent. to one per cent. in strength applied locally for any length of time are irritant to the skin. In persons who take large amounts of formaldehyde for suicidal purposes, or from accident, we have violent gastrointestinal symptoms, sometimes coma, even death. Death results from paralysis of the cardio-respiratory system. I have never heard of any person being poisoned by the liberation of formaldehyde after taking hexamethylenamine.

ANTISEPTIC PROPERTIES OF HEXAMETHYLENAMINE AND FORMALDEHYDE.

The opinion of other investigators, of whom there are many, and my own experience is that formaldehyde is a slow but sure germicide which inhibits the growth of bacteria, even in very dilute solutions, and that hexamethylenamine itself has no bactericidal or inhibitory power, even in ten per cent. solution.

A solution of one to 5,000 formaldehyde will destroy the typhoid bacillus and the streptococcus within twenty-four hours. Staphylococcus aureus and albus are readily killed in twenty-four hours with a one to 6,000 solution. A one to 30,000 solution will inhibit the growth of gonococci. A dilution of one to 30,000 will almost completely inhibit the growth of any bacteria. A dilution of one to 40,000 has little effect, and a one to 50,000 has none. So, if we expect to obtain bactericidal results from the use of hexamethylenamine, we must give a sufficiently large dose to get the free formaldehyde in solution in the given secretion, or excretion in a one to 30,000 or stronger.

TESTS FOR HEXAMETHYLENAMINE AND FREE FORMALDEHYDE.

The most delicate qualitative test for hexamethylenamine or formaldehyde in solution is known as Hehner's test. The test consists of ten drops of milk added to a few c. c. of the fluid to be tested. This mixture is then spread over a reagent made by adding one drop of a three per cent. ferric chloride solution to 100 c. c. of pure sulphuric acid. If either hexamethylenamine or free formaldehyde is present, there will form at the line of union a deep amethyst ring. This test has one serious objection, that you cannot distinguish between hexamethylenamine and formaldehyde. It is extremely delicate and will show formaldehyde in dilution of one to 1,000,000 and hexamethylenamine in one to 750,000.

I beg to submit herewith two reliable tests for showing free formaldehyde in solution, viz., Burnam's or Ramini-Burnam's and phloroglucin. The former test is composed of three reagents:

Solution phenylhydrazine hydrate,.....0.5 per cent.;
Solution sodium nitroprussiate, ...0.5 per cent.;
Saturated solution sodium hydroxide.

To five c. c. of the fluid to be tested, add one c. c. of the first two reagents, shake, then add one c. c. of the sodium hydrochloride solution. If free formaldehyde is present in one to 250,000 or more, it will show a bluish green yellow to a blue black color, as the strength of the formaldehyde dilution may be. For example, if you have a specimen of urine that gives a faint blue or greenish color quickly turning to a yellowish brown, you put this down as a one to 150,000 or less. If you have a specimen that gives you a bluish black color, this indicates a one to 4,000 or more. The color we should try to obtain is the bright blue, indicating from one to 30,000 to one to 40,000, and this dilution present in the urine for three or four days will give wonderful results in any infection of the genitourinary tract.

The latter test is perhaps the best for ordinary work; it is much simpler and there is but one solution, whereas in Ramini-Burnam's there are three solutions and two of them are very unstable. The phloroglucin test is stable, and the test solution is made as follows:

Phloroglucin (reagent-Merck).....1 gram;
Sodium hydroxide solution, fifteen per cent..100 c. c.
Mix.

This solution will turn to a violet color immediately after preparing, but this in no way alters the solution, and it will become clear in a few hours.

The test is made as follows: To five c. c. of the fluid to be tested add one c. c. of the reagent. If

free formaldehyde is present in a one to 10,000,000 dilution or more, it will give a trace of color, pink to blood red, as the strength of the dilution may be. A deep red indicates a one to 30,000 dilution, and is the color we try to obtain in order to get the antiseptic or germicidal value of the formaldehyde in solution.

COMPARATIVE DELICACY OF THE TESTS.

Strength of solution.	Rannt Burnam's test.	Phloroglucin test.
1:1,000	Blue black	Blood red
1:10,000	Deep blue	Very deep red
1:30,000	Bright blue	Deep red
1:50,000	Bluish green	Less deep red
1:100,000	Green	Lesser deep red
1:250,000	Light green	Light red
1:500,000	Greenish yellow	Very light red
1:1,000,000	Greenish hue	Light pink
1:10,000,000	Trace of green	Trace of pink
Distilled water	Trace of green	Clear and colorless

AGENTS THAT AID THE ELIMINATION OF FREE FORMALDEHYDE.

There are a few patients in whom even large doses of hexamethylenamine will fail to give free formaldehyde in the urine. This is due to the fact that the secretion is alkaline or neutral in reaction, or that the patient is voiding urine every ten or fifteen minutes, thereby not giving the acid in the urine time to decompose the drug into free formaldehyde. To this class of patients you must administer some vesical sedative, and limit their supply of water. If this fails to show free formaldehyde in the urine, you must give forty-five grains of boric acid or benzoic acid, or 120 grains of acid sodium phosphate per diem. This will give free formaldehyde in the urine in ninety-five per cent. of the cases. There are, according to other investigators, certain individuals in whom you cannot produce free formaldehyde in the urine, regardless of what procedure you may follow. To this class of patients hexamethylenamine is absolutely of no value.

It is an indisputable fact that weak acid solutions of hexamethylenamine will liberate free formaldehyde in thirty minutes. Boiling the solutions in distilled water will also liberate free formaldehyde, and to incubate a given amount of hexamethylenamine in distilled water for one hour at body temperature will give a one to 100,000 dilution test.

Hehner's test will show hexamethylenamine in all the alkaline secretions of the body, but Burnam's or phloroglucin will not show free formaldehyde in any that is not acid in reaction. The only hope for hexamethylenamine to be of any value in alkaline secretions is that the body temperature will decompose it very slowly. On the other hand, very high dilutions are bacteriologically valueless.

It might be well to state here that a given specimen of urine, which shows a weak dilution of formaldehyde, will, upon standing in a vessel for two to four hours, show a much stronger solution owing to the acid in the urine acting upon the hexamethylenamine in solution. A specimen of urine, neutral in reaction, which will show hexamethylenamine present with Hehner's test, will not show formaldehyde with Burnam's or phloroglucin test upon standing six hours or longer, but, upon the addition of a few drops of any acid, it will show free formaldehyde in thirty minutes. For this reason all specimens of urine should be tested immediately in order to ascertain whether or not you are getting free formaldehyde in the urine while it is in the bladder, and not after it has been voided.

WHERE HEXAMETHYLENAMINE IS DECOMPOSED.

Where is hexamethylenamine decomposed into free formaldehyde? All the acid secretions of the body contain free formaldehyde when the person takes the proper dose of hexamethylenamine, and under the proper conditions. Burnam thinks that probably the kidney epithelium has a specific action on the drug. He bases his conclusions on the fact that very rarely you will find free formaldehyde in alkaline urine. The body heat probably aids in its decomposition. Personally, I have arrived at the conclusion that we get free formaldehyde whenever the secretions are acid, and this is probably aided by the heat of the body, and that the kidney epithelium has no specific action on the drug.

EXCRETION OF HEXAMETHYLENAMINE IN THE URINE AND THE TOLERANCE OF THE GENITO-URINARY TRACT TO FORMALDEHYDE.

When hexamethylenamine is given by mouth, it will appear in the urine in from fifteen to thirty minutes, reaches its maximum in two hours, and gradually subsides till at the end of four or five hours, when it will rarely be found present.

In chronic cystitis, irrigations of one to 3,500 to one to 5,000 of formaldehyde are very valuable and well tolerated by the bladder. In very acute cystitis, solutions of this strength are sometimes a little irritating. There is no case that will not tolerate a one to 10,000 solution for a considerable length of time.

EXAMINATION OF BILE, SALIVA, SPUTUM, AND CEREBROSPINAL FLUID.

Burnam was unable to find free formaldehyde in the bile, saliva, sputum, and cerebrospinal fluid with his tests, but showed the presence of hexamethylenamine with Hehner's test. I have been unable, even after sixty grain doses, to detect free formaldehyde with either Burnam's test or phloroglucin, but have demonstrated the presence of hexamethylenamine in the secretions with Hehner's test.

BLOOD, SWEAT, AND STOMACH CONTENTS.

The blood serum will show the presence of hexamethylenamine in solution, but not a trace of free formaldehyde. The sweat will show the presence of hexamethylenamine in solution, and occasionally gives the reaction for free formaldehyde about two hours after giving thirty to forty grains of the drug by mouth. The sweat is normally alkaline, but, when mixed with sebum, it is acid. This explains why we occasionally find traces of free formaldehyde in this excretion.

The stomach contents will show a one to 100,000 dilution test for free formaldehyde one hour after giving fifteen grains of hexamethylenamine by mouth, with both Burnam's and the phloroglucin test. This is due to the action of the hydrochloric acid in the stomach on the hexamethylenamine.

CLINICAL OBSERVATIONS AS TO THE DOSE OF HEXAMETHYLENAMINE REQUIRED TO PRODUCE FREE FORMALDEHYDE IN THE URINE.

In a series of fifty cases tested out by myself, I have found that a dose of hexamethylenamine from five to thirty grains every four hours is required to

show free formaldehyde in any dilution, in the urine. It takes from ten to forty grains, every four hours, administered under proper conditions, to give the one to 30,000 test, or the characteristic color as previously stated. There is absolutely no way to judge the amount of hexamethylenamine required in any given case to show free formaldehyde except by a test for it. In patients who have an idiosyncrasy to the action of formaldehyde you will occasionally have complaints of frequency of urination and burning on urination, and, rarely, they will have hematuria. Personally, I have never seen a patient show blood in his urine from taking hexamethylenamine, and the only untoward symptom I have noticed is frequency of urination.

Very rarely patients may complain of the drug irritating their stomachs, of slight nausea, lack of appetite, and a burning sensation in the stomach. If they are instructed to chew the tablets, or dissolve them in water before swallowing, and when practicable take them when there is food in the stomach, so as to dilute and prevent the formaldehyde from irritating the stomach walls, they seldom have trouble with the stomach, regardless of the size of the dose.

CONCLUSIONS.

The Ramini-Burnam's and phloroglucin tests are very simple, and when used give the physician the easiest method of determining the dose of hexamethylenamine in any given case.

It is the duty of every physician who gives the drug to make the test, for without it he cannot possibly know the amount of free formaldehyde he is getting. These tests are of great value in determining the formaldehyde value of the many urotropin compounds. The allied compounds fail to give greater antiseptic values than the pure hexamethylenamine.

The conclusion of different investigators in regard to the antiseptic value of hexamethylenamine in the alkaline fluids of the body, is that it is according to laboratory findings absolutely valueless, that it occurs in too weak a dilution, if at all, in the free state. I have no explanation to offer for the often reported clinical and bacteriological improvements of the secretions, other than the urine, for I have not tested them out as I have the urine. The conversion of hexamethylenamine into formaldehyde is a simple chemical process which will readily occur in an acid medium, but not in an alkaline. The amount of free formaldehyde excreted is influenced by the size of the dose, by the frequency of its administration, by the degree of acidity in the body fluids, and by the body heat. The low acidity of the urine can be greatly overcome by giving certain acid producing drugs. The ordinary dose of five to seven and a half grains of hexamethylenamine three times daily will fail to give free formaldehyde in amount sufficient to be of any antiseptic value.

I desire to express my thanks to Dr. F. W. L. Tydeman for his valuable assistance during the progress of this work.

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504-506 INDEPENDENCE BUILDING.

SALVARSAN IN RHINOSCLEROMA.

LOUIS G. KAEMPFER, B. S., M. D.,
New York,
Assistant, Nose, Throat, and Ear, Mount Sinai Hospital, Outpatient Department.

Rhinoscleroma is a chronic infective granuloma of very slow growth, characterized by the production of nodular thickenings in the skin of the nose or in the mucous membrane of the nose, pharynx, or trachea. While these are the usual sites of the lesions, they may extend even into the smallest bronchi. Indeed, almost any part of the body may be affected. Güntzer, in a review of the subject, cites cases, reported by Zeissl, on the skin of the face and body. Elzina and Pawlow report a case in which the lesion was in the orbit, having grown through the orbital fissure. Pick found one in the external auditory meatus.

The disease, though it apparently thrives in all parts of the world and under varying climatic conditions, is rarely seen in this country. So far as we know, it has not occurred in natives of the United States. In the cases so reported, the absence of the cardinal points and the neglect of pathological substantiation cast doubt upon the validity of the diagnosis. It is endemic in some districts in Poland and in the adjacent provinces of Prussia and Austria. Cases have been reported in natives of Egpyt, Cuba, Central and South America, and a case has been reported in a Chinaman. Two cases, known to the writer, came from the district around Kieff, in Russia. Another case, which clinically was rhinoscleroma, but which disappeared before the diagnosis could be established by examination of the tissues also came from that district. Emil Mayer, of New York, in 1908, collected sixteen cases in the United States. All of the patients came from some part of Poland; none of the cases originated here.

In this series there were thirteen females and three males, although in the entire literature the division of the sexes is about equal. The disease may commence at any age. In Mayer's series the youngest was nine and the oldest fifty-four years old. Most of the patients were young adults.

Occupation seems to have little bearing upon the causation of rhinoscleroma. Juffinger asserts that it is a disease of poverty and is found among the poorer classes of Russian Poland, who live in huts, mostly unfloored, in close propinquity with their domestic animals. Be that as it may, rhinoscleroma has never been found in animals, and conditions such as these prevail in other scleroma-free countries. At all events, it is rarely seen in persons of easy circumstances, the greater number of cases being in the very poor.

According to Kaposi, it is not contagious; he never saw a case that could be traced to a previously existing one. Since the publication of Mayer's series the writer has been able to find the following cases reported in American literature:

1. Güntzer, in 1909, reported two cases.
2. Braun reported a case in a young Italian, aged twenty-seven years, in whom the diagnosis of lymphosarcoma and

syphilis were first made. There was obstruction of the right nostril.

3. Thro's case was in a Russian, male, aged thirty-five years. There was partial obstruction of both nares. The diagnosis was confirmed in the laboratory.

4. Lieberthal showed a case with unilateral (left) involvement of the nose, which was ulcerated. Cultures from scrapings and from blood obtained from the growth showed diplobacilli. Because of the absence of pathological substantiation, the unilateral position of the lesion, and the ulceration, one should hesitate to accept this as an authentic case of rhinoscleroma. The nasal culture findings are certainly insufficient evidence.

5. Harmon Smith reported three cases, two of which had already been reported by Güntzer.

6. Dürkee's case was in a Russian girl, aged twenty years. The nose and larynx were involved.

7. Iglauer reported a case in which the lesion was in the nose. The patient was a woman of twenty-eight years, a Russian.

We have, then, in the literature seven cases reported since 1908, most of them in Russians and all in early adult life. It is quite probable that rhinoscleroma is not so rare in this country as these few cases would indicate. Especially here, in New York, with its enormous number of Russian immigrants, many of them from districts in which the disease is endemic, it would seem that more cases should present themselves at the clinics. It is very probable that they are not recognized and are considered to be simple hypertrophies or tuberculosis, syphilis, or sarcoma.

PATHOLOGY.

The disease is characterized by the development of chronic, nodular growths in the mucous membrane of the upper air passages and in the skin of the nose. At first the nodules are smooth, red in color, and soft. They soon become shrunken, harder, and pale or grayish white. Their centres become depressed, and the whole surface of the growth has a characteristic shiny, crinkly appearance. The nodules are usually sessile, though they may have narrow pedicles and resemble ordinary mucous polypi. In the nose they may become quite large and cause marked deformity. In the pharynx and larynx stenoses by virtue of the size of the growth, or from cicatricial contracture are seen and may cause serious interference with breathing and swallowing. The mouth and tongue are rare sites for the lesion. Nodules have been found as far down as bronchi of the second and third dimension.

The growths consist of new formed granulation tissue with old and new fibrous tissue and very many small round and oval cells. Beside these, there are in the deeper parts of the masses the characteristic cells of the lesion, the Mikulicz or foam cells. These are several times larger than the other cells, and either round or irrgular in outline. The cell bodies in some are granular, but usually the protoplasm appears gelatinous. The nuclei are paler than in the smaller cells and are pushed to one side. Hyaline masses, the "Russel bodies" are also found in the deeper parts of the lesion.

In sections of tissue stained according to Gram, there can be seen, in the Mikulicz cells and in the lymph spaces surrounding them, the small, oval, capsulated diplobacilli described first by Frisch, in 1882. These do not retain the stain and resemble morphologically and culturally the diplobacilli of Friedländer. They are almost always found in pure culture.

Whether or no the so called bacillus of rhinoscleroma is really the cause of the disease, has formed the basis of some discussion. The weight of authority, at the present time, seems to be against the organism as the etiological factor. Wright and Strong conclude that the bacillus of rhinoscleroma and Friedländer's bacillus are identical. Perkins says that the presence of the bacillus in the lesion is due to a secondary invasion, that it is not the cause of the disease, and that there are several organisms of the same group that are found in different cases of rhinoscleroma. He says, "the endemic quality of the disease, the apparent absence of transmission by contact, in spite of the number of organisms in the nasal exudate, and the sporadic type of the disease outside its narrow endemic limits are all against the rhinoscleroma bacillus as the causative factor."

SYMPTOMS.

The disease seems to have no effect on the general health of the patients nor does it predispose to other diseases, excepting such as are favored by catarrhal conditions of the mucous membranes of the upper air passages. The local symptoms are those due to mechanical obstruction by the growth; obstruction of the nose, difficulty in breathing, pain or difficulty in swallowing, hoarseness or dyspnea, either constant or upon exertion. When rhinoscleroma involves the nasopharynx in the vicinity of the Eustachian orifices, deafness, ear pains, or tinnitus may obtain.

PROGNOSIS.

The disease has been said to be incurable, though lately some have reported cases cured by the x ray. Whether or not they are permanent is not known. In this country Pollitzer reported a case treated by Röntgen rays, which was well after three years. Patients live for years without any untoward effects except such as are due to obstruction. In one of Dr. Emil Mayer's cases, in which there was extensive involvement of the trachea and larynx, the patient was kept comfortable and the lumen patent by frequently passing the bronchoscope.

DIAGNOSIS.

The diagnosis depends upon the presence, in a granuloma, of the Mikulicz cells containing Gram-negative diplobacilli in pure or in almost pure culture, in the depths of the lesion. The chronicity of the lesion, its appearance, and its bilateral character in the nose, together with the pathological findings are enough to establish a diagnosis.

Sarcoma and lues are most frequently confounded with it, and it may require repeated and careful examinations, as in Braun's case before a specimen will show the characteristic lesion.

THERAPY.

Drugs, internally, or locally as caustics, have proved ineffectual. Surgical intervention removes the growths, but does not prevent their recurrence. Vaccine therapy has been tried with very little success. In this country Thro used it for five months without any apparent effect upon the growths. Güntzer's two cases were not benefited by the injections and only improved after x ray treatment had been instituted. Radium has been used by von Schrötter, Kahler, Ferrari, Marschik, and Koffler, all of whom report cures. At present, the use of the

Roentgen ray yields the best results. A number of writers, beginning with Fittig, in 1903, have reported cures. Here, Pollitzer, in 1906, and Ballin, in 1907, were the first to use the x ray. Both of their cases were reported cured. Pollitzer's case was free from recurrences three years later.

More recently salversan has been tried, but without much success. Before entering upon this, the writer would present briefly the history of a case in which this was used, for the first time in this country.

Case. R. M., girl, aged nineteen years, born in Kieff, Russia; in the United States one year, came to the writer, July 23, 1913, complained of fullness in the nose and of difficulty in breathing through the nose. There was considerable mucopurulent discharge from both nostrils and a few soft crusts. There was no odor. On the right side over the lower turbinate and contiguous parts of the septum there were several small, firm, shiny, crinkly appearing, pale nodules. The left nostril was completely blocked by a mass of tissue of the same general appearance, which seemed to grow from the inner convex surface of the inferior turbinate, along its anterior third. This was removed and behind it there were several other smaller nodules, both on the turbinate and on the septum. This was the sole involvement.

Microscopically, the specimen consisted of granulation tissue rich in small round cells, and contained, in its deeper parts, Mikulicz cells and hyaline bodies. The tissue was quite avascular. The diplobacilli were found in stained sections of the growth and were obtained in pure culture from the cut surface of the specimen and from the blood flowing from the wounded surface. They were also present in the nasal discharge. They behaved culturally according to the classic picture described by Perkins and Thro.

The patient was given a dose of 0.45 c. c. neosalvarsan intravenously by Dr. A. B. Berk. After twenty-four hours she was discharged from the hospital. During four weeks of observation there was no change in the lesion and she was admitted to the hospital for a second injection. This time she received 0.3 c. c. salvarsan. There was no reaction after the salvarsan injection, and now after ten weeks the nodules appear to be growing steadily larger. It is quite evident that in this case salvarsan has had no effect.

Fein, in 1911, reported a case in a young soldier, a native of Galicia. The Wassermann reaction was negative and the diagnosis was established pathologically and bacteriologically without question. He had absolutely no result. Gerber had a case in a woman of twenty years, a native of East Prussia. She had infiltration of both sides of the nose, narrowing of the choanæ, and laryngeal stenosis; 0.3 c.c. salvarsan intragluteally was without effect upon the lesion.

Lieck also reported a case, in a female, twenty-one years of age, a Russian. She denied lues and had had, two years before he saw her, antispecific treatment for her nasal condition without having been benefited thereby. Her nose only was involved. There were masses on both sides and the choanæ were narrowed. There was an ozena odor. The larynx was normal and the Wassermann test was negative. The diagnosis was confirmed by pathological examination. She received two intravenous salvarsan injections, four weeks apart, without any effect upon the local process.

Hölscher reports a case as cured in a man, Russian, twenty-five years old, with involvement of the right lower turbinate, the larynx, and the trachea almost to the bifurcation. He denied syphilis and the Wassermann test was negative; 0.4 c.c. salvarsan was injected intravenously, and immediately there were favorable changes. After five weeks, the lesion had completely disappeared. There was no pathological examination made and the case was not gone into for other possible evidences of syphilis. In view of these facts one must hesitate to accept this as rhinoscleroma, and the writer is inclined to agree with Lieck in considering it as lues.

CONCLUSIONS.

1. One would say that at the present time the cause of the disease is as far from elucidation as it ever was, and that the Frisch bacillus is present as a secondary invasion.

2. Many more cases would undoubtedly be reported in American literature if the existence of this condition were kept in mind in the diagnostication of doubtful appearing nasal growths.

3. The best present therapeutic agents are the x ray and radium.

4. As for salvarsan, there have been too few cases reported to form the basis of an opinion, but it seems that it is not effectual.

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616 Madison Avenue.

Abstracts and Reviews.

SIGNIFICANCE OF THE THYMUS GLAND IN GRAVES'S DISEASE.*

By Professor William T. Halsted,
Johns Hopkins University, Baltimore.

Ever since the earliest observations on the actions and functions of the endocrin glands, the thymus has been the subject of much speculation, and it has not yet been accurately determined whether or not its occasional vestiges have any function in normal man. Meltzer, a few years ago, made the cautious statement that, although there was at that time no definite evidence to show that the gland was possessed of function, nevertheless it was not proved that such was not the case, and in view of the great activity of many of the secretions of the endocrin glands the thymus remnants might well have some function.

The careful studies of Eppinger and Hess on the vegetative nervous system led them to the conclu-

*Summary of a lecture delivered before the Harvey Society at the Academy of Medicine, New York, March 14, 1914.

sion that the two portions—the sympathetic in the more restricted sense of the word, and the autonomic in the continental meaning of the term—were subject to perversions which produced definite and opposite symptom complexes. Both perversions were in the nature of increased activity or increased susceptibility to stimulation. Such a condition involving the autonomic system was denoted *vagotony;* and when it involved the sympathetic, *sympatheticotony.* They noticed, further, that cases of Graves's disease often showed symptoms of one or the other of these two types.

Kocher had previously described what he believed to be a blood picture which was characteristic of most, if not of all cases of Graves's disease. This was marked chiefly by an abnormally high proportion of the mononuclear leucocytes, rising often to fifty or sixty per cent. of the white cells, and the frequent occurrence of two to four or five per cent. of eosinophiles. It was soon seen, in those cases of partial thyroidectomy which resulted in relief of most or all the subjective symptoms of the disease, that the mononucleosis was unchanged or only partially diminished. No explanation of this phenomenon was forthcoming at that time.

The next step in advance came with the report of the results obtained in a very severe case of Graves's disease which had not responded to ligation of the thyroid arteries, and in which there was demonstrable enlargement of the thymus. Owing to the failure of the earlier operations, removal of the thymus was undertaken and accomplished successfully. Almost immediately following this operation the symptoms of Graves's disease declined and disappeared. Not only was this true of the subjective symptoms, all of which had been peculiarly severe, but it was noticed that the Kocher blood picture rapidly regressed, the white cells resuming their normal proportions.

This observation gave impetus to further investigation of the relation of the thymus to Graves's disease, and an analysis of the autopsy findings in a large series of fatal cases showed the presence of *Thymus persistens* in no less than ninety-five per cent. These observations have been confirmed by a study of the post mortem records of Johns Hopkins Hospital, covering the past twenty-five years, during which time, of course, the relation of the thymus to the thyroid was unsuspected. We found, also, that the thymus was persistent in eighty-two per cent. of those who had Graves's disease, but who died of other causes. In spite of this great frequency of persistent thymus found post mortem, clinical methods are able to demonstrate its presence in not over forty per cent. of the cases of Graves's disease. It must be remembered, therefore, that even though x ray and percussion fail to give evidence of thymus tissue, this is no proof that the gland does not exist.

That the persistent thymus is capable of producing symptoms associated with Graves's disease is now a demonstrated fact. There have been three primary thymectomies reported, and in each there was disappearance of the preexisting Kocher blood picture, and alleviation of many of the subjective symptoms. Injection of extracts of persistent thymus into animals gives rise to the typical Kocher blood changes, as does thymus implantation. These are but the most important observations which establish this fact, many others serving merely to confirm these. It is generally believed by recent observers that the thymic enlargement and symptoms are only later developments in the course of Graves's disease, but in two of my cases the activity of this gland seemed to be almost the primary condition. The gland is also known to persist in certain cases of colloid goitre and, while in these there are none of the usual symptoms of Graves's disease, its presence may account for certain of the suggestive transitory symptoms which are known to occur.

Closer analysis of the cases which have been proved to be associated with a persistent thymus, shows that its presence is usually associated with the appearance of vagotonic symptoms, among which may be mentioned lagophthalmos, low blood pressure, vasomotor instability with blushing, bradycardia, irregular pulse of the respiratory type, gastric hyperacidity, diarrhea or spastic constipation, strong reaction to pilocarpine, no epinephrine glycosuria, and a decrease of the symptoms after the injection of atropine. These cases also show a strong tendency to excessive pigmentation. The thymus is altered both qualitatively and quantitatively and seems to exert a decidedly poisonous action on the heart. It is in these cases with persistent thymus that we encounter the not infrequent sudden deaths from failure of the heart, and these cases show a tendency to periods of cardiac and respiratory embarrassment and syncopal attacks.

It is worthy of mention in connection herewith that the persistent thymus seems also to have reciprocal relations with other of the endocrin glands. In cases of Addison's disease it is frequently persistent, and it bears a definite relation to the ovaries and testicles. It is probable that its relation with the ovaries is in some way accountable for part of the symptoms of Graves's disease which arise in certain women during menstruation, pregnancy, or the menopause. In a case of mine there were very extreme symptoms of Graves's disease in a woman at the time of her climacteric, all of which totally disappeared with the completion of the change in her physiologic processes.

General surgical experience in more or less extensive thyroidectomy is uniform in respect to the possible results and their limitations. It is agreed that all symptoms of Graves's disease may be alleviated or removed by this operation, with the sole exception of the Kocher blood picture. All are agreed that this is changed slightly or not at all. This is probably due to the fact that it is not customary to remove more than a limited amount of the thyroid. In my personal experience I have found that the Kocher blood picture is often greatly altered in the direction of normal, not infrequently returning to absolutely normal. It must be mentioned that it is my custom to remove very much more of the struma than is the general practice, and that this may account for my different results. The addition of thymectomy to partial strumectomy not only brings about a normal blood

picture, but also leads to marked general reduction in the other symptoms.

It is not yet known how large, or rather how small a portion of the thymus is capable of causing symptoms. In certain of my cases, however, it has been possible to remove only small masses of tissue from the thymus region, yet the results have been excellent. Microscopical examination of the tissue thus removed has always shown a great preponderance of fat with but very small amounts of thymus tissue. It seems from this that an extremely small amount of thymus tissue is capable of giving rise to symptoms of its presence.

From the point of view of research it would be desirable to restrict the primary treatment of Graves's disease to thymectomy. But from the humane aspect it is our duty to the patient to give the greatest possible measure of relief and chance for recovery with the least possible danger. On the strength of this and in view of the preceding observations our practice in the treatment of this disease is briefly as follows: In severe cases we perform successive ligation at suitable intervals of the four thyroid arteries. After this, or in milder cases at first, we remove one lobe of the thyroid. If this is not sufficient the other lobe is removed. In the removal of the thyroid it is our invariable practice to leave a layer of thyroid tissue posteriorly, partly to protect the parathyroids, and partly because we may be compelled subsequently to remove the greater portion of the remaining lobe. Of late, in addition to hemithyroidectomy, we have been removing as much of the thymus as possible. This is done at the same time as the thyroid operation. Our results have been extremely gratifying. There are, of course, three possibilities open to the surgeon; a primary thymectomy; thymectomy secondary to hemithyroidectomy, or thymectomy and hemithyroidectomy combined. The latter seems to be the operation of choice from the standpoint of giving the maximum benefit to the patient with the least disturbance.

Recently both animal experimentation and human observations have given rise to the belief that the use of radium or the x ray might lead to destruction of the persistent thymus tissue. The enlarged gland rapidly undergoes involution, and it is possible to produce effects analogous to those seen after its operative removal. This method is certainly worthy of further study and trial in the treatment of Graves's disease in man.

Therapeutic Notes.

Treatment of Dysmenorrhea.—S. W. Bandler, in the *Archives of Diagnosis* for January, 1914, points out that to assure a dysmenorrheic patient that the cervix, because of its length, rigidity, or stenosis, is the primary factor in the trouble is to tread on uncertain ground. To perform a surgical dilatation of the cervix and make it more or less permanent by the use of an intracervical stem or by a cutting operation, without first knowing that the cervix is the main offender, often leads to a disappointment. If one is able, on the other hand, painlessly and without danger of infection or tissue injury, to dilate the cervical canal two or three days before menstruation, or even when the pains have begun, and the patient is thereby relieved of the dysmenorrhea, any surgical procedure then thought necessary can be done with considerable certainty as to the result.

To dilate the cervix painlessly and safely, the author finds most advisable, in office practice, the use of the galvanic current. He employs aluminum sounds of various diameters, always smaller than the size which might be used if a little force were applied. A large plate is applied to the abdomen or under the sacral region, the negative pole being in the uterus, and a current of from five to ten milliampères is passed for five to fifteen minutes. The intracervical negative pole causes a relaxation of the muscular fibres, the sound thereupon slipping out. At the same sitting or the next, a somewhat larger electrode may be substituted, and this may be repeated as judgment dictates, the electrode being always drawn out as soon as the patient experiences pain or discomfort. The intracervical pole causes, especially if a white or yellow secretion is present, an oxidation of the secretions with resulting production of bubbles. If the electrode fits too closely in the cervix and there is no egress for this frothy product, an increase of pressure occurs in the uterine cavity and cervix, pain resulting. If one, two, or three treatments on successive days before menstruation lead to a painless menstrual flow, fairly satisfactory proof is afforded that the cervix plays an important part in the production of pain in the individual case. In many cases the author has, by the procedure described above, given relief from uterine colic.

Treatment of Scabies in Children.—Gaston, in *Paris médical* for August 30, 1913, is credited with the following combination, to be employed in washing the child in the evening:

℞ Saponis castiliensis, ...3ivss (17 grams);
Potassii sulphidi, ...3ii (8 grams);
Olei olivæ, ...3iss (6 grams);
Olei thymi, ...mxiii (0.8 gram).
Misce.

Potassium carbonate, 2.5 to five drams (10 to 20 grams), should be added to the bath. After the bath the skin may be rubbed with a mixture of dilute camphorated oil, styrax, and balsam of Peru.

On succeeding days, the following ointment should be rubbed in:

℞ Sulphuris præcipitati, ...gr. xv (1 gram);
Sodii boratis, ...3ss (2 grams);
Zinci oxidi, ...3iiss (10 grams);
Adipis lanæ hydrosi, } .....āā 3ss (15 grams).
Petrolati, }
M. et ft. unguentum.

A starch bath should also be administered daily.

Where, as is frequently the case, scabies results in the production of eczema or impetigo, these may be treated by the application of balsam of Peru in oil (5 to 10 per cent.), or by the following ointment:

℞ Sulphuris præcipitati, } .....āā 3vi (25 grams),
Glyceriti amyli, }
Olei cadini, ...mlxxx (5 grams);
Sodii carbonatis, ...3ss (2 grams).
M. et ft. unguentum.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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FURTHER SOCIALIZATION OF THE PROFESSION.

We do not laugh as much as heretofore over the developments of Chinese civilization. Among these is the well known practice of paying the family physician as long as the clients are well, and stopping payments while they are ill. While we have not quite reached that point, still we have progressed sufficiently to see the value of regular physical examination, especially after the age of forty years, not only to the individual patient's health, but to the coffers of insurance companies and other great business organizations. Perhaps the latter consideration came first, just as it is thought that much of the welfare work done for employees of the larger manufacturing companies was dictated as much by enlightened notions of economy as by feelings of charity. Whatever the cause, however, the result, as far as the general health is concerned, is likely to be excellent. The names behind the new Life Extension Institute are enough to guarantee that the ultimate resources of science and economics will be drawn upon for the benefit of subscribers, both companies and individuals. Physicians will be appointed to various centres, on salary or a commission basis. We advise those of our readers who are not familiar with the plans of this institute to send to Mr. James D. Lenehan, secretary, 25 West Forty-fifth Street, New York, for the interesting prospectus. We may say here that for three dollars per annum the institute promises an annual letter of advice based on answers to a question blank, together with two annual examinations of the urine; for five dollars, monthly letters on health, the same uranalysis, the initial letter of advice, and, in addition, a thorough physical examination. Special arrangements may be made for schools, clubs, societies, business organizations, etc.

Those who see in the foundation of the institute a long step toward socialism, we can only advise, as we have often advised before, to prepare early for longer steps. There is no possible doubt that this institute idea is going to prove immensely popular among the laity, once its principle is thoroughly grasped, and the effect on the practitioner's income and prospects is perfectly obvious. The perfect organization that will result from the work of these business experts must supersede the desultory methods of practice now in vogue. The regular physical examination and careful attention to the advice that follows, will become as much a matter of routine with the average citizen as his business and his recreation. The practitioner is going to have less emergency work to attend to, and he will soon find his clientele, duly forewarned, more cautious, sober, and therefore less remunerative. This institute plan is but a small part of a tremendous world movement, and whatever may be the wishes of the individual physician, whether he regrets or approves, nothing seems more certain than the eventual organization of the profession into a vast semimilitary corps of health officers, with powers and duties somewhat resembling those of the Public Health Service. The invincible repugnance of the average citizen to pay the doctor's bill, a rebellion which is undoubtedly based on the instinctive belief that society, being to blame for disease, ought to foot the bills, may some day be set at naught by governmental assumption of the doctor's pay, which will then be added to the taxes.

The names of the physicians attached to the prospectus of the Life Extension Institute are such as to command respect; most of them are familiar to our readers as teachers and writers of ability. The laymen are headed by the Honorable William Howard Taft and include Professor Irving Fisher, of Yale University, Elmer E. Rittenhouse, Samuel Hopkins Adams, Norman Hapgood, the Honorable Walter H. Page, President David Starr Jordan, and many other distinguished citizens. The institute, it is hoped, will be a self sustaining philanthropy, and two thirds of any profits above a small rate of interest will be applied to public use in life extension work.

OBESITY IN CHILDREN.

Advanced studies in the field of endocrinology, the science of the ductless glands, have made it evident that obesity in children can no longer be looked upon in all cases with confident equanimity. A relatively large proportion of these instances have been traced to some disorder of one or more ductless glands, the phenomena, which stand out with special boldness, pointing more or less clearly to the organ which is the seat of the fundamental lesion. The diagnosis of the particular form of obesity would be relatively simple did each diseased ductless gland awaken characteristic phenomena, but there appear as complicating factors—owing to our ignorance of the precise functions carried on by these organs—concomitant symptoms which seem sometimes to defeat any attempt to establish a clearly defined syndrome. The accumulation of clinical material and of experimental data is beginning, however, to elucidate this complex problem and to render possible at least an approximate diagnosis, not only of the various forms of obesity in children due to the ductless glands, but of the identity of the particular gland acting as main factor in the morbid process. This can be said with any degree of confidence, however, aside from the familiar form due to insufficiency of the thyroid, of only two organs, the pituitary and the adrenals.

In the field of the pituitary body, accidental destruction of that organ, as by a bullet (Madelung's case), and lesions of the pituitary in the course of infectious diseases, on the one hand, and experimental removal of the pituitary in a large number of animals, on the other, have given us a reasonably clear idea of the form of obesity due to inhibition of its functions in the young. Beside the obesity, there is sexual infantilism with absence or paucity of hair over the pubis, amenorrhea or dysmenorrhea, and, in some cases, mental disturbances or moral degradation, with, perhaps, epileptoid phenomena. The functional relationship of the pituitary with other glands is shown by the presence in a small proportion of cases of more or less clearly defined symptoms of hypothyroidism, a waxy condition of the skin, with intellectual torpor, and even nanism. The opposite condition, unusual growth, and even gigantism, may also occur; but this is due to an initial disorder of the pituitary involving temporary overactivity of the organ, and succeeded by the lesions to which hypopituitarism is due, the cause in turn of the obesity and other symptoms described above. Radiography in such cases may indicate a small sella turcica, but lesions of the pituitary proper may not entail changes of its bony support, thus reducing radiography to the rank only of confirmatory evidence.

About the only disorder with which this condition may be confounded is a form of obesity due to the adrenals, when these organs are the seat of malignant hypernephroma. The obesity of this disease, which occurs as a rule in girls between the first and eighth year, is sooner or later accompanied by phenomena which distinguish it clearly from pituitary obesity. The child develops with unusual rapidity, the face, genitalia and pubis, and sometimes the whole body, are covered with an abundant growth of hair, and the genitalia develop so rapidly that these structures in a child of eight years may resemble those of an adult. The voice is usually harsh and deep, the skin swarthy, while the disposition becomes altered, the child being sullen and moody. Excessive thirst and appetite are common. The abnormal growth may suggest gigantism due to pituitary disease, but the other phenomena render error almost impossible.

A WARNING TO ANESTHETISTS.

Dr. James T. Gwathmey sounds, in another column, a note of warning to anesthetists who may wish to use the oil-ether colonic method of anesthesia devised by himself and described in the New York Medical Journal for December 6, 1913. He points out that the technic is so simple that there is danger that its very simplicity may lead inexperienced practitioners to use this method without adopting the precautions which must be observed in order to make this or any other method of general anesthesia a safe one. While the results so far reported to Doctor Gwathmey have, on the whole, been most encouraging, there have been some cases in which untoward results have been observed, and it is to prevent these that he sets forth the technic of the administration and points out in detail the necessary precautions.

QUACK LEGISLATION.

The epidemic of legal hysterics grows every year more ferocious. Laws are coming and going with a rapidity and caprice so confusing that the ordinary citizen must have given up any attempt to follow their symptoms. It is therefore only lucid to explain in advance that the monomania we allude to has started in the Legislature a series of bills commonly called the "naturopath," "osteopath," and "chiropractic" bills. They tend, in spite of a specious fairness, to colossal disintegration of the medical profession. It is said that they preach a doctrine of quackery, and their aim is to show the charlatan how to get on. Possibly the whole thing is political, a fiction of party politics in which the authors seem uncertain in their gait. At all events the spirit of the bills is distinctly hostile to the respect-

able physician; it not only preaches, it practises the doctrine of quackery. True medicine has lost, and has lost through the lowest excesses of the politician's mania. If stupidity and ignorance were not rampant there would be less outcry against offenses in drug sales, and less tenderness in cherishing and protecting murderers and vicious characters.

The bills are not wholly practical as such titles suggest. The mental effervescence caused by an abnormally nervous fear of drugs and animal experiments runs into ideals of gross tyranny. There may be some indications of a revival of common sense, but it is quite likely that the sickly offspring of a modern oligarchy will invade the rights of the individual and the healthy scions of a traditional liberty. The amendment to the Frawley bill means among other things the danger of unintelligent money. When a rich woman of fashion devotes some considerable energy to producing an attack on the evils of drugs, we may fairly assume that there is a growing dissatisfaction with the monumental banality of our laws. The amendment, in fact, is a sort of anticlimax. The punishment, a combination of violence and weakness, does not fit the crime. Violence defeats its own purposes, and the law will probably not be enforced. The result will be a triumph of illicit indulgence in social life. The tide of criminality will rise higher, while the physician is thwarted in his duty to the poor, the unfortunate, and the sick.

HEREDITY AND ENVIRONMENT.

In these days great prominence is ascribed to heredity as a factor in the production of the genus homo, his physical and mental attributes. The too enthusiastic eugenists seem to hold that the salvation or regeneration of the civilized human race lies wholly in breeding from good stock. Hence, have arisen somewhat utopian schemes for so regulating marriage that only those who are physically and mentally fit shall be allowed to propagate the species, that is under the law. While there is little doubt that the wholesale reproduction of the unfit, as it is going on in some countries at the present time, must in the end result in the national decadence of those countries, so radical a remedy as that referred to is not likely, at all events at present, to pass into law. Nor is it by any means certain that were it to become law it would bring about the results anticipated. In the first place, it may be urged that physical excellence is not the only quality to be desired in man or woman and it may be pointed out that many of the greatest personages in history have not been normal in mind or body. A dead level of sane and talented mediocrity, even if it were possible to accomplish it by judicious selection, would not be an unqualified success. At the same time, since Nature's law of the survival of the fittest has, by our humane instincts, been almost completely overturned, it seems that steps should be taken to prevent the obviously unfit from propagating their kind. It must be borne in mind that degenerates are more prolific than intellectuals; they are irresponsible, economic facts have no influence on them, and they produce another generation as bad as or worse than themselves. That like breeds like is to a very great extent absolutely true; consequently, the feeble minded and possibly those suffering from gross diseases, as syphilis and tuberculosis, should be prevented by law from reproduction.

There is another branch of the science for improving the race which is to the fore at the present time—that of euthenics. The ardent euthenists assert that environment has as much to do with degeneracy as breeding—if not more. On the face of it, they have quite as strong a case as the eugenists. Civilization, industrial civilization in particular, has been responsible for more degeneracy than any other one cause. It is in those countries where industrialism has held sway longest that degeneracy is most marked and prevalent. Environment was the first cause of degeneracy and throughout in its production has been as potent a factor as bad breeding so called. In the campaign against degeneracy, and in the laudable efforts being made in this country and in other parts of the civilized world to improve the race, the first measures must be to supply better environment. So long as people in manufacturing centres are massed together in small, unhealthy dwellings or are allowed to work in badly ventilated, unsanitary factories or stores, just so long will degeneracy flourish. Improved environment will not mean the end of degeneracy, but it will be a long step in the right direction. There need be no conflict, however, between eugenists and euthenists; their aims are identical, and there is every reason why they should work together in harmony to the benefit of the race. The only difference appears to be that while the course of the euthenists is clear, that is, to improve environment, the path of the eugenists is not; still they will learn by experience and profit by their mistakes. In all countries there is ample room for working out the theories of both eugenists and euthenists.

A WARNING TO USERS OF TURPENTINE.

As the result of an investigation by the United State Department of Agriculture it has been found that the adulteration of turpentine with mineral oils is so widespread that druggists and manufacturers of pharmaceutical products used for medi-

cinal and veterinary purposes should exercise special caution in purchasing turpentine. Those who use turpentine for these purposes run the risk of obtaining an adulterated article and of unnecessarily laying themselves open to prosecution under the Food and Drugs Act. It has been found, moreover, that the turpentine is often short in volume by as much as five or ten per cent. The department has also found that turpentine may be adulterated in the South where it is made, and that the further it gets from the South the more extensively and heavily it is adulterated.

AN INSTANCE OF SOCIAL ALTRUISM.

At the request of the Mayor's Bureau of Licenses, hereafter all applicants for licenses to peddle from push carts in New York will be examined at the tuberculosis clinics of the department of health, according to the *Bulletin* for March 28th. No applicant whose sputum contains tubercle bacilli will be recommended for a license. While all applicants will be examined, irrespective of their physical condition, it is the intention to recommend for such licenses those who by reason of illness would be benefited by open air employment. Tuberculous persons in fair physical condition, and with sputum free from bacilli, and others whose physical condition requires open air employment, will therefore have preference.

News Items.

Members of the Alpha Kappa Kappa Fraternity in New York and vicinity are requested to send their names to Dr. H. Sheridan Baketel, 81 Fulton Street, New York.

Occupational Tuberculosis.—The United States Public Health Service has undertaken a thorough investigation of the influence of certain industries on tuberculosis. The work is to be carried on in Cincinnati in cooperation with the Ohio Board of Health and the Health Department of Cincinnati.

Sanitation and Wall Paper.—A bill has been introduced into the Legislature of the State of New York by Senator Wende, of Buffalo, making it a misdemeanor to repaper or recalcimine the wall or ceiling of any building or room used for tenements or working purposes in cities of 10,000 population or more until all the old paper or calcimine has been removed.

New Building for the Beth Israel Hospital.—Plans have been prepared for the construction of a new building for the Beth Israel Hospital, on a site near the present hospital at Jefferson and Cherry Streets, New York. The new building will be fourteen stories in height, will have about five hundred beds, and will cost approximately $1,000,000. Nearly $300,000 has already been contributed to the fund.

The Society of Sanitary and Moral Prophylaxis will hold its last meeting for the current year at the New York Academy of Medicine on April 9th. This is also the annual meeting. The program is one of great interest to all members of the medical profession, as it deals with the suppression of the venereal quack. Mr. Samuel Hopkins Adams will read a paper on What the Quacks Are Doing: Mr. Almuth C. Vandiver, counsel of the Medical Society of the County of New York, will speak on What Can Be Accomplished Under the Present Laws. State and local organizations will be represented in the discussion. It is hoped that there will be a large attendance of the members and the public. Dr. Edward L. Keyes is president of the society.

Canadians Seek Radium.—The Canadian premier has announced that the Canadian Government contemplates offering a bonus for the discovery of radium bearing ore in any part of Canada. Several of the Provincial governments propose taking a similar attitude.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Wednesday, April 1st, Physicians' Motor Club directors, and the College of Physicians; Thursday, April 2d, Obstetrical Society; Friday, April 3d, Kensington and Southeast Branches of the County Society.

The Amended Frawley Bill.—A bill has been introduced into the New York Senate Legislature, senate bill No. 1246, imposing severe restrictions on the handling and sale of narcotic drugs and poisons. This bill was drafted by a committee appointed by Mrs. William K. Vanderbilt. It was opposed by both the wholesale and the retail drug trade at a hearing held on March 11th.

Rush Society Lectures.—The eighth lecture in the series for 1914 will be given on Wednesday afternoon, April 1st, at 3:30 o'clock, by Dr. Alexis Carrel, of the Rockefeller Institute for Medical Research, on Permanent Active Life of Tissues Outside of the Organism. This lecture is also the annual address before the Undergraduate Medical Society of the University of Pennsylvania.

Hygiene for Painters.—A bulletin has been issued by the Bureau of Labor Statistics of the United States Department of Labor regarding the hygiene of the painter's trade. The bulletin is prepared by Alice Hamilton and a bill is pending in Congress providing for the printing of 16,000 copies or more for general distribution. If this bill passes copies may be obtained by addressing the Department of Labor or the Superintendent of Public Documents, Washington.

Following Up Patients Discharged from Contagious Disease Hospitals.—A study has recently been made to determine how effective were the precautions taken to prevent the carriage of contagious diseases into homes through patients discharged from the contagious disease hospitals of the Department of Health. Eighty-eight cases were discharged from the Kingston Avenue Hospital during the month of January and in only one instance was a contagious disease carried in this way. This was in a girl five years of age in whom scarlet fever developed two days after the return of her sister from the hospital. It is planned to continue these studies and apply the experience gained to perfecting, as far as possible, the administration of the contagious disease hospital.

Chi Zeta Chi.—The affairs of this medical order for the help of undergraduates in the best of our medical schools are flourishing. The membership, including alumni, now numbers upward of fifteen hundred, of whom more than a hundred are in New York city. The number of chapters now is only three short of using all the letters of the Greek alphabet. At the annual meeting, held March 5th at the residence of Leo Petersen, the following officers were elected for the ensuing year: President, Dr. Robert H. W. Dawbarn; first vice-president, Dr. Evan Evans; second vice-president, Dr. J. E. Donelly; secretary and treasurer, Dr. C. B. Fluker. The next meeting will be held at the residence of Doctor Dawbarn at 8:30 o'clock on the first Thursday evening of April. There will be an interesting scientific program followed by refreshments. All members are cordially invited.

Mortality Statistics of New York.—During the week ending March 21, 1914, there were reported to the Department of Health of the City of New York 1,757 deaths from all causes, with a death rate of 16.42 in a thousand of population, compared with a total of 1,685 deaths and a death rate of 16.36 for the corresponding week in 1913. The increase in the mortality is undoubtedly due to an increased prevalence of influenza, accompanied by an increase in the diseases of the respiratory organs. The number of deaths from influenza itself rose from 12 to 24, while the deaths from acute bronchitis were increased to the extent of 8, lobar pneumonia 23, bronchopneumonia 12. Pulmonary tuberculosis showed an increase of 14 deaths, and diphtheria and croup an increase of 20 deaths. Violent deaths increased from 76 to 100, due entirely to an increase in the deaths from accidental causes. The causes showing a decreased mortality were measles, scarlet fever, whooping cough, typhoid fever, organic heart and kidney diseases.

United States Public Health Service.—Senate bill No. 2616 provides for changes in the salaries of the officers in the Public Health Service, also that the health service may perform certain duties in relation to the sanitation on railroads and elsewhere throughout the United States. The bill has been favorably reported by the tax committee on public health, has been passed by the House of Representatives, and has received the endorsement of the Secretary of the Treasury Department.

Public Meetings on Cancer.—The American Society for the Control of Cancer has arranged for three public meetings to be held in New York in the near future. At these meetings speakers of national prominence will lay stress on the hope of cure which lies in early recognition and proper treatment. The first of these meetings was held at the Women's Cosmopolitan Club on Monday, March 23d. Dr. James Ewing, professor of pathology of Cornell University Medical School, discussed the value of radium, and Frederick L. Hoffmann, LL. D., the well known statistician, showed how cancer is now one of the chief causes of death.

The second meeting will be held at the Academy of Medicine, April 10th, at 8:30 p. m., during the Congress of the American Surgical Association. Dr. William J. Mayo, of Rochester, Minn., president of the American Surgical Association, Mr. Frederick L. Hoffmann, Dr. Francis Carter Wood, director of the George Crocker Research Laboratory, and Dr. J. Collins Warren, of Boston, professor emeritus of Harvard University, and president of the Harvard Cancer Commission, will discuss the subject. The third meeting will be held on Saturday morning, April 11th, at 11 a. m., at the Hudson Theatre. Dr. Frederick L. Hoffmann will speak on The Menace and Control of Cancer. Cards of admission to this lecture may be obtained on application to the American Society for the Control of Cancer, 289 Fourth Avenue, or at the office of the League for Political Education, 23 West 44th Street, New York.

Personal.—Dr. Cary Eggleston, of New York, has accepted an invitation from Dartmouth Medical School to deliver a course of lectures and demonstrations on systematic pharmacology during the two weeks beginning April 16th.

Dr. T. Mitchell Prudden, of New York, has been appointed by Governor Glynn a member of the New York State Public Health Council.

Dr. Haven Emerson, of New York, has been appointed sanitary superintendent of the Department of Health of the City of New York. The position has been vacant since last October, when Dr. Walter Bensel retired on half pay.

Lieutenant Colonel Charles F. Mason, Medical Corps of the United States Army, has been appointed chief health officer of the Canal Zone, and Lieutenant Colonel George D. Deshon, Medical Corps of the United States Army, superintendent of Ancon Hospital.

Dr. Philip Adolph Kober has resigned as research chemist in the Harriman Research Laboratory of the Roosevelt Hospital, New York, his resignation to take effect in September.

Professor C. E. A. Winslow, of the American Museum of Natural History, has been appointed advisory expert on public health education by the New York State Commission of Health.

The Fothergillian gold medal of the Medical Society of London for 1914 has been awarded to Dr. J. George Adami, of Montreal, professor of pathology in McGill University, for his work on Pathology and Its Application to Practical Medicine and Surgery.

The name of T. Leavy affixed to the essay on the Treatment of Chronic Constipation, which appeared in our issue for March 21, 1914, page 589, should read Dr. I. M. Leavy, of New York.

Dr. J. W. Babcock's resignation as superintendent of the State Hospital for the Insane at Columbia, S. C., has been accepted by Governor Blease, and Dr. T. J. Strait, of Lancaster, has been appointed to fill the vacancy. It is reported that Dr. Eleanora B. Saunders, assistant physician in charge of the white female patients at the State hospital, will also leave the institution.

Dr. William H. Walsh, medical superintendent of the Philadelphia Hospital for Contagious Diseases, has been chosen by Mayor Blankenburg to succeed Dr. Henry Sykes, who died on Thursday, March 19th, as chief resident physician of the Philadelphia General Hospital.

The Cutter Lectures on Preventive Medicine.—These lectures will be given at the Harvard Medical School by Dr. Charles V. Chapin, superintendent of health, Providence, R. I., and Dr. Cressy L. Wilbur, chief statistician, Bureau of Census. Doctor Chapin will give six lectures on municipal sanitation, as follows: March 20th, Science and Sanitation; March 27th, Efficiency of Public Health Measures; April 2d, Organization of the Health Department; April 9th, Research and Publicity; April 16th, Nuisance Problems; April 30th, Contagious Disease Problems. Doctor Wilbur's subject will be Vital Statistics in Massachusetts and the United States, and the dates are March 25th and 26th. All the lectures will be given at the Harvard Medical School, Amphitheatre Building A, at 5 p. m., and are open to the members of all classes in the medical school, the medical profession, the press, and the public.

Colonel Gorgas Honored in London.—The medical profession of London gave a dinner on Monday evening, March 23d, to Brigadier General William C. Gorgas, surgeon general of the United States Army, as a tribute to the splendid work done by him as chief of the sanitation commission at Panama. Viscount Bryce, former ambassador to the United States, presided, and among those present were Sir Rickman Godlee, president of the Royal College of Surgeons; Sir Francis H. Champneys, president of the Royal College of Medicine; Sir Thomas Barlow, president of the Royal College of Physicians; Sir David Ferrier, president of the Medical Society; Sir Havelock Charles, president of the Society of Tropical Medicine and Hygiene; Sir William Osler, regius professor of medicine at Oxford; Sir Clifford Allbutt, regius professor of medicine at Cambridge; Surgeon General Arthur W. May, medical director general Royal Navy; Sir William Launcelotte Gubbins, director general Army Medical Service; the Archbishop of Canterbury, Lord Haldane, the American Ambassador, Walter H. Page, and the American Consul General, John L. Griffiths.

Sir Havelock Charles paid a glowing tribute to General Gorgas, who responded in a characteristically modest speech.

On Tuesday, March 24th, General Gorgas visited Oxford University in company with Sir William Osler, where the degree of doctor of science was conferred upon him.

International Surgical Association.—The fourth congress of this association will be held in New York, April 13th to 16th, with headquarters at the Hotel Astor. This is the first time the association has met outside of Brussels, Belgium, where it was organized in 1905, the meetings being held every three years. The membership of the association is limited to a certain number from each country. The membership in the United States is about 100. The president of the fourth congress is Professor Depage, of Brussels, Professor Willems, of Ghent, is president of the International Committee, and Dr. L. Mayer, of Brussels, is the general secretary. The local secretary is Dr. J. P. Hoguet, 40 East Forty-first Street, New York, and the American Committee is composed of Dr. Roswell Park (deceased), of Buffalo; Dr. L. L. McArthur, of Chicago; Dr. C. L. Gibson, of New York, and Dr. R. H. Harte, of Philadelphia. These last three, with the addition of Dr. Rudolf Matas, of New Orleans, and Dr. R. G. LeConte, of Philadelphia, constitute the committee designated to represent the American Surgical Association in making preparations for the entertainment of the foreign members.

The program is limited to the consideration of three main topics: 1. Gastric and Duodenal Ulcers. Introduced by papers by De Quervain, of Basle; Hartmann, of Paris; Lecène, of Paris; Mayo, of Rochester, Minn.; Moynihan, of Leeds, and Payr, of Königsberg. 2. Grafts and Transplantations. Introduced by papers by Morestin, of Paris; Villard, of Lyons; Ulmann, of Vienna; Lexer, of Jena, and Carrel, of New York. 3. Amputations. Introduced by papers by Witzel, of Düsseldorf; Ceci, of Pisa; Kuzmik, of Budapest; Binnie, of Kansas City; Durand, of Lyons, and Ranzi, of Vienna.

After the close of the congress, Thursday, April 16th, most of the foreign members will make a tour of other cities, the itinerary including Philadelphia, Baltimore, Washington, Chicago, Rochester, Minn., Montreal, and Boston. The foreign members have been invited also to attend the session of the American Surgical Association held in New York at the Hotel Astor April 9th, 10th, and 11th, and many have signified their intention of arriving on the *Imperator*, due April 9th.

Pith of Progressive Literature.

WIENER KLINISCHE WOCHENSCHRIFT.

January 1, 1914.

Duodenal Ulcer.—E. Schutz has become a follower of Moynihan's teachings with regard to duodenal ulcer. In the last two years he has observed 137 cases of alleged duodenal ulcer. Of these cases nineteen were operated in, and in seventeen the diagnosis was confirmed. Ewald's contention that differentiation of duodenal from gastric ulcer is only of classical interest, is not true. The symptoms are different, internal therapy is so distinct in the two diseases that differential diagnosis becomes a very important matter.

Typhoid Bacilli in the Duodenal Contents.—B. Purjesz has been able to isolate the bacillus typhosus eight times in fifteen cases of positive typhoid. He removed the duodenal contents by means of the Einhorn tube in convalescents without fever. He maintains that introduction of the Einhorn tubes is better recommended than the oil method of Boldyreff and that it is much more easily carried out.

Influence of Pregnancy on Malignancy.—Erwin von Graff has studied the effect of pregnancy on transplantable rat sarcoma. In the majority of cases tumors did not grow as rapidly in pregnant as in nonpregnant animals.

Isolated Perforated Injury of the Pancreas.—Peter R. von Walzel reports a case of an isolated perforative wound of the pancreas which was cured by suture with drainage. In his case, as well as in those cited in the literature, gastroptosis was present.

January 8, 1914.

Acids and Nervous Excitability. H. Elias points out that acidosis with an increased excitability of the nervous system has occasionally been observed in nutritional disturbances of infants or in tetany of adults. He contends that both are needed processes. In animal experiments the author has succeeded in producing an increased excitability of the nervous system which was demonstrable electrically and mechanically. This always followed the intravenous and oral application of lactic and hydrochloric acids as well as acid sodium phosphates. Where the intoxication was severe spontaneous convulsions would occur.

Conservative Operation for Intermittent Hydronephrosis.—Kroiss operated on a boy aged twelve years suffering from intermittent hydronephrosis. The operation consisted of ureteropyeloneostomy and was successful. The author maintains that successful operation requires that the orifice be sufficiently large and made to lie at the lowest point of the pelvis. It is also important that the kidney be fixed in a suitable position.

Surgical Experiences in the Balkan War in 1912-1913.—Von Massari and G. Kronenfels report their extensive experiences gained during the recent Balkan war. They maintain, with others, that one cannot be too conservative when practising war surgery. The condition of the injured changes quickly often in a remarkable fashion, so that urgent indications of one day may prove fallacious on the next. Of eighteen cases infected with tetanus, all of which were treated with tetanus antitoxin, only three terminated favorably.

Heteroplastic Operation on the Skull with Celluloid.—Leopold Ruppert reports a case of plastic operation on the skull where celluloid plate was employed to cover the deficiency. The patient operated on twenty years previously has had no inconvenience whatever since.

Inhalation of Tincture of Strophanthus in Cardiac Insufficiency.—J. Moczulski has found the inhalation therapy recommended by Hering of decided value. Occasionally one inhalation is followed by decided relief. This method of application is to be preferred to other methods, since it is possible to observe an effect with much smaller doses, even as little as ten drops occasionally proving efficacious. The blood pressure is remarkably influenced, the diastolic pressure being decidedly reduced.

January 15, 1914.

Bassini Operation.—Waldemar Goldschmidt and Hanz Philipowicz have made an extensive study of the Bassini operation in cases at Von Eiselsberg's clinic between 1901 and 1911. Of 1,518 cases operated in twelve ended fatally, of which number six were incarcerated hernias. Of cases operated in with other methods, the mortality and relapses were far in excess of this number. The authors insist that this operation is at present the most serviceable, but should not be used indiscriminately. Relapses when they do occur take place in the early weeks following operation. The wearing of a truss is therefore of no preventive value. When the musculature is weak a plastic operation according to Brenner, Streissler, or Lameris is indicated.

Atropine Treatment of Dysmenorrhea.—L. Stolper reports his results with atropine in over eighty cases of dysmenorrhea. In a number in which vagus tonicity played an important part, atropine was of very decided value. In these cases it was important to determine the blood pressure, since in the presence of a decided blood pressure atropine was not efficacious. Where the blood pressure is increased, it is necessary first to treat this condition. Atropine is best administered in suppository form containing 0.001 gram or subcutaneously in doses of 0.00075 gram.

Left Lateral Scoliosis in Children.—Guido Engelman has found that the majority of school children suffer from a simple scoliosis. Of these 70.3 per cent. have a convexity toward the left. According to E. Muller 68 per cent. of all scolioses show a curvature to the left. These are due to the peculiar position in which children are carried in infancy, their heads resting in the left elbow of the mother.

Malaria with Unusually Severe Symptoms.—Witold Ettinger reports three cases of malaria in which the cerebral symptoms as well as skin manifestations were so prominent that diagnosis of malaria was made only after repeated examination of the blood had determined the presence of parasites. In two cases severe headache and an urticarial eruption of the skin were the chief symptoms, while in the third case intense headache was followed by

jaundice, which cleared up only after the administration of methylene blue. In the third case, the resistance of the blood cells was found normal to hemolytic tests.

Perichondritis of the Larynx.—Victor Fruhwals cites two cases of perichondritis of the thyroid cartilage manifesting itself as an exolaryngeal and endolaryngeal swelling. Both cases were secondary to tuberculous ulceration of the larynx and were treated by incision and drainage. In one of the cases cited extensive tubercular granulations of the wound were treated with radium with moderate relief.

January 22, 1914.

Medication Combined with Radium Therapy.—Shramik has attempted to take advantage of the fact that radiation with radium produced nascent iodine in tissues after the administration of sodium or potassium iodide by mouth. This method previously could only be taken advantage of where there had been a solution of continuity of the skin. In the treatment of lupus, radium was applied one and a quarter hour after the administration of two to three tablespoonfuls of a solution of sodium or potassium iodide. The alpha and beta rays were filtered off by means of a silver filter of 0.07 mm. This treatment was followed by marked reaction with destruction and slowing off of infiltrated areas.

Influence of Drugs on the Gall Passages.—Felix Rech has found that administration of morphine in animals increases the velocity of the bile in the gall passages. Adrenaline, Zuelzer's hormonal, caffeine citrate, large doses of atropine and beta iminazolylethylamin had the same effect. Papaverine in addition to increasing the flow also has a decided effect on lowering the blood pressure. Amyl nitrite did not have such a marked effect. Pilocarpine was found directly antagonistic to the action of papaverine.

January 29, 1914.

Basedow's Disease as a Contraindication to Gynecological X Ray Therapy.—Erwin von Graff points out that in the x ray treatment of gynecological conditions, it is essential to watch for affections of the internal secretory glands. In Basedow's disease no therapy that may influence the ovaries should be undertaken. Excessive doses are decidedly injurious.

Chemotherapy of Tuberculosis.—Hans Pohl discusses the value of different chemotherapeutic substances in the treatment of tuberculosis. In a number of cases with a complicating syphilis, as well as in some free from complications, salvarsan in ascending doses seemed to improve the condition markedly. A cure of the complicating syphilis, according to the author, seems to exert a marked improvement in the tuberculosis. He has also used a combination of copper recommended by Countess von Linden, but could not confirm the good results obtained by her and Finkler.

Pathogenesis of Nephritic Edema.—Leo Pollak on the ground of experimental evidence observes that a metabolic exchange between the blood and the lymph spaces of the peritoneal cavity shows a marked variation from the normal in animals suffering from uranium nephritis with edema. Permeability of the bloodvessel wall seems to be decreased, since salts injected intravenously require a longer time to be excreted into the exudative fluid. Other variations consist in the increase of sugar and sodium chloride in the exudate compared with that found in the blood.

FOLIA UROLOGICA.

December, 1913.

Cured Kidney Tuberculosis.—R. Alessandri describes a very interesting case in which partial resection of the bladder and the left ureter was made because of a probably tuberculous lesion, although no tubercle bacilli could be found. Examination of the removed portion of the ureter bladder showed tuberculous tissue, a piece of which was injected into a guineapig. The pig died forty days later of general tuberculosis. After the operation the patient had no more pyuria and enjoyed good health for five years. When she came back to the clinic five years after the first operation she had a normal bladder and normal urine from both kidneys. Because of pain the left kidney was exposed and removed. A walled off caseous focus was found in the lower part. The upper two thirds of the kidney and pelvis and the ureter were normal.

PARIS MÉDICAL.

February 21, 1914.

Direct Treatment of Affections of Lower Respiratory Tract.—G. Rosenthal advocates intratracheal injections of twenty c. c. of a ten or twenty per cent. dilution of gomenol (essential oil of Melalenca viridiflora) in cases of tracheobronchitis. In pulmonary tuberculosis the same measure is useful to overcome secondary infection and prevent extension to the larynx. In cases of brochopulmonary infection, with fetor, he advises "tracheofistulization," consisting in the introduction of a special, very slender tracheotomy tube, which interferes in no way with respiration or coughing, but permits of ready introduction of gomenolated oil, serums, gold tricvanide solution, or other therapeutic agents. For treating lesions cut off from bronchial access, a long hollow needle with numerous small perforations near the tip, and also provided with a pointed obturator, can be thrust directly through the chest wall into the involved tissue, and antiseptics injected through it. Where actual abscess formation exists, surgical intervention is indicated, respiration being maintained by the Meltzer-Auer method.

Functional Diagnosis of Chronic Toxic Joint Disorders.—C. Finck, as a result of studies of the urine in chronic "rheumatic" cases, recognizes a form of rheumatism of purely uric origin, in which the elimination of uric acid after a meal rich in purins is delayed, compared to the normal; a urooxalic type of rheumatism, in which there is a tendency to both uricemia and oxalemia, and a calcic form of rheumatism, characterized either by abnormal calcium retention or excessive calcium loss. In the former type of calcic rheumatism the administration of food or waters containing notable amounts of lime causes a pronounced exacerbation in the joint symptoms. Study of the urine and

feces gives the key to proper treatment in these various forms of rheumatism.

PRESSE MÉDICALE.

February 21, 1914.

Chalarosis: A New Mycotic Infection.—H. Roger, A. Sartory, and P. J. Ménard report the case of a woman who, while suffering from a tonsillar abscess, had joint pains, especially marked at the ankles, knees, and shoulders. When these pains were beginning to subside, hard, painless nodules appeared under the skin of the lower limbs. Further enlargement of these followed, with pain, tenderness, and redness of the overlying skin. One of the nodules finally broke through the skin, a sinus forming, with continuous discharge of yellowish fluid. The patient's general condition was excellent at the time, and there was no fever. Diffuse tumefaction, with marked tenderness, of the proximal phalanx of the ring finger of the right hand was also observed. Potassium iodide in the dose of four grains daily was given, with the result that the lesions entirely disappeared in less than a month. In a second case, closely similar to the first, inoculation of Sabouraud's maltose-agar and maltose-bouillon media with the pus yielded smooth, shining, roseate colonies of a new fungus which the authors found to belong to the genus chalara, and which they propose to designate as Chalara pyogenes. Intravenous and intraperitoneal injections of the organism in animals caused but little disturbance; subcutaneous injections caused the formation of nodules, sometimes containing thick, yellow pus.

Gonococcic Vaccine in Chronic Gonorrheal Arthritis.—V. P. Semionov asserts that fever in these cases does not contraindicate the use of a polyvalent Wright vaccine. Pain is relieved and, after continued treatment, the temperature lowered to normal. Occasionally the urethral discharge is increased; diarrhea may also be a result. Opsonic control is unnecessary, provided the clinical course of the disease is carefully followed. To obtain a cure, eight to twenty injections of vaccine, given at first at four to six day intervals and in small doses (20 to 80 million bacteria), and later every six or seven days and in larger doses (80 to 200 million) are required. The gonococcus rarely disappears, however, from the discharges of the genital organs.

Obstetrical Correcting Forceps.—Hantcher points out that no type of forceps so far devised has been perfect as regards prehension of the head in its various possible positions, and likewise, as regards prehension of the breech. He describes a new forceps intended not only to afford a satisfactory hold on the presenting part, whatever its position, but also to permit changing the position of this part in such manner as will best favor delivery. Each blade terminates in a movable, oval, flattened, metallic ring, with a single crossbar, at the centre of which is a pinion, connecting the ring with the blade proper, upon which it is thus enabled to rotate. Other rings, of a more circular form, are substituted for the oval ones in breech cases. Thick silk cords, attached to the distal portions of the rings, and passing through pulleys on the inner aspects of the blades proper, permit of rotating the rings in either direction, after the instrument has been introduced, thus increasing or decreasing at will the flexion of the fetal head. A scale shows the exact amount of rotation produced. An especially firm grasp on the presenting part can be secured by spreading apart the proximal ends of the blades, which can be fixed in any desired position by a special pressure device. The tractile parts of the forceps being largely independent of the prehensile parts, the fetal head preserves its mobility during extraction, as during the use of Tarnier's axis traction forceps. In face presentations the forceps are introduced with the long axes of the oval rings in line with the blades proper; the rings are then rotated so as to correspond to the mentooccipital diameter, pressure applied to secure firm prehension, and the rings then again turned in order to bring the vertex down. The special rings for breech presentations are so formed as to secure a firm hold.

February 25, 1914.

Improved Needle for Intravenous Injections.—R. Bayeux's device consists of a hollow needle provided with two flat wings intended to rest firmly on the skin, with an obturator which can be pushed directly down the lumen with the thumb, and a side opening through which blood can be drawn off or intravenous injections of fluids or oxygen gas made. A syringe can be firmly fixed in the side opening and held in the fingers like a pen; good control of the needle during its introduction into the vein is thus afforded.

REVUE DE MÉDICINE.

February 10, 1914.

New Internal Secretions.—R. Lépine maintains that the venous blood from an organ does not always contain its internal secretion. Thus, various observers have failed to detect glycolytic power in the blood from the pancreatic vein. On the other hand, the lymph from the thoracic duct possesses a marked activity in this respect, and Biedl has shown that the outpouring of lymph into the blood is absolutely essential if glycolysis is to take place. The study of internal secretions discharged into the lymphatics is at present difficult for technical reasons, but such study is of great importance. Lépine also asserts that certain ferments, derived from surrounding tissues, exist in the vascular walls, and that these ferments, in the presence of diminished sugar content of the blood, are promptly discharged into the blood from the vascular endothelium and set free additional sugar. The small vessels are thus capable, on occasion, of supplying increased energy, not only by dilating, but by adding ferments to the blood.

Induced Aminoaciduria in the Diagnosis of Hepatic Insufficiency.—M. Labbé and H. Bith place the patient under examination on a diet of milk and vegetables for three days, ascertain the aminonitrogen and total nitrogen in the urine (the former by the Bournigault-Jaeger or formaldehyde method), administer twenty grams of pancreatic peptone in water or bouillon, and repeat the nitrogen estimations in the urine of the succeeding twenty-four hours, and also in that of the second

day. Increase of the ratio of aminonitrogen to total nitrogen signifies a positive reaction. This test is more sensitive than the mere examination of the urine for spontaneous aminoaciduria, and its results are more easily interpreted than those obtained in the study of the azoturic ratio, of ammoniuria, and of other metabolic conditions previously inquired into by other observers. Alimentary (induced) hyperaminoaciduria fails to appear where the hepatic cell is not diseased or, at least, where only its biligenic and glycogenic affections are impaired (catarrhal jaundice, uncomplicated cholelithiasis); the test is positive, on the other hand, at a certain stage in Laennec's cirrhosis, in tuberculous fatty cirrhosis, and in primary hepatic cancer. It is also positive in diabetes with acidosis and emaciation.

Antigen Reaction in Tuberculosis.—R. Debré and J. Paraf, in view of the lack of success attending efforts to utilize the Bordet-Gengou fixation reaction in the diagnosis of tuberculosis, sought to modify the conditions of the reaction in order to impart to it greater value. Whereas, in the fixation test, an antigen such as tuberculin or bacillus emulsion is used in an attempt to ascertain the presence of specific antibody in the patient's blood or other fluids, Debré and Paraf reverse the procedure, using a known antibody to detect tuberculous antigen in the fluid examined. They found it easy to detect such an antigen in the urine, serous fluids and pus, milk, blood, sputum, and in bits of tissue from these cases. Most of their work so far has been concerned with the urine; over 300 specimens have already been tested. The technic of the reaction presents no unusual difficulty, and cases to which the test is inapplicable have now become the exception. Not only the tubercle bacillus itself, but some of the substances thrown off by it are detected by the reaction, which is, in fact, a more sensitive test for tuberculosis than guineapig inoculation. In unilateral renal tuberculosis the urine from the involved kidney yields a positive test and that from the other a negative test. The urine generally gives a negative reaction in chronic lung tuberculosis; a positive result in such cases indicates a temporary bacilluria, with elimination of antigen. In acute tuberculosis the reaction is always positive. In orthostatic albuminuria, the antigen reaction is the only procedure at present available for demonstrating the tuberculous nature of some of these cases. Applied to pleural, peritoneal, and articular fluids, serous or purulent, the reaction likewise permits of ascertaining promptly the tuberculous origin of the effusion. In the study of the sputum and mammary secretion encouraging results are being obtained.

ROUSSKY VRATCH.

November 3, 1912.

Round Ulcer and Cancer of the Stomach.—A. D. Voloshin discusses the autopsy findings in gastric ulcer and cancer. His theory is that these affections may be caused directly or indirectly by the colon bacillus and thus depend on polluted water.

Treatment of Leucemia with Benzol.—V. T. Rafalsky employed benzol in leucemia with marked improvement in one case, less favorable results in another, and an aggravation of symptoms in a third (acute lymphemia.) He cautions against large doses and advises the combined use of the x rays.

Therapeutic Application of Mexican Licorice (Lippia mexicana seu Lippia dulcis).—M. Ia. Breitman observed very favorable results from the administration of lippia in cases in which a mild expectorant and demulcent was indicated, such as dry irritating cough, later stages of catarrhal pneumonia, measles and whooping cough, laryngitis, pleuritis, irritating cough of smokers and singers, and the early stages of tuberculosis.

December 1, 1912.

Squash as a Diuretic.—A. Ph. Kakovsky presents a clinical study of squash in nephritis. A diet of squash causes profuse diuresis, diminution of the pathological elements of the urine, disappearance of edema, a rather profuse but painless diarrhea. It does not interfere with nutrition when eaten with butter. This therapeutic effect, the author attributes to the action of the squash juice on the passive function of the kidneys, whereby the osmosis between the blood and the urine is increased and the secretory apparatus is put at rest. Cases of nephritis are cited which apparently support these views.

December 15, 1912.

Mononucleosis in Dilatation of the Stomach.—I. A. Valedinsky studied the morphology of the blood in ten cases of dilatation of the stomach, with the following results: The total number of leucocytes remained normal. Polymorphonuclears and lymphocytes were somewhat diminished. Mononuclears were considerably increased (fourteen instead of six per cent.). Eosinophiles and basophiles remained without change. The authors regards the increase of mononuclears as constant in gastric dilatation.

Effect of Adrenaline on the Venous System of the Heart.—A. A. Grube reports on experimental investigation of the action of adrenaline on the veins of the isolated heart. The results indicate that adrenaline increases the volume of blood passing through the veins by stimulating the heart muscle.

December 22, 1912.

Experimental Data on the Treatment of Peritonitis.—Ph. M. Pikin performed in 1911 a series of experiments in dogs on the therapeutic value of the camphorated oil introduced into the peritoneal cavity in peritonitis. He failed to observe the slightest benefit from this method. The same failure followed in eight cases of purulent peritonitis in men, all ending fatally. Recently, he performed a number of experiments on rabbits in which he produced peritoneal adhesions. Introduction into the peritoneal cavity of camphorated oil did not prevent adhesions; on the contrary, it seemed to increase them. Experiments on healthy rabbits showed that when camphorated oil is introduced into the peritoneal cavity it acts as a foreign substance, causing inflammatory exudates. Moreover, if the oil, by closing the lymph channels, prevents absorption of bacteria, as shown by Glimm, it also stops the bactericidal action of the peritoneal endothelium. There is also a danger of embolism, as shown by Schepellman's experiments.

Paratyphoid Peritonitis.—G. Ph. Petrashevskaya reports a case of generalized peritonitis caused by the paratyphoid B bacillus. The patient, a boy aged ten, complained for about ten days of fever, headache and diarrhea. Then developed extreme tenderness of the abdomen and he was brought to the hospital suffering from generalized peritonitis. Laparotomy disclosed marked peritonitis but without perforation. The appendix was inflamed, but no more than the rest of the intestine. A severe post-operative period ended in recovery. Bacteriological investigation of the exudate proved the infective agent to be the paratyphoid bacillus. The author cites two other cases of severe infection with paratyphoid bacillus, one case ending fatally, and the other in recovery following operation for perforation.

BRITISH MEDICAL JOURNAL.

March 7, 1914.

Visceral Lesions of Purpura and Allied Conditions.—William Osler gives a detailed review of these conditions, illustrated by case reports covering almost all of the phenomena. He says that the visceral lesions are of two types—first, mechanical, due to exudation into the walls of the stomach or intestine, effusion into a mucous surface, or into the tissues of an organ; second, of an inflammatory type, such as nephritis, endocarditis, and the like. There is a dual etiology, infectious and metabolic. The phenomena of serum sickness are strikingly like certain types of the condition, and, "before long the anaphylactic key will unlock the mystery of these cases." Of cerebral manifestations there are two types; one with transitory attacks of paresis, the other with paralysis due to a gross hemorrhage. In purpura hæmorrhagica there may be hemorrhage into the eyeball, or in lesions of the erythema group there may be serious ocular inflammation. Of the gastrointestinal symptoms colic is the commonest, varying from slight and mild attacks of but a few minutes' duration up to the most severe and prolonged attacks. The pain is usually central and may radiate, but there is seldom any very distinct local tenderness or muscular rigidity, and the author has never seen a case in which the pain was localized to the right iliac fossa. Vomiting is also very common, and may be severe with bloody vomitus. Diarrhea is less common and may be watery with small amounts of blood and mucus, or may contain large amounts of blood. The gastrointestinal crises may occur with the following associations: 1. Without skin lesions, but with a history of having had them previously in association with diarrhea or alone. 2. Hemophilia. 3. In connection with ordinary urticaria. 4. With attacks of angioneurotic edema, usually only in the severer varieties of this affection. 5. With simple purpura. This is the commonest association, and such cases are not infrequently confounded with appendicitis even at the present time. 6. True intussusception may complicate abdominal purpura or angioneurotic edema, as a result of infiltration of the bowel wall. The renal complications are by far the most serious of all, but these may be of two general types. First the milder types in which there is complete recovery after the disappearance of the blood and albumin; second, the form in which there is either a rapidly fatal acute nephritis, or a severe nephritis followed by partial recovery with transformation of the nephritis into a chronic one leading to death within a few years. Cardiac complications are rare, but there may be either endocarditis or pericarditis with the infectious purpuras. Respiratory complications are also uncommon, but severe angioneurotic edema may involve the buccal mucosa, the glottic tissues, or the tracheal mucous membrane with severe symptoms or a fatal result. The liver or the spleen may be enlarged in certain types of the disease, and parotiditis is not uncommon in the infectious forms.

Oral Sepsis.—T. S. Bradburn reports the case of a man aged twenty-eight years who had previously had good health, but who was suddenly seized with a shivering fit, a general feeling of malaise, and pains in all of his joints. The following morning the legs were covered with red blotches. After two weeks in bed he was able to get up, but on doing so he had an exacerbation with return of his previous symptoms. In addition he had spasmodic abdominal pain not related to the taking of food. All of this had been taking place for six weeks before Bradburn saw him. On admission to hospital he presented the picture and gave the history of Henoch's purpura. Several methods of treatment were tried and blood examinations were made without avail. Blood was detected in both urine and stools. He had a low intermittent type of fever. Finally a searching examination was made to discover or exclude all sources of infection, and it was noted that he had many carious and septic stumps of teeth. These were all removed and at once his temperature fell to normal and he was well within a few weeks.

LANCET.

February 7, 1914.

Infantilism.—Hastings Gilford concludes this, the second of his two Hunterian lectures, with the following statements on general infantalism: "General infantilism is a variation of the process of normal development whereby it is seriously hindered at some stage prior to the appearance of puberty. There are two main biological divisions. The one is a fluctuation. In other words, the appearance of the infantilism is determined by two factors, the one an inherited tendency for development to be curtailed, the other an environment, or its equivalent, which facilitates or accentuates the change. The variation is of a regressive character; hence the environment which is congenial to its appearance is itself of a regressive or depressive kind, and consists in the toxins or in the presence within the body of an imperfect or diseased organ which by its correlation exerts an injurious influence upon the body as a whole. Or the depressive agency is exerted in a secondary manner through a secretion from one of the organs which preside over development. This form of infantilism is therefore symptomatic. Symptomatic infantilism being the outcome of a milder degree of variation, is the less striking of the two forms, is usually of the Lorain type, and often terminates in ordinary dwarfism. The other form of variation is more emphatic, for it tends to delay development to a still greater degree; it is so strong that it is in no way

dependent upon the action of environment, and is hereditary. It is a mutation, and like all mutations, is prone to be accompanied by a corresponding mutation in other directions. One of the most notable is that which affects the reproductive organs, stopping their development and tending, therefore, automatically to its own extinction. This important feature serves to divide mutational infantilism into two kinds—the sexual and the asexual. It must be recognized, however, that these merge one into the other, there being all sorts of gradations between them. Of infantilism as a mutation, or essential infantilism, there are two forms, ateliosis and progeria. Either of these may appear at any age before puberty, giving rise to important differences in their appearance. Ateliosis may therefore be divided into three classes, of which the first or most pronounced class originates in fetal life, the second in infancy, and the third during childhood." Ateliosis is a mutation that virtually stops development at a stage which corresponds to a similar stage in human evolution.

Morbid Anatomy of Tuberculosis in Man Theodore Shennan's second paper brings his discussion of the subject to a close. He finds that pulmonary tuberculosis seldom, if ever, is the result of a direct spread to the lungs from the supraclavicular glands, although invasion of the lungs from these glands, as from other portions of the body, may take place by way of the lymph or blood He also finds that occasionally an infection of the mediastinal and bronchial glands occurs through direct spread downward from the cervical group These cases are of two types; in one there is extensive caseation in the clavicular glands, or in the nearby glands in the upper mediastinum, while the bronchial glands show a more recent stage of tuberculosis, and the lungs show either no involvement, or an even more recent stage than in the bronchial glands. The second type shows a continuous chain of caseous glands extending from the mastoid process to the root of the lung, the changes in the upper glands being of older date than those in the bronchial glands, the infection in the case of the lower glands being either retrograde or by direct extension *per contiguitatem*. In a very large number of cases in children the bronchial glands were found to be caseous in 65.4 per cent. on post mortem examination. In a high percentage of these cases there existed no other tuberculous change in the lungs; in children very often, possibly in the majority of cases, the spread of open tuberculosis of the lungs is rather from gland to lung than vice versa. He also believes that in many cases the bacilli have originally reached the glands by means of phagocytes from the lungs, either with or without a primary lung infection.

Significance of Diabetic Family History. Otto May finds that in 1,143 fatal cases of diabetes there was a death from diabetes in the family of the victim in 3.6 per cent., or forty-one cases. Among 1,143 other cases taken at random, but covering the same period of time, there was a positive family history in only 1.05 per cent., or twelve cases. Further analysis of deaths from diabetes shows that 53.7 per cent. of the cases with positive family history were fatal before the forty-first year, while only twenty-one per cent. of deaths among those with negative family history occurred before this age. This suggests that there are two distinct types of diabetes. The first occurs in middle or later life, is mild, and there is no family factor. The other occurs early, is severe and fairly rapidly fatal, and has a strong family tendency. It seems, also, that the hereditary element is more marked in men than in women, for thirty-six of the forty-one patients with positive family history were men.

BOSTON MEDICAL AND SURGICAL JOURNAL

March 12, 1914.

Vaccination Efficiently Performed.—Edmond F. Cody has collated many opinions concerning vaccination and arrives at the following conclusions. Vaccination is a surgical procedure, and demands surgical asepsis. The patient must be under supervision of the physician until the scar forms, when a certificate may be given. He should be told that his immunity is limited in time; if liable to exposure he is to be revaccinated. Countries are most free from smallpox where vaccination is regularly imposed; revaccination of all persons should be required at stated intervals. Vaccination should be done with a minimum amount of trauma. The experience of most observers warrants two or more incisions. Vaccination efficiently performed protects against smallpox.

Cerebrospinal Fluid Examinations in Psychiatry.—Mary Elizabeth Morse says that examination of the serum and cerobrospinal fluid leads to reduction of the number of cases diagnosed as general paralysis. Cases most difficult to to differentiate from paresis without examination of the serum and cerebrospinal fluid, are cerebral syphilis and arteriosclerosis and Korsakow's psychosis. In regard to cerebral syphilis findings in the serum and cerebrospinal fluid are supposed to be sufficiently characteristic to permit a differential diagnosis from paresis, but in individual cases they frequently leave one in doubt. In a large insane hospital routine examination of the serum and cerebrospinal fluid finds, perhaps, its most immediate value in confirming or excluding the suspicion of paresis in new patients, and in revising the diagnoses of patients admitted in pre-Wassermann days.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

March 14, 1914.

Medicine a Function of the State.—A. D. Bevan says that our big problem is to educate public opinion by showing the great possibilities of scientific medicine. We must show what good can be accomplished, for individuals and communities, by efficient public health service, well trained practitioners, and medical research. When we have educated the public we shall have no difficulty in securing laws, machinery, and funds to make medicine, in the best sense, a great function of the state. When medical education has become a state function, great advances and discoveries in medicine in this country will be made largely by research workers in the medical departments of state universities, in the great hospitals, and state boards of health.

There should be close working between state boards of health, the county boards of health, the state university, and great charity hospitals; and, when we speak of medicine as a function of the state, we must include the medical care of the ten or twenty per cent. of population which cannot provide proper medical care of itself. Every day we are coming nearer the time when we shall see laws enacted to provide, by some state insurance scheme, medical care for the poor, as has been done in Germany and recently in England. If the profession here is far sighted it will recognize these coming events and direct them wisely. The medical schools in the older States will voluntarily become a part of the great machinery which will carry on for the state the function of medicine.

Adenomyoma of the Rectovaginal Septum.—T. S. Cullen reports two cases and states that the growth is benign, so far as it does not give rise to metastases, and, consequently, if the entire growth is removed, no further trouble need be feared. If portions are left, these will continue to grow and will lead to more pelvic adhesions, and finally produce complications which may result in death or permanent invalidism. The cases reported emphasize still more clearly the necessity of careful microscopical control of all rectal growths, as these adenomyomas might easily pass for rectal carcinomas and the cases classified as permanent cures of rectal cancer. The glands in these growths undoubtedly arise from uterine mucosa or remnants of Müller's duct. If they were rectal ademomyomas, the glands would naturally be of the type composing the rectal mucosa.

Dangers Attending Injections of the Kidney Pelvis for Pyelography.—J. M. Mason reports cases which prove, he says, that solutions injected into the renal pelvis may, in circumstances not entirely under our control, ascend into the tubules and out into the surrounding kidney tissue, carrying with them such infectious material as may be present in the pelvis, and set up serious inflammatory lesions. With this clearly established, it would seem that injections are contraindicated in infection of the kidney or its pelvis, and in cases in which the kidney has been impaired by injury or disease.

Primary Carcinoma of the Pancreas in a Patient Twenty-two Years Old.—James Burke states that this case is recorded to emphasize the fact that cancer is by no means confined to the later period of life. It is also an illustration of the difficulty not infrequently encountered, even by surgeons of wide experience, of distinguishing between two pathological conditions, an inflammatory process amenable to treatment, and a most deadly and hopeless form of malignant disease.

Perimyositis crepitans.—A. E. Hoag and M. Soletsky report a case characterized by creaking in different muscles, in a medical student. In the literature they found only three cases recorded, and theirs seems the only one in which any pathological and microscopical investigation of the lesion was made. A piece of muscle was removed from the left scapular region, where the crepitus was most marked. The findings were localized thickenings in the aponeurosis and muscle, which had been caused by hyaline swellings. The authors conclude that the cause of this affection is overexertion, resulting in small areas of rupture in the muscle and the aponeurosis, followed by minute hemorrhages and hyaline thickenings. These thickenings cause a creaking when the two surfaces rub together. If there is any fibrin present, it is absorbed very early.

MEDICAL RECORD.

March 14, 1914.

The Extension of Tuberculosis in the Immune Lung.—G. E. Bushnell says on this subject that we have the following facts to guide us. 1. Extension occurs first, and in high immunity probably alone, from lymph glands which contain the largest collection of tubercle bacilli and their products. 2. It will occur in tissues most flooded by such products. 3. It will occur in parts which best permit multiplication of tubercle bacilli, i. e., the most mobile parts. A tracheobronchial gland is usually the starting point of infection. The apex of the lung is the seat of the first manifest focus in pulmonary tuberculosis of the relatively immune, because its slight mobility permits the invasion of peribronchial tuberculosis from the largest primary focus by continuity through relatively immobile parts.

Exact Diagnosis of Catarrhal Conditions of the Eustachian Tubes and Ears.—Harold Hays first describes the following instruments: Hays's electric pharyngoscope, the Holmes nasopharyngoscope, and the silver Eustachian catheter of Yankauer, which he (Hays) has had measured off with half centimetre markings. He next describes Yankauer's applicators and bougies, and observes that the newer auroscopes are of great value in diagnosticating conditions of the drum membrane. A valuable adjunct to the auroscope is the new Carroll tympanoscope. Hays's improved audiometer, he hopes, will aid considerably in exact determination of the hearing when this is difficult to ascertain by ordinary means. The author states that this sort of treatment is far more exact than any which has heretofore been used; the results are correspondingly better. It is but the beginning of completely curing, or at least markedly alleviating, that most distressing condition, catarrhal deafness.

Adenoma of the Prostate.—Edwin Beer takes up successively the pathology of prostatic adenoma, mechanism of prostatic obstruction, indications for operation, and mortality. In regard to the first, the anatomical studies of Zuckerkandl and Tandler confirmed the previous conception that growing adenomata gradually compress the rest of the gland, so that it becomes a flattened out shell. As obstruction becomes more and more marked, the bladder becomes hypertrophied and trabeculated, pouches form, and residual urine collects. After a varying period hydroureters and nephroses develop; the parenchyma begins to suffer more and more as atrophic and fibrous changes take place in the kidneys. Infection, once introduced into the bladder, may ascend the relaxed ureters, and the whole upper tract become infected. In speaking of operation, he believes that the difficulty disappears in a measure if we divide our patients in accordance with their social status. A man who can afford an attendant trained regularly to empty his bladder and

wash it out, is in an altogether different position from one who has no such help; although there are risks incidental to such manipulations. The poorer man must have recourse to operation or go from bad to worse, without any relief worth the name. Clear indications of surgery are: Attacks of retention, marked frequency of urination, especially nocturnal which prevents sleep, bleeding, painful and difficult urination, chronic intractable cystitis, especially with stone, provided a brief period has been devoted without avail to medical therapy as the Wildungen water, ergot, and rest. The future will decide whether radium and massive x ray doses will prove of service. Transurethral cauterization with the Bottini incisor, and the high frequency current, have only temporary effect. There is no case in which it is more important to make a study of the patient prior to risking an operation. In prostatic adenoma there are three things which should be studied in particular, the anatomical and functional condition of the urinary tract, condition of the heart and arterial system. Beer employs suprapubic enucleation of prostatic adenoma, and states that the end results are ideal. There can be no question, he says, that in the two stage operation the patient has a better chance, and when in doubt he invariably employs it.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

February, 1914

Tuberculosis of the Breast.—J. B. Deaver avers that the diagnosis of mammary tuberculosis can be made with absolute certainty only by bacteriological or pathological study. Excepting direct inoculation of the breast, through abraded nipples and skin and possibly through the milk ducts, all mammary tuberculosis is probably a secondary manifestation. Since 1904 eighty-nine cases of the affection have been reported, and the author adds five which he observed. It occurs almost invariably in women, and he presents tables disproving that tuberculosis of the breast is a disease of adolescence and young womanhood. Apparently, mammary changes of pregnancy are not more predisposing to tuberculosis from a distant focus than to the so called primary tuberculosis. Wounds of the breast are rarely followed by tuberculosis, but in susceptible persons slight trauma is more likely than violent injury to be followed by tuberculosis. Antecedent mastitis has been noted in a considerable number of cases, and possibility of local tuberculosis of a preformed sinus is to be remembered. The most frequent initial symptom of tuberculosis of the breast is a painless lump, and the disease runs a much more rapid course than mammary carcinoma. Fistulas, retraction of nipple, and enlarged axillary glands are a triad strongly suggestive of tuberculous mastitis. Discussing pathological types of concurrence of carcinoma, and differential diagnosis, the author states that operative treatment almost promises permanent cure in primary cases. In secondary forms prognosis depends entirely upon activity, location, and extent of the primary focus. In future he would advise excision of a tuberculous mass in the breast of a young woman, with exploration of the axilla for palpable lymph nodes. In older women, simple amputation, with excision of axillary nodes, is the best method. Tuberculin should be given, as it may perhaps aid nature in overcoming any small focus which might escape the knife. Conservatism is expressed rather in limiting the excision than in discarding operation.

Pneumonic Hemiplegias.—C. F. Withington divides cerebral accidents in pneumonia into two classes: 1. Those caused by gross lesions, such as meningitis of pneumococcic origin, thrombosis, embolism, abscess, etc.; 2, hemiplegias generally occurring in young and rather vigorous persons, with prognosis relatively better than that of the first group. As many of the latter recover, there is a lack of post mortem evidence to show what lesion existed. There are four principal explanations of the hemiplegias of this group: 1. Encephalitis of the Strümpell type; 2, hysteria; 3, circulating organisms; 4, circulating toxins. Given conditions producing cerebral edema, it seems reasonable that hemiplegia might be caused if the posture made an excess of fluid gravitate to one side of the brain. Of various theories of etiology, it is probable that more than one is correct. Pneumonic hemiplegia without gross lesion usually appears about the second or third day from the onset of pneumonia. Hemiplegia may be complete, but oftener is limited to face, tongue, and right upper extremity. There may be aphasia, usually of ataxic type. Diagnosis is sometimes difficult, especially of meningitis, and lumbar puncture should always be made. In proportion as the organic group of hemiplegias is excluded, prognosis is favorable.

Splenectomy for Splenomegaly (Gaucher Type).—J. F. Erdmann and J. J. Moorhead advocate operation for these reasons: 1. All known forms of therapy have hitherto failed, including x ray treatment. 2. Even in advanced cases, splenectomy has resulted in relief of symptoms, weight, pressure, gastric and intestinal distress, malnutrition, etc. 3. Removal of the spleen is regarded as the method of choice in Banti's disease and splenic anemia, many splenectomies for these and allied conditions now being recorded; hence the inference seems warranted. 4. The homogenetic, or ferrogenetic function of the spleen is apparently unaffected after splenectomy, as indicated by a prompt return of the blood to normal. 5. Early recognition of suitable cases should result in a low operative mortality, as the operation *per se* in this class is little more hazardous than for other intraabdominal neoplasms. In a case reported by the authors, in which a brother of the patient had succumbed to splenomegaly, splenectomy was successfully performed in a girl aged three years. Subsequently, her condition steadily improved, and sixteen months after operation the child was reported well and strong.

OPHTHALMOLOGY.

January, 1914

T Shaped Sclerotomy.—Van Lint, of Brussels, has contributed the latest of the many recent substitutes for iridectomy in glaucoma, and gives a very full description of its technic. The conjunctiva is dissected deeply and freely from above the upper half of the cornea. A suture is then inserted on each side of the cornea in such a way that when tied it will draw down the conjunctival flap so as

to cover not only the place that has been denuded, but also the upper fourth of the cornea. A keratome is then introduced into the sclera two or 2.5 mm. from the limbus, exactly as if an iridectomy was to be performed, except that in the latter operation, the incision is made only one or 1.5 mm. from the limbus, so that the point of the knife instead of passing in front of the iris generally transfixes it and produces an iridodialysis. At this point he makes a complete iridectomy in acute or subacute glaucoma, while in the chronic forms he is content with a partial, peripheral iridectomy, or with iridodialysis alone. The interference with the iris he considers should be the more considerable as the form of glaucoma is the more acute. The forceps frequently have to be introduced behind the iris to seize it. The vertical branch of the T is then made by introducing one blade of a pair of scissors at the middle of the scleral wound and cutting a distance of three or four mm. the incision thus extending from one to 1.5 mm. into the corneal tissue. The conjunctival flap is then drawn over the entire field of operation by tying the sutures. The eye is bandaged for several days, and pilocarpine instilled for several weeks. The mode of action of this operation is thus summarized: 1. After making the radiating sclerocorneal incision, the eye frequently appears to be freed of a true circular band which encircled the eye around the cornea. It produces a veritable relaxing of the eye. 2. This radiating incision opens the canal of Schlemm, the spaces of Fontana, the lymphatic and venous evacuation of all trabecular tissue is favored by new anastomoses produced. 3. It produces a subconjunctival fistula as do all the perforating sclerectomies; probably the principal role of incision. 4. The subconjunctival fistulization provokes an increased aqueous secretion, which is one of the principal factors in the cure of glaucoma. Important above all things is the amelioration of the patient, and this Van Lint asserts is attained by T shaped sclerotomy. In spite of his powerful argument, it is still too soon to know anything regarding final results, as he has been using this procedure only since the beginning of 1912.

PEDIATRICS.

Treatment of Acute Tonsillitis in Children.—J. Epstein says that the treatment of acute tonsillitis should be the same as that of other acute diseases. The child should be confined to bed on a milk diet until the fever has subsided. Bowels should be freely opened with calomel followed by a saline. Sodium salicylate should be given every three or four hours, in doses according to the age of the child. Phenacetin or antipyrine may be given for the relief of pain. A few drops of the tincture of the chloride of iron in glycerin and water, may be given every three or four hours, but should not be our only remedy. A solution of hydrogen peroxide followed by an alkaline solution may be used as a gargle if the child is old enough, in others as a spray. A cold wet compress properly applied to the neck and changed every two or three hours will do some good. Children who are subject to repeated attacks of acute tonsillitis should always use a mild, pleasant, antiseptic gargle, if tonsillectomy is not indicated or permitted and should receive during cold, damp weather, a daily dose of sodium salicylate as prophylactic.

SOUTHERN MEDICAL JOURNAL.

Bacteriology of Cerebrospinal Meningitis.—K. R. Collins says that the diagnosis of cerebrospinal meningitis is comparatively easy on account of the clinical symptoms, but the underlying cause is rarely so clear, and it is only through bacteriological examination that a differential diagnosis can be made and a guide afforded for proper treatment, which in this disease is vitally dependent upon the etiology. In identifying Micrococcus intracellularis several groups of Gram negative cocci must be considered, such as Pseudomeningococcus, Micrococcus gonorrhœæ, Micrococcus catarrhalis, Micrococcus pharyngis siccus, Diplococcus mucosus, Parameningococcus, and chromobenic gram negative cocci. Primary cases of pericarditis, joint lesions, iritis, etc., have been reported where the meningococcus was the only invading organism. Cerebrospinal meningitis, due to the typhoid bacillus, tubercle bacillus, influenza bacillus, pneumococcus, and pyogenic organisms, can in most instances be differentiated by finding any one of these organisms in the spinal fluid. Such cases may be coincident with epidemics of meningococcic origin. Secondary cases of cerebrospinal meningitis are found in many infectious diseases, following lesions of pyogenic origin. It is rarely possible to wait for bacteriological examination before treatment is instituted, but where antimeningitic serum is used, laboratory findings can frequently be obtained before the second dose is given.

Cerebrospinal Meningitis Treated by Introducing Serum into the Lateral Ventricle.—R. V. Martin states that a study of the recent epidemics in Georgia and Texas has taught: 1. No case could be traced directly to another as its source of origin: 2, the disease was confined to no one locality, though insanitary conditions contributed largely to its existence; 3, quarantine was useless and unscientific, though isolation was very effective; 4, the germ was carried through the medium of a healthy carrier. Personal hygiene is of the greatest importance, and undoubtedly serves as a preventive. The case referred to was treated by puncture of the left lateral ventricle, after trephining the skull, drainage, and introduction of Flexner's serum. The operation was done on the twelfth day, when, in spite of injection of serum into the spinal canal, the patient had lapsed into a mild coma and marked general rigidity. The effect was very pronounced. His condition began to clear up immediately, the temperature varied from subnormal to normal, and within two weeks he was discharged from the hospital cured.

Tuberculosis: Intestinal Planting in Childhood; Lung Harvesting Later.—E. C. Thrash argues that it is not his intention to attempt to show that pulmonary tuberculosis in adults is produced exclusively from infections in early life, or that it can develop only in adults, for adults can become infected by ingesting the bacteria, just as children

may, and children may get a primary lung infection after ingesting the germs and not have tuberculosis of other organs. What he would emphasize is that observation, experience, and experimentation all point directly toward the method he describes as being the rule, while other modes of infection are the exception.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, December 15, 1913.

The President, Dr. Reynold Webb Wilcox, in the Chair.

Nomination of Officers.—The following nominations for officers were made: President, Dr. Thomas S. Southworth; treasurer, Dr. Isaac Hartshorne; chairman for the Borough of Manhattan, Dr. Thomas Darlington; chairman for the Borough of Queens, Dr. L. Howard Moss; member of the council, Dr. Frank Herbert Daniels.

Chronic Intestinal Stasis Medically Considered, by Dr. William van Valzah Hayes.—See this Journal for January 24, 1914, p. 170.

Röntgen Examination in Chronic Intestinal Stasis, by Dr. A. Judson Quimby.—*Loco citato*, p. 162.

Chronic Intestinal Stasis Surgically Considered; Some Types Illustrated, by Dr. William Seaman Bainbridge.—*Loco citato*, p. 153.

Dr. Edward L. Kellogg was sure that all must feel indebted to the authors of these papers for their comprehensive and convincing presentation of a subject in which there was such general interest. The diagnosis of intestinal stasis was not usually difficult when presenting active symptoms, as the history, the general appearance, and the physical examination were all quite characteristic. When it came to the matter of treatment, however, it was important to determine the location, character, and degree of the mechanical interference; and this was more difficult. The x ray was essential in some cases, but frequently by physical examination they could determine with accuracy the origin of the trouble. His findings had so often been confirmed by the x ray examination and by operation that he felt considerable courage in the expression of his opinion. Hayes's method of diagnosing duodenal stasis he had used repeatedly. It was a distinct addition to their methods of diagnosis. In applying it he frequently placed the patient in the Trendelenburg position, finding it much easier so to relieve the kinking when exerting upward pressure upon the lower abdomen. Dilated ileum and dilated and movable cecum were easily recognized, in favorable cases, by the physical examination alone. The so called "corded colon" seemed to him less probably a pathological condition. It could be palpated, but it was, at least sometimes, merely in a state of collapse, and the real trouble was at the hepatic flexure. Right movable kidney was usually found with prolapsed cecum, and was strong presumptive evidence of the presence of that condition. Fixation of the kidney would sometimes relieve stasis due to angulation at the hepatic flexure. Certain cases of iliac stasis were due to angulation from prolapsed but movable cecum. They could sometimes be recognized by using the Trendelenburg position and pressing the cecum upward, when the gas in the lower ileum would be expelled into the cecum. This really was an adaptation of Hayes's method of examining the duodenum. The series of cases which Doctor Hayes had reported were cured surgically. He regretted that he did not think best to tell of some of his brilliant results from medical treatment, as he thought some carried away the impression that he was more inclined to resort to surgical treatment than was really the case. Doctor Kellogg said he had been very much interested in a recent editorial article on intestinal autointoxication in the *Journal of the A. M. A.*, in which the editor quoted Hale White as follows, referring to operative treatment of this condition: "When these cases are reported we are always assured that all medical means have been adopted without benefit, but we are never told what the medical means were, and the thought comes to one's mind sometimes that perhaps some surgeons do not know all the means that a physician has at his command for the treatment of delayed action of the bowels." He was sure that this criticism did not apply to any of the authors of the papers read that evening. Still, it was a fact that they should have clearly classified in their minds the various nonsurgical therapeutic resources, and they should be certain that the possibilities of each line of treatment had been entirely exhausted before giving it up. Frequently he had known advice to be given in a general way, without definite instructions in regard to details. The patient reported no benefit, and that particular treatment was considered to be of no use. In this way one after another they might give up their therapeutic resources without having exhausted the possibilities of any one of them. To illustrate: A few weeks ago a patient had called at his office for whom he thought it best to prescribe a supporting belt. The patient replied that he had been wearing one for two years without benefit. He asked him to bring the belt and let him see it on him, and when he did so he found that he had an expensive belt satisfactory in every way, but that it was improperly applied. After a practical demonstration and a few minutes' instruction the patient went away convinced that there was something in supporting belts after all, and he has recently reported a marked improvement in all conditions, without other treatment. Doctor Kellogg said he could approve what Doctor Hayes had to say regarding the benefit to be derived from liquid paraffin, agaragar, and diet rich in cellulose. He had not, however, spoken of abdominal massage. When this was given thoroughly, with an exact knowledge of the points producing stasis, it gave excellent results. Various exercises which brought the abdominal muscles directly into play were also decidedly beneficial. Sleeping without a pillow and with the foot of the bed elevated often relieved the kinking sufficiently to cause a great improvement. To control the toxemia, he frequently prescribed large doses of animal charcoal. He also made use of the transduodenal lavage described by Jutte in

the New York Medical Journal in March, 1912. In applying this the duodenal tube was introduced for a distance of thirty inches, and from one to four or five pints of saline solution were introduced very gradually. The effects were excellent, sometimes remarkable. Indicanuria diminished, and the subjective symptoms improved. Where he had found a marked preponderence of anaerobic bacteria in the stools, he had occasionally found it advisable to use oxygen, introducing it through the duodenal tube and also into the rectum. This had a decided inhibitory effect upon the bacteria. He had found autogenous vaccines of value in treating a few cases or profound anemia resulting from infection of the colon with Bacillus aerogenes capsulatus.

Dr. Walter A. Bastedo said that from what had been shown it was very evident that stasis was a real condition. They could not make the diagnosis of intestinal stasis simply from the fact that the bowels did not move, for in some instances where the condition was undoubtedly present, there was actually diarrhea; which might be described as an "overflow" result. On the other hand, there were numerous cases of chronic constipation, in which none of the deleterious results attributable to stasis were present. Such persons had been graphically, though not very elegantly, described as having "the cecum and colon of an ox and the liver of a pig." When, however, the feces of individuals of this kind were examined, many varieties of poisonous substances were found. The agency of anaerobic bacteria, as asserted by Metchnikoff, was not tenable. In intestinal stasis there were symptoms of poisoning which were relieved by proper regulation of the bowels. In some cases, the regulation of the bowels, mechanical support, and other medical and physical means entirely failed to cure or relieve, and a resort to surgery was required. Last summer, he had spent some time with Lane, and had then become convinced of the necessity for operative interference in such cases and of the complete relief which this afforded. Always before operation, thorough x ray examination of the abdomen should be made.

Dr. Arthur F. Holding wished to congratulate the essayists and the association. Two features were very noticeable and commendable. First, the magnificent example of "team work" shown by the representatives of internal medicine, röntgenology, and surgery. Such work was the necessary foundation for such results. Second, the fact that the entire gastrointestinal tract was examined in each case. A stomach examination alone was not sufficient, nor should they be satisfied with an examination of the stomach alone in any case presenting gastric symptoms. So much had been said concerning the interpretation of the Röntgen plates, that he would refrain from discussing that portion of the symposium. In relation to the physical signs of dilated duodenum in intestinal stasis, röntgenological examinations had proved that many patients did not have dilated duodenums, but duodenums thrown into reflex spasmodic contractions by the stasis elsewhere. These cases did not give physical signs recognizable over the duodenum, and were apt to be misinterpreted as primary lesions of the duodenum, or not recognized at all unless serial radiographs were made. They were overlooked entirely by the fluoroscopic method.

Dr. J. Bion Bogart found himself not altogether in accord with the previous speakers. Lest they should think him ignorant of the subject, he would say that it had not been for lack of opportunity. Last spring, he had the pleasure of spending the month of March at the Mayo clinic in the daily company of Mr. E. G. Schlessinger, late house surgeon at Guy's Hospital. Doctor Bainbridge had been kind enough to invite him to a "stasis" symposium at his house, at which, after more or less formal addresses by Doctor Bainbridge and Mr. Schlessinger, illustrated by lantern slides, an informal discussion was participated in by a large number of the gentlemen present. On the 28th of November he had the pleasure, again through the courtesy of Doctor Bainbridge, of attending his "stasis" clinic at the Polyclinic Hospital, at which Sir Arbuthnot Lane made an address and operated on two patients, doing in one case an ileosigmoidostomy and in the other a colectomy. Later, on the same day, Doctor Bainbridge also did an ileosigmoidostomy. In addition to what he had seen and heard, he had had the pleasure of discussing the subject with Sir Arbuthnot Lane, and had witnessed his and Doctor Bainbridge's demonstrations in the operating room. To this he must add his own operative experience, which had not been inconsiderable. That there was such a condition as "stasis" he had not the least doubt, but what to do about it was what puzzled him. He had done but one ileosigmoidostomy for stasis. His patient was a poor Russian Hebrew woman in a most wretched condition—an undoubted case, with all the symptoms they had so often heard related. She survived the operation, but insisted that she was no better than before. He did not think she told the truth, for her mottled brown skin cleared up and she looked better, but she still complained of alternating constipation and diarrhea and of pain, until she left the hospital about four weeks afterward. One case proved nothing, but reverse peristalsis persisted after ileosigmoidostomy, and they must in many cases have a never ending vicious circle unless they resorted to colectomy. And here he would say that, although ileosigmoidostomy might be a simple operation, with only a trifling mortality, colectomy was not simple, and in the hands of even the most skillful surgeons must yield a considerable mortality. He thought they might all safely follow Sir Arbuthnot Lane at a respectful distance; by which he meant that they should reserve their ileosigmoidostomies and colectomies for the most desperate cases; but even here they should remember that the more desperate the case the more doubtful the outcome as to mortality. But in the mean time what were they to do for that very much larger number of patients, illustrating lesser degrees of stasis, who were not relieved by liquid paraffin, and whom in the present state of our knowledge, should they hesitate to submit to either of the major operations? Lane offered them no alternative.

Dr. Harold D. Meeker thought that the more they studied intestinal stasis, the existing pathological conditions, the etiological and end result possi-

bilities, the more they were impressed with the tremendousness of the subject. It had been his previlege to observe most of the cases which had been presented, before, during, and after operation. It had not been the acceptance of any theory, but the results seen in these, as well as in other cases, in many of which the more radical operations had been done that for him personally had broken down the barrier of justifiable skepticism. Whether they accepted or not the theories of Sir Arbuthnot Lane as to the formation of evolutionary bands, the conditions did exist, call them what they liked, and the fact remained that when the mechanical interference with the drainage system had been properly dealt with, in which these conditions existed, patients did get relief, if not absolute cure. On the surgical phase of this subject, he was so full of his theme that it was perhaps difficult for him to realize that others less experienced could not take at once his comprehensive view. Particular reference had been made, and patients shown, to illustrate a middle class of cases in which one or more less radical operative measures were sufficient to effect the desired result, i. e., such measures as dividing the bands transversely and suturing longitudinally, anchoring a movable cecum, relieving fixed points, etc. This kind of procedure was assailed by many, who maintained that the old bands and adhesions were promptly replaced by new ones. To bear testimony that this was not so, in cases uncomplicated by inflammatory bands, they had many patients to-day greatly relieved or cured. It was needless to say that careful technic was an absolute essential. The type of abnormal conditions existing in this arbitrary class was bound to be recognized and surgically dealt with by a large number of operators who would not countenance or attempt the more radical procedures.

The fact that so many surgeons were willing to believe in the existence of bands, yet did not know how to locate or recognize them, suggested that it might be worth while to point out the usual situations of these abnormal structures which tended to bring about the condition of evolutionary stasis This condition should not be confounded with inflammatory stasis. 1. There might be developed a band extending from the pylorus to the under surface of the liver, in front of the transverse fissure. It formed an additional support for the stomach, an excellent thing, if there was no extension. Frequently, however, it did extend forward in front of the transverse fissure, not only involving the gallbladder and cystic duct, but even becoming attached to the transverse colon. Serious disturbance might thus be caused in any or all of the involved organs. 2. An abnormal band might cause a kinking of the duodenojejunal angle, so as to render the emptying of the duodenum more or less difficult. 3. A collection of inelastic fibres might develop on the under surface of the mesentery of the last few inches of ileum. These at first formed part of the under surface of the mesentery, later they formed a distinct ligament which contracted, causing more or less deformity of the ileum, the Lane kink. The consequent dilatation of the small bowel might extend back as far as the pylorus. 4. Peritoneal adhesions frequently became fused into a broad band spread out along the outer aspect of the cecum and ascending colon, attaching this to the adjacent abdominal wall. Various portions of this band, as well as the varied stages of its evolutionary development, had to be given special names by numerous observers. They heard of Jackson's membrane, Jonnesco's fold, Reid's band, the bloodless fold of Treves, and others. 5. Both the hepatic and splenic flexures of the colon might be held at exaggerated angles by contracting evolutionary bands. 6. In the effort to keep the sigmoid out of the true pelvis, Nature might bring about the formation of bands on the outer surface of the mesosigmoid. A mobile loop was thus converted into a fixed tube, with more or less variation in its lumen. Very frequently the left ovary was involved in the adhesions which fixed the lower pelvic colon. There might be other evolutionary bands that had been overlooked, but the time would soon come when these types at least must be recognized.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Genito-Urinary Diseases and Syphilis. By EDGAR G. BALLENGER, M. D., Adjunct Clinical Professor of Genito-Urinary Diseases, Atlanta Medical College; Editor *Journal Record of Medicine*, Urologist to West Memorial Hospital, Genito-Urinary Surgeon to Davis-Fisher Sanatorium, etc. Assisted by OMAR F. ELDER, M. D. The Wassermann Reaction. By J. EDGAR PAULLIN, M. D Second Edition Revised, with 109 Illustrations. Atlanta, Ga.: E. W. Allen & Co., 1913. Pp. xxiv-529. (Price, $5.)

To criticise such a book as this fairly is not an easy task. The author is well known as a competent practitioner, and the doctrines that he preaches are sound; but his work shows a sad lack of appreciation of the effect produced by his words upon the student. Thus, many authors are quoted, but they are not always quoted correctly. The description of Hagner's operation for gonorrheal epididymitis is categorically wrong. The three glass test of urine is depicted in a way to suggest that posterior urethritis always produces pus in the second and third glasses. Although this is qualified in the text, the impression produced by the illustration overshadows the other. Of tuberculosis of the testicle (*sic*) he says: "The epididymis is thought to be a frequent seat of primary tuberculosis. Infiltration is, as a rule, first noted in the head of the epididymis. The tubercle finally undergoes a cheesy degeneration. The same thing occurs when the disease begins in the testicle."

In the description of renal tuberculosis, the seventeen line paragraph on symptoms closes with the following sentence: "Frequent and painful micturition may occur either from a severe inflammation of the pelvis of the kidney, or from an extension of the process to the bladder." On page 104: "After most cutting operations (for stricture) it is necessary to pass sounds." On page 47 he depicts an abscess of Cowper's gland pointing at the penoscrotal angle. On Page 17: "If 'moments' are ever 'golden' it is in the beginning of gonorrhea." These various statements have different degrees of truth; yet all of them, except the last, turn the student's mind away from the important point. They are written in a casual and misleading way. This tone pervades the whole book. The history of urology is nicely intermingled with the text, but important pathological facts are overlooked, and the summary at the end of each chapter is sometimes treated as casually as the preceding text. For example, in the summary of the treatment of epididymitis, no mention is made of elevation of the testicle. The author [illegible]

on salvarsan and the Wassermann reaction are among the best in the book. We could wish that Doctor Ballenger had injected into his book some of the skill and precision that he shows in his practice.

... Cause of the Social Evil and the Remedy. By ALBERT W. ELLIOTT, President and General Manager, the Southern Rescue Mission. Atlanta, Ga.: Webb & Vary Co., printers. Pp. 144.

This little work is in many respects a remarkable one. The writer apparently started on his investigations with the prejudices and the point of view of a country clergyman of the old school, an upholder of a cosmogony that includes the tower of Babel and the Noachian deluge, a thinker who looked upon the social evil as nothing more or less than a series of deliberate violations of a Mosaic law against adultery, unaware of the modern view that this law was directed solely against infractions of property rights and that nothing was further from the early Israelite mind than Christian ideas of purity. Apparently he intended to abolish the social evil by the methods of an old time revival and by personal exhortations. After visiting 3,000 brothels, however, and talking with over 15,000 prostitutes, the writer's views have undergone a complete reversal; he has learned that the great majority of people know nothing of the causes of prostitution; he has seen that there is no "white slave" traffic and that the women in the business are there because their "very being is permeated with a gross carelessness of good morals and high ideals. They are what might be termed low brows; possessing not one iota of courage to face the world bravely; devoid of womanly instinct, of character, and of principle. The motherhood instinct that lies in the average woman's heart and soul is missing in this class of women. . . . It is not their fault. They are in most instances doing the best they can, the best they know how. . . . They cannot understand why one should want good character. Possessing no high ideals themselves, the whole thing is simply foreign to them."

Mr. Elliott offered every prostitute he met a chance to reform; of the immense number fifty accepted or pretended to accept, and of the fifty a single one did really reform. Being convinced that once a prostitute always a prostitute, and that the prostitute is born so, the writer sees no remedy, but as a palliation insists upon segregation. Coming from the type of man that it does, this book deserves wide reading; we have given it space somewhat commensurate with its importance, despite its small size. The medical reader will smile at many naivetés in the work, for, outside of his views on the one subject, the author's philosophy has not broadened in the least and other vast problems of our civilization he still regards from the standpoint of the village pulpit.

Taschenbuch fur Frauenheilkunde und Geburtshilfe. Von L. JANKAU. Vierte umgearbeitete und vermehrte Auflage. Leipzig: Repertorienverlag, 1914. Pp. xxiv-272.

The fact that this is the fourth edition would indicate that there has been some demand for this publication. As a book of reference it is possibly of some value, but as one from which to study the subject, it does not appear to be of great worth. It is mainly a collection of tables and condensed extracts that might be useful if they could be arranged, but as there is nothing that is comparable to a real index the information that the book does contain is not easily available.

... Professor of Medicine and Surgery. Causes and Diagnosis of Chronic Diseases, Especially of Prostate, Kidney, Heart, Stomach, Lungs, Neuroses, etc. By ... M.D., Author of *Non-Surgical Treatment of Diseases of the Prostate and Annexa*, etc. Chicago: Rowe Publishing Co., 1914. Pp. 320

"Sound and sufficient reason falls after all, to the share of but few men, and those few men exert their influence in ... " These words the author of this volume opens his preface. Let anyone read it who wishes proof that the devil can quote Scripture to his own ends. Doctor Overall is well known as a stout champion of the non-operative treatment of prostatic hypertrophy. In this volume he quotes a few words from various authorities to prove that there is no agreement among surgeons. He then cites a number of operative cases resulting in the death of the patient, and finally discloses how he cures these cases without an operation. It is interesting to note that of the two paragraphs devoted to tuberculosis of the prostate, in the first he states that there is no such thing; while the second concludes with the following somewhat undulating sentence: "Many of such cases have come under my care that have yielded readily to treatment of the gland, and restoration to perfect health followed."

Dengue und andere endemische Kustenfieber. Von Prof. Dr. GEORG STICKER, in Munster i. Westf. Mit einem Kurvenbilde. Wien und Leipzig: Alfred Holder, 1914 Pp. 76.

Sticker, in his portion of the Nothnagel publication, gives an interesting and valuable account of the coast fevers of warm countries, and of dengue in particular. This latter subject is dealt with first from the causative side then from the clinical. The author states that as yet the etiological factor is not known, but the general evidence points to the mosquito as the transmitting agent. Consequently the most important factor in the control of the disease is the extermination of the mosquito.

The Pathology of Growth Tumors. By CHARLES POWELL WHITE, M. D., F. R. C. S., Director, Pilkington Cancer Research Fund, Pathologist, Christie Hospital, Manchester, Special Lecturer in Pathology, University of Manchester. Illustrated. New York: Paul B. Hoeber, 1913. Pp. xii-235. (Price, $3.50.)

In this book on tumors, White gives an interesting and clear presentation of the subject. The general characteristics and the microscopical changes are fully discussed, but in addition there is much from the biological point of view. As stated in the preface, considerable space has been devoted to such questions as the relation between functional activity and growth, and the origin life history, and causation of tumors; all of which adds greatly to the value of the work. Criticism may be made by the classification of the tumors. The separation into tissue tumors and cell tumors, with sarcoma and carcinoma together in the latter, and fibroma and adenoma in the former, does not seem satisfactory. In the chapter on causation, the parasitic theory is reviewed quite fully and the author holds that since cell proliferation in tumors is similar to cell proliferation under normal conditions, the assumption of a parasite to explain is quite unnecessary and makes an explanation of tumor growth more difficult. The book is a good one and of distinct value.

Fibroids of the Uterus. Their Pathology, Diagnosis, and Treatment. By Sir JOHN BLAND-SUTTON, Surgeon to the Middlesex Hospital and Its Cancer Charity. With Thirty-nine Illustrations. London: Science Reviews, Ltd., 1913. Pp. vii-245. (Price, 4s. 6d.)

In this small monograph the author describes in narrative form the main features of the more common uterine fibroids. He urges that hysterectomy is the most satisfactory of the various surgical procedures proposed; it enables women to lead useful lives and if married does not deprive them of marital companionship. The book is interestingly written, well illustrated, and covers the subject of uterine fibroids efficiently.

Taschenbuch der Therapie mit besonderer Berücksichtigung der Therapie an den Berliner, Wiener u. a. deutschen Kliniken. Herausgegeben von Dr. M. T. SCHNIRER. Redakteur der Klinisch-therapeutischen Wochenschrift. Zehnte Ausgabe. Nachdruck auch einselner Teile verboten. Würzburg: Curt Kabitzsch, 1914. Pp. 474.

The tenth edition of this convenient little work has been brought up to date by the inclusion of forty-five new remedial agents introduced within the past year. A chapter on cosmetics has also been added. The first half of the book consists of an index of diseases and symptoms, the diagnostic features and appropriate treatment—including an assortment of prescriptions—of each being given in condensed form. The second half contains a list of drugs with dose, modes of administration, etc.; a table of drugs classified according to their action; an account of various serums and foods; information on incompatibilities, the diagnosis and treatment of cases of acute poisoning, and first aid to the injured; formulæ for hypodermic injection; a table of maximal doses; weights and meas-

ures; infant feeding; therapeutic technic, e. g., that of venesection, bathing, respiratory exercises, etc.; dietetics; and a list of health reports and private institutions in Germany and Austria-Hungary.

Interclinical Notes.

While casting an interested glance at the *Texas Medical Journal* for March, we were brought up with a round turn by a statement, on page 407, in reference to the creed of the Texas Society of Social Hygiene, part of which is alleged to be belief in the virtue and *virility* of woman as the type of the race; the shocked italics are ours. If ever virility becomes a characteristic quality of Texas women, we can say good-bye to the Society of Hygiene, which will lag extremely superfluous upon the stage.

* * *

Doctor Camberwell is an important personage in None so Blind, by W. Carey Wonderly, in the March *Ainslee's*. He has performed one of those mysterious operations confined to fiction, on the eyes of Mr. Marpleson, who tears off the bandages twenty-four hours too soon with sensational results. Unfortunately the story ends before the doctor gets back, so we miss his very natural annoyance at having his prognosis utterly put to confusion.

In Their Second Flight, by Louise Winter, in *Young's Magazine* for March, we meet Agnes Dorn, wife of a physician, a clever woman who never misses an exhibition at the National Academy. In The Yellow Door, by Eugene A. Clancy, we have the great Doctor Brainridge, "Old Carver John," clean cut, square jawed, faultlessly attired, cold blooded, serious; he is a rather heavy figure on which to hang a very light romance, although there is plenty of blood and thunder. You Can't Fool Your Husband All the Time, and a playlet, Made Final, are in the modern style and exciting enough for anybody.

Careful search through the *Red Book* for February has revealed all sorts and conditions of men and women with one exception; there does not seem to be a physician anywhere between the covers, a rare state of things. Our profession offers great temptation to the fiction writer, because a little of the ancient mystery still clings to us, and where there is mystery, fear is not hard to summon. There are nearly all other possible kinds of people, however, in this enterprising monthly and the types are much more human than they used to be when we devoured fiction eagerly.

The latest gossip concerning our friends of 300,000 years ago, to whom we have already referred more than once, relates to a battle between a lion and a sabre toothed tiger, engineered and managed by our bright young friend Uk, aided and abetted by his little girl friend, O-o. This is told by George Sterling in the *Popular Magazine*, first April issue. Whether the facts are exactly as stated or otherwise, Mr. Sterling is safe from contradiction, and the picture of mankind's first days is not without value to the young clientele of the *Popular*.

* * *

While the articles in *Pearson's Magazine* for April may not touch you deeply, they will make you feel deeply touched; by which we mean that many disclosures are made of how your money is wasted. Faking Popular Government is one revealing article; Bargains, by Maude Radford Warren, is another; How the "Food Control" Controls Food, by William Leavitt Stoddard, is a third; while the editorial department, Things as They Are, is one of the best summaries of recent events in their true colors that is published. There is good fiction in this number, bright rays athwart the gloom.

* * *

No matter with what haste a man may be springing the pages of a magazine under his fingers, the sight of the name of Kipling will stop him; we found Friendly Brook by the no means defunct Rudyard in the *Metropolitan* for March, and read with deep enjoyment of the adventures of the deaf and dumb Mary at Brighton Hospital under the care of Doctor Harding. There is more to the story and more stories too in this handsome magazine, by such people as Richard Harding Davis, our colleague Rupert Hughes, Compton Mackenzie, Lincoln Steffens, and H. G. Wells, the latter one of England's geniuses. The cover, by Penrhyn Stanlaws, is a thing of beauty and a joy till next month.

* * *

Current Opinion for March upholds its reputation as an indispensable publication for busy intellectual people; it culls from *Nature* and the *British Medical Journal* the latest information about the much discussed and still little understood radium and from the Paris *Anthropologie* how prehistoric woman solved the problem of her waist. The doctor may skip these articles as being in his own line and devote his attention to the review of the world, persons in the foreground, music and drama, science and discovery, religion and ethics, literature and art, and finance and industry, to say nothing of wit and humor, all intelligently summarized and discussed and beautifully illustrated.

Meetings of Local Medical Societies.

MONDAY, *March 30th.*—Psychiatric Society of Ward's Island; Poughkeepsie Academy of Medicine.

WEDNESDAY, *April 1st.*—Brooklyn Society for Neurology; Society of Alumni of Bellevue Hospital; Harlem Medical Association, New York; Bronx Medical Association; Elmira Academy of Medicine; Psychiatrical Society of New York; Society of Alumni of St. John's Hospital, Brooklyn; Schenectady Academy of Medicine; County of Rockland Medical Society; Medical Society of the County of Genesee.

THURSDAY, *April 2d.*—New York Academy of Medicine (stated meeting); Brooklyn Surgical Society; Practitioner's Club, Buffalo; Glens Falls Medical and Surgical Society.

FRIDAY, *April 3d.*—New York Academy of Medicine (Section in Surgery); New Utrecht Medical Society; New York Microscopical Society; Gynecological Society, Brooklyn; Manhattan Dermatological Society; Practitioner's Society of New York; Corning Medical Association; Saratoga Springs Medical Society; Society for Serology and Hematology, New York.

SATURDAY, *April 4th.*—Benjamin Rush Medical Society, New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending March 30, 1915.

Boggess, J. S., Surgeon. Relieved from duty at the Mobile Quarantine Station and directed to proceed to Yokohama, Japan, for duty in the office of the American Consul General. **Bolten,** Joseph, Assistant Surgeon. Relieved from duty at Detroit, Mich., and directed to proceed to Chicago, Ill., and report to the medical officer in charge of the Marine Hospital for duty and assignment to quarters. **Brown,** B. W., Surgeon. Relieved from duty at Yokohama, Japan, and directed to proceed to San Francisco, Cal., and report arrival to the bureau and there await orders. **Collins,** G. L., Passed Assistant Surgeon. Relieved from duty in connection with the trachoma clinic at Hindman, Ky., and directed to proceed to Boston, Mass., and report to the medical officer in charge of the Marine Hospital for duty and assignment to quarters. **Fricks,** L. D., Surgeon. Directed to proceed to Victor, Mont., for the purpose of carrying on operations for the prevention of the interstate spread of Rocky Mountain spotted fever. **Homman,** Harry B., Sanitary Chemist. Directed to proceed to Baltimore and Luray, Md., and other places on the Potomac River Watershed, to make special field studies of sanitary wastes. **Laughlin,** J. B., Assistant Surgeon. Relieved from duty at the Gal-

Quarantine Station, and directed to proceed to the Mobile Quarantine Station and assume charge, relieving Surgeon J. S. Boggess. **Lavinder,** C. H., Surgeon. Relieved from temporary duty at the Hygienic Laboratory, and directed to rejoin station at Marine Hospital, Savannah, Ga. **Lumsden,** L. L., Surgeon. Directed, at the request of the Health Department of Cumberland, Md., to proceed to that city for the purpose of addressing a public meeting on March 13, 1914, on the subject of means necessary to prevent typhoid fever. **Parker,** H. B., Passed Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Guayaquil, Ecuador, for duty in the office of the American Consul General. **Schereschewsky,** J. W., Surgeon. Directed to proceed to New York, N. Y., for the purpose of attending the postponed meeting of the Hygiene Committee of the National Council for Industrial Safety, March 12, 1914. **Turnipseed,** D. C., Assistant Surgeon. Relieved from duty in the Quarantine Service of the Philippine Islands and directed to proceed to San Francisco, Cal., and report arrival to bureau and there await orders. **Voegtlin,** Carl, Professor. Directed to proceed to Spartanburg, S. C., for conference with Passed Assistant Surgeon R. A. Herring to determine the availability of that location for special studies of metabolism in relation to the causation of pellagra. **White,** M. J., Surgeon. On request of the Industrial Commission of Indiana, directed to proceed to Indianapolis and other points within that State, to cooperate with said commission and representatives of the Federal Bureau of Labor Statistics on investigations of sanitary conditions of factories and workshops, and studies of physical status of workers. **Wickliffe,** T. F., Acting Assistant Surgeon. Directed to proceed from Hyden to Jackson, Ky., to take charge of the trachoma work at the latter place.

Board Convened.

Board of medical officers convened to meet at the bureau March 18, 1914, for the purpose of revising the telegraphic cipher code of the Service. Detail for the board: Assistant Surgeon General L. E. Cofer, chairman; Assistant Surgeon General W. C. Rucker, member; Passed Assistant Surgeon Hugh de Valin, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending March 21, 1914:

Billingslea, C. C., Captain, Medical Corps. Directed to make inspections of the organized militia of Ohio, as follows: Columbus, March 9th to 11th; Spencerville, March 12th; Toledo, March 13th; Cleveland, March 16th; Zanesville, March 17th; Dayton, March 18th, and Cincinnati, March 19th. **Davis,** A. D., Captain, Medical Corps. Directed to make inspections of the organized militia of Missouri, as follows: St. Joseph, April 2d; Kansas City, April 3d and 4th; Joplin, April 5th; West Plains, April 8th, and St. Louis, April 10th. **Dunbar,** L. R., Captain, Medical Corps. Directed to make inspections of the Indiana organized militia, as follows Angela, March 30th; Frankfort, March 31st; Indianapolis, April 1st, and Bloomington, April 2d. **Falisi,** J. Vincent, First Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States on account of an existing emergency, and will report in person to the commanding officer of Fort Logan H. Roots, Ark., for duty and by letter to the commanding general of the Eastern Department. **Farrow,** E. J., First Lieutenant, Medical Reserve Corps. Granted three months' leave of absence, about May 10th. **Hogan,** J. A., First Lieutenant, Medical Reserve Corps. Granted three months' leave of absence, about April 15th, with permission to apply for one month's extension. **Mabee,** J. I., Captain, Medical Corps. Having completed the duty for which he was ordered to Washington, D. C., will return to his proper station. **Robertson,** James A., First Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States on account of an existing emergency, and will report in person to the commanding officer of Fort Thomas, Ky., for duty, and by letter to the commanding general of the Eastern Department. **Weed,** Mark D., Captain, Medical Corps. Relieved from duty at Washington Barracks, D. C., effective on his return to that post from temporary duty at Fort Mott, N. J., and will then proceed to Fort Ethan Allen, Vt., for duty.

Births, Marriages, and Deaths.

Married.

Ostrer—Koffman.—In Boston, Mass., on Sunday, March 8th, Dr. Harry Ostrer and Miss Bessie Koffman.

Died.

Battey.—In Augusta, Ga., on Thursday, March 12th, Dr. W. W. Battey, aged sixty-six years. **Blodgett.**—In Saranac Lake, N. Y., on Tuesday, March 10th, Dr. H. W. Blodgett, aged twenty-seven years. **Bowles.**—In Berkeley, Cal., on Sunday, March 8th, Dr. George E. Bowles, aged seventy-four years. **Butler.**—In New York, on Saturday, March 14th, Dr. James N. Butler, aged fifty-three years. **Carter.**—In Philadelphia, on Wednesday, March 18th, Dr. Woodward D. Carter, aged forty-seven years. **Coffman.**—In San Francisco, Cal., on Wednesday, March 4th, Dr. Nelson B. Coffman, aged sixty-five years. **Copeland.**—In Birmingham, Ala., on Wednesday, March 11th, Dr. Benjamin Griggs Copeland, aged fifty-three years. **Cushenberry.**—In Wichita, Kan., on Wednesday, March 4th, Dr. J. C. Cushenberry, of Wann, Okla., aged sixty-four years. **Downes.**—In St. Louis, Mo., on Tuesday, March 10th, Dr. Michael J. Downes, aged forty-eight years. **Dwyer.**—In Philadelphia, on Thursday, March 12th, Dr. Charles H. Dwyer, aged fifty-nine years. **Farrar.**—In Stilwell, Okla., on Friday, February 27th, Dr. O. W. Farrar, aged fifty years. **Gardner.**—In West Brookfield, Ohio, on Monday, March 9th, Dr. James F. Gardner, aged seventy-eight years. **Gorrell.**—In West Asheville, N. C., on Wednesday, March 4th, Dr. J. K. Gorrell, aged seventy-eight years. **Gray.**—In Kansas City, Mo., on Monday, March 9th, Dr. H. H. Gray, of Oklahoma City, Okla. **Grider.**—In Milwaukee, Wis., on Saturday, March 7th, Dr. A. B. Grider. **Howard.**—In Macon, Ga., on Friday, March 6th, Dr. W. O. Howard, of Morgan Ga., aged thirty-two years. **Johnson.**—In Hartford, Conn., on Sunday, March 15th, Dr. Marcus M. Johnson, aged seventy years. **Jones.**—In New Orleans, La., on Wednesday, March 11th, Dr. John T. Jones, aged fifty-three years. **Kennedy.**—In Brooklyn, N. Y., on Tuesday, March 17th, Dr. Francis S. Kennedy, aged fifty-eight years. **Leal.**—In Paterson, N. J., on Friday, March 13th, Dr. John L. Leal, aged fifty-five years. **Liggett.**—In Bedford City, Va., on Wednesday, March 4th, Dr. William P. Liggett, aged sixty-two years. **Loftus.**—In St. Louis, Mo., on Friday, March 13th, Dr. William V. Loftus. **Mayer.**—In Cincinnati, Ohio, on Thursday, March 5th, Dr. B. J. Mayer, aged fifty years. **McKinnon.**—In Port Huron, Mich., on Monday, March 9th, Dr. Abner A. McKinnon, aged forty-three years. **McNaughton.**—In Brooklyn, N. Y., on Tuesday, March 17th, Dr. George McNaughton, aged fifty-eight years. **Merritt.**—In Baltimore, Md., on Sunday, March 8th, Dr. James B. Merritt, Easton, Md., aged fifty-five years. **Miller.**—In Hopewell, N. J., on Sunday, March 8th, Dr. John Miller, aged seventy years. **Monroe.**—In Providence, R. I., on Wednesday, March 11th, Dr. William Coe Monroe, aged sixty-five years. **Nisbet.**—In Jacksonville, Fla., on Monday, March 9th, Dr. W. M. Nisbet, aged seventy-nine years. **Potts.**—In Maplesville, Ala., on Saturday, March 7th, Dr. V. B. Potts, aged thirty-four years. **Preston.**—In Newfield, Me., on Sunday, March 15th, Dr. W. E. S. Preston, aged fifty-eight years. **Schaie.**—In New York, on Thursday, March 19th, Dr. Samuel Schaie, aged sixty-two years. **Shields.**—In Cincinnati, Ohio, on Monday, March 9th, Dr. Percy Shields, aged thirty-nine years. **Simmons.**—In Brooklyn, N. Y., on Wednesday, March 18th, Dr. Daniel Simmons, aged seventy-one years. **Stolzenbach.**—In Wellesley, Mass., on Thursday, March 12th, Dr. Frank A. Stolzenbach, aged thirty-four years. **Taminosian.**—In Boston, Mass., on Friday, March 13th, Dr. Timotheus Taminosian, aged fifty-three years. **Welshman.**—In East Orange, N. J., on Tuesday, March 17th, Dr. George O. Welshman. **Williams.**—In Hazleton, Pa., on Tuesday, March 10th, Dr. Joseph R. Williams.

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Original Communications.

MODERN TECHNIC IN URETHRAL STRICTURE.

BY CHARLES H. CHETWOOD, M. D.,
New York.

Stricture of the urethra is a classical subject, embracing an extensive field. I will attempt to call attention only to some of its important phases in an effort to elicit discussion along lines of special interest, and to bring forward some points that have particularly impressed me from personal observation. With this end in view, the following subdivisions of the subject will be briefly touched upon: 1. Etiology; 2, diagnosis; 3, nonoperative treatment; and, 4, operative measures.

ETIOLOGY.

Stricture is congenital or acquired, or both. A congenital narrowing may of itself be insignificant, but may act in the presence of acute inflammation as a predisposing factor to the acquired form of this malady. Acquired stricture may be gonorrheal or traumatic, or both, and denotes a cicatricial narrowing, due to the submucous formation of fibrous tissue. We recognize some strictures as soft and elastic, others as hard and unyielding. Some cover a very small area, while others involve an extensive deposit of nodular tissue around the urethral lumen. Why is this? it may be asked.

That is a question worthy of discussion. Why is it that one individual suffers from prolonged, chronic inflammation, and then, after the expiration of many years, a narrowing of the canal develops that involves a limited area only, while another, in a much shorter period, presents an extensive deposit of fibrous tissue that may be felt as an indurated mass by palpating the portion of the canal in which it is situated? Why is it that one stricture may be dilated readily, from a very tight opening to almost the normal size of the canal, causing but a small amount of bleeding, whereas another stricture will yield but slightly to an attempt at dilatation, and then only at the expense of laceration and free bleeding? Why is it, again, that one stricture, upon being dilated, will seem to retain the advantage gained for a long period, while in other cases it is almost impossible to maintain a satisfactory calibre for functional purposes, except by almost constant passage of instruments?

When we consider that today stricture is much less prevalent than formerly, we arrive at an explanation of the common causes in the production of this lesion. Gonorrhea is recognized as the primary factor in most cases, but all cases of gonorrhea do not lead to stricture. In the past, when this inflammation was treated with excessively strong and irritating injections, when the virulent bacterial factor was not understood, injury of the delicate mucosa, and consequent infection and extension into the submucous region, involving the muscularis and follicular glands, were of common occurrence. If this injury happens to be slight, the effect is likewise slight; if the injury is extensive, the area involved becomes all the greater; and if the virulence of the microbial cause has abated to a considerable degree before the injury is inflicted, the resulting irritation is not great, whereas, when the virulence is at its height extensive infection of the anatomical structures is more likely to ensue.

A brief outline of the morbid changes furnishes an explanation of the chief types of stricture formation. The sequence is, first, inflammation, then cicatricial or scar formation; first, round cell infiltration in the submucous tissue, then more or less extensive cellular proliferation. If the rent in the mucosa is slight, only a small area may be involved, but if the damage is of greater degree, possibly allowing the tissues to be inundated with decomposing urine, then, as a consequence of the pent up septic condition, in an attempt perhaps on the part of the bloodvessels to wall off the infected area, it is not difficult to understand that an extensive indurated focus develops, which focus eventually becomes a hard unyielding mass of fibrous tissue.

DIAGNOSIS.

In the discussion of diagnosis, we will refer more particularly to instrumental examination, as it is by this means that stricture is detected. About sixty per cent. of the cases may be said to be between the bulbomembranous urethra and the penoscrotal angle. The remaining cases are about equally distributed throughout the other parts of the anterior canal. Stricture of the prostatic urethra anterior to the vesical orifice is of rare occurrence as a result of gonorrheal inflammation, but cicatricial contracture of the neck of the bladder is a common sequence of gonorrhea of the deep urethra or of the interior of the bladder, a condition which should be recognized and appreciated.

In exploring the urethra, we must keep in mind the well known existence of points of anatomical narrowing, and in detecting the presence of stricture of so called wide calibre, not overlook the diminished distensibility at these points. Such are the point of narrowing at the meatus, followed by a definite widening, two or three inches beyond the meatus a point of diminished distensibility, and another point of anatomical narrowing at the bulb

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membranous junction, in front of which is a widening, the sinus of the bulb.

In conducting *the instrumental examination of the urethra*, what is the most important consideration? It is, beyond dispute, a due regard for the delicacy of the parts to be examined and the danger from rough use of instruments. To give special emphasis to this important consideration is not amiss, even to men of wide experience. Observation has taught that it cannot be kept too constantly in mind. The antiseptic precautions in the care and disinfection of instruments and preparation of the patient are important, but insignificant compared with the necessity for gentleness in manipulation.

It is not intended to describe the ordinary examination of the urethra, as the process is a familiar one, but rather to lay emphasis on two particular points, both well known and generally recognized, yet in spite of this fact often overlooked. The first, in connection with a tight and apparently impassable stricture of the anterior canal, which resists the efforts to introduce an instrument of any size, small or large, is the fact that the patient is able to urinate in a small stream, or by drops, which indicates that closure is not absolute and complete retention has not occurred. When following a careful and painstaking trial, examination has been prolonged, by desisting from further attempts until two or three days later, often it will be found that entrance through the stricture is easier than at the first trial, when passage was not accomplished, provided due tenderness is observed. The second observation is of still more common knowledge, but overlooked even by experienced practitioners, that an impassable obstruction at the bulbomembranous junction may be due largely to spasm rather than fibrous contraction, and when small instruments fail to pass, a well lubricated full sized solid instrument will find its way into the posterior canal without difficulty.

Finally, it is important to learn, not only the calibre of the constricted area under examination, but also the character and extent of the tissue forming such constriction, as upon that observation may depend the selection of treatment, operative or non-operative.

Retention of urine, incomplete or complete, is the natural consequence of stricture. Acute retention, though more likely to accompany stricture involving the deep urethra, may occur as a result of reflex spasm in connection with obstruction in the anterior portion. Some patients are more prone to the occurrence of acute retention than others, on account of neurotic temperament, or any factor likely to produce hyperemia of the mucous membranes overlying the compressor urethræ muscle. Chronic retention, on the other hand, like that accompanying prostatic hypertrophy, is due to slow and progressive unyielding obstruction, attended with reduction in the expulsive power of the bladder.

TREATMENT.

In selecting the treatment of stricture of the urethra, to cut or not to cut, "that is the question," and the choice between dilatation and cutting should, if possible, be made in favor of the former, when its employment is consistent with the attainment of the highest possible object of treatment, namely, reestablishment of the normal calibre of the canal at the seat of the stricture and maintenance of the same for as long a period as possible in a given case. The size of the stricture is not necessarily a guide in the determination of this question, for, as already stated, some very tight strictures can be easily dilated, whereas others of large calibre, although yielding readily to dilatation, recontract so rapidly that nothing approaching satisfactory relief is possible until cutting is resorted to. The textural character of stricture is somewhat of a guide in the selection of treatment, although not of absolute reliability. Soft stricture in the inflammatory stage will respond always to treatment by dilatation and local antiseptic measures. Hard strictures are fibrous in character and have passed to the stage of chronic inflammation with attendant scar formation. Here, again, dilatation should be attempted first in uncomplicated cases. The measure of success depends upon the extent to which the contraction can be distended and maintained and the effect of such result upon coexisting conditions. Therefore, strictures of either small or large calibre which, though easily dilated, promptly recontract, rendering it necessary to reintroduce the dilating instruments too frequently, demand the more radical method of cutting, in an attempt to prolong the period before recontraction occurs; and this brings up the question frequently asked, Is stricture curable? The answer is often given in the negative, because many recurrences exist after either continued dilatation or cutting, but, inasmuch as the object is the removal of that which gives stricture its significance, namely, the narrowing of the urethral tube and its consequent interference with the urinary flow, it may be stated that the cure of stricture is satisfactorily effected for a long period, often permanently, when the proper means are adopted with a careful observance of the rules.

TREATMENT BY PROGRESSIVE DILATATION.

Failure to observe the injunction with respect to the gentle handling of instruments results, not only in various degrees of infection, but, as is well known, in the production of false passages in any portion of the canal where stricture is situated, more commonly at the point of the bulbomembranous junction or in the prostatic canal. As a result of such defective instrumentation, infiltration of the corpus spongiosum has occurred, followed by general septicemia. We have operated in cases where one or more false passages have started at the membranous junction and followed upward behind the prostate and beneath the bladder, and have seen cases in which not only the urethra but the rectum also has been punctured.

We shall not take time to enter into the consideration of simple and uncomplicated cases subjected to treatment by dilatation. Suffice it to say, that observation has revealed that when instrumental dilatation is employed, the treatments are as often repeated too frequently as they are neglected altogether, and in many instances cases will yield more satisfactorily, become less irritable, and remain so for a longer period, when the intervals between treatments are reasonably long. Cases have been treated by dilatation, for example, that did not seem to advance when frequent treatments

were given, that gained much more when the intervals were doubled and even quadrupled. It must be added, however, that each case is a law unto itself, and must be governed accordingly.

Those strictures which are impassable, or very difficult to enter, yet in which it is desirable to apply treatment by dilatation, present an important group, and demand special attention. To dilate in such instances, it is necessary to find the aperture through the constriction. This, seemingly, may be passable to the urinary flow, but impassable to even the smallest instrument. Here, again, as above stated, when there is not complete retention of urine, and when the instrument can be partially engaged, but not passed through the obstruction, by desisting until irritation has subsided, another attempt, several days later, may be rewarded with success. A filiform bougie, when it is the only instrument that will pass through the stricture, may be tied in place for twenty-four or forty-eight hours, and will often open the way for progressive dilatation.

The endoscope has been used to find the orifice of stricture in such difficult cases; and when even this fails, an accessory to this method has been suggested by Dr. W. S. Schley (*Surgery, Gynecology, and Obstetrics*, February, 1913) as follows: A blunt pointed, round hypodermic needle, attached to a long barreled syringe, is introduced into the orifice of the stricture, as far as gentle pressure will allow, and a few drops of cocaine adrenaline mixture injected. In a few moments it is possible to introduce the needle still further, and the injection is repeated until a No. 5 French ureteral catheter may be substituted for the needle, when the injection is made through it, advancing the instrument after each injection. The catheter, being flexible, adapts itself to the irregularities of a twisted canal.

With respect to the relative advantages of the more modern dilator and the smooth solid steel instruments, the tendency is to adhere to the latter in the majority of cases, where the size of the stricture has reached above 20 French; when below that, the flexible woven instruments are preferred. There are cases, however, in which the use of the dilators in the more distensible portions of the canal is exceptionally advantageous for expanding the tube beyond its original limits.

TREATMENT BY OPERATION.

We now pass to the consideration of operative measures; and to this end, we must briefly refer to *internal urethrotomy, external urethrotomy with a guide*, and *external urethrotomy without a guide*.

Internal urethrotomy. In the first place, it is proper to condemn the employment of internal urethrotomy behind the anterior urethra, unless the same is combined with perineal section. There may be exceptions to this rule, but it has not been found necessary to observe them. Such exceptions should be only in expert hands and in very slight lesions, but it is a dangerous teaching to promulgate, that internal urethrotomy behind the triangular ligament is a warrantable procedure in most hands, and in the greater proportion of cases, the percentage of risk of hemorrhage and infection is great. The different instruments employed for internal urethrotomy, generally speaking, are:

(a) Those which cut from behind forward, of which we may speak of two types, one designed to make a single cut, the median superior incision; and one to make several small incisions.

(b) An instrument designed to cut from before backward; of this there are also two types, based upon the same distinction, one being designed for a single cut and one for multiple incisions.

Upon the general question of internal urethrotomy and a consideration of the single or multiple incisions, it seems that not sufficient importance has been given to the latter technic. Guiard (*Annales des maladies génito-urinaires*, 1908) describes his method of internal urethrotomy and the instruments for performing it, in which operation a superior median incision is made with a Maisonneuve urethrotome, which is allowed sufficient depth to sever completely the scar tissue, as at the site in question there is minimum risk of infiltration. Following the superior incision, a number of minor lateral and inferior incisions are made with a specially designed instrument, composed of metal cylinders containing blades in the stem, which are capable of being projected one millimetre each.

For performing the single incision from behind forward, the best known instrument is the so called Otis dilating urethrotome. Its use entails the existence of a calibre of not less than 18 French. It has been objected to on this account, and because of the length and depth of the incision, which involves considerable distance beyond and between the stricture points.

Multiple incisions, either independent of or accessory to the single superior incision from behind forward, require an instrument designed upon the pattern mentioned by Guiard, the original type of which is that of Civiale, the principle of the latter being an olive bulb or stricture finder upon a staff, in which is hidden a median blade or blades, unsheathed at will to incise the constricted portion at the point detected during the withdrawal of the bulb. The writer is responsible for one of the many modifications of this type of instrument.

For cutting the urethra from before backward in the class of cases in which the stricture is below 18 French, the Maisonneuve instrument is an effective means at hand, as it simply requires the introduction of a very small guide, upon which the knife is passed. The length of the incision has also been objected to in this instance, as well as the size of the knife. Albarran has improved this instrument by designing a knife that may be elevated or depressed at will. With this single superior incision may be combined the supernumerary lateral and inferior incisions, as suggested by Guiard, or the multiple incisions may be employed exclusively, as suggested by H. McClure Young (*Journal of the Missouri State Medical Association*, February, 1913), who describes a very ingenious instrument, combining the advantages of most of the others. It may be used for strictures of wide or tight calibre. For the latter there is a detachable filiform guide, or the instrument may be fed over a whalebone bougie. The main portion of the instrument

is a grooved staff and a cutting apparatus, surmounted by an indicator which is provided with a series of olive bougies of graded sizes, also grooves to direct and determine the extent to which the urethrotomy blade may go. The grooved staff is passed through the stricture, as for a Maisonneuve instrument. The cutting apparatus is then inserted with the smallest bougie until resistance is encountered, at which point the knife is advanced and a small incision made. After any other tight areas, detected by the size of the first olive, have been cut, a larger size olive is introduced somewhat laterally to the previous one, and this method is continued until the calibre of the urethra is brought to the desired size, cutting being done only at the site of any constriction, and solely of unhealthy tissue, the normal portion being spared. The author points to the fact that many shallow incisions, containing sound epithelium between them, usually undergo repair as promptly as one deep incision. This brings up the question whether a constricted area is less likely to retract after one deep incision which completely severs the fibrous tissue, than after multiple incisions of not sufficient depth to accomplish completely that object. The answer is that probably some strictures will do well with one method, and some with the other, according to the extent and depth of the strictures.

In the aftertreatment of internal urethrotomy, I find it good practice in most cases to employ the indwelling catheter for from twenty-four to forty-eight hours.

External urethrotomy, with and without a guide. The ordinary operation of internal urethrotomy with a guide for deep urethral stricture is, generally speaking, an easy one, and demands no detailed description. In simple cases, where the stricture is of fairly wide calibre, the so called buttonhole operation is adequate, which involves placing the knife in the perineum upon a grooved staff, followed by a grooved gorget, and a blunt bistoury incision, after which a straight metal catheter and then the finger is introduced. The operation is completed by an internal urethrotomy. This is suitable for cases of slight stricture. Where there is much contraction and extensive area involved, in order to save the bulb and avoid troublesome bleeding after the operation, it is preferable to cut the central tendon of the perineum with a pair of scissors, and the rectourethralis laterally. Then, holding the bulb well forward with a retractor, the membranous urethra and apex of the prostate are exposed, and a free incision may be made or resection accomplished with little bleeding thereafter, which is a very important consideration.

We now come to the most important of all, the so called impassable deep strictures in which it is impossible to introduce a guide of any sort before operation. Some of these are impassable to both urine and instrument; others are able to permit the passage of small quantities of urine, but will not admit an instrument of any size. These cases involve the exceedingly difficult operation of external urethrotomy without a guide, which so often has tried the patience and forbearance of skilled operators. The temptation to make a blind thrust of the knife after futile attempts at finding the urethra, and the danger of such a procedure, need not be dwelt upon. Different expedients have been suggested, and in many cases operators have been compelled to abandon the pursuit of the urethra through the perineal cut and to resort to suprapubic section in order to perform retrograde catheterism. While the writer has not yet been forced to adopt this last expedient, many cases have taken an immoderate amount of time before the desired end, of finding the urethra, was attained.

In performing this operation without a guide, we might divide the undertaking into two parts: First, finding the urethra behind the strictured area; second, finding the lumen of the strictured portion between the sections anterior and posterior thereto.

Young, of Baltimore, has urged with good reason the technic which is a part of perineal extraurethral prostatectomy as a means of approaching a stricture which is impassable to any guide. This involves, as already mentioned, cutting the central tendon and the rectourethralis, and, by blunt dissection, exposing the vertex of the prostate and the membranous urethra. By this proceeding, the first requirement of the operation is necessarily accomplished, that of attaining the posterior section, but in some instances a great deal of time is expended in following from this point forward the anterior section. In some instances it is easy to feel the mucosa upon the roof of the posterior canal, and to feed forward a probe pointed guide, upon which an incision may be made, sufficiently wide and far up the canal for the introduction of the urethrotome. In other cases, however, where the canal is tortuous and extra tight, this may prove a difficult procedure.

A. B. Cecil, of the genitourinary service of the Johns Hopkins Hospital (*Journal A. M. A.*, May, 1913), has suggested the ingenious expedient of injecting a solution of methylene blue into the urethra, as it has been demonstrated that such a solution stains the canal throughout its entire course. A mild solution of one half of one per cent. is employed, and the injection is made with moderate pressure, to be retained for about five minutes, when the urethra is washed out with sterile water. The perineal incision is made as usual, through which the course of the urethra is readily detected by the blue stain, as well as any pouching or false passages.

As already stated, the operation of external urethrotomy without a guide is beset with so many difficulties and has involved the expenditure of so much time in certain cases, that the saving of time and the simplification of the technic have received much thoughtful consideration. I am proud to state that, to my mind, by far the most valuable solution of the difficulties arising out of this situation has come from my own clinic at the hands of my able coworker, Dr. D. A. Sinclair. The principle of the technic has been thought out by him, and the credit is hereby accorded. The application we have mutually employed. The result is a complete mastery of the difficult situation of impassable stricture and a very ready accomplishment of the improved operation.

It is desirable that the patient retain the urine for several hours previous to operation. This, obviously, is an unnecessary observation in cases of retention. The perineum and pubis are both prepared. The operation may be done under general or local anesthesia, as preferred. With the bistoury, a small incision, about one quarter of an inch, is made in the skin in the median line, at the level of the pubic bone. A cannula and trocar, about 16 French calibre, the length of the cannula being about 3.5 inches, is thrust just above the pubis into the bladder, after the latter has been distended, either by retained urine or by forcing an injection of antiseptic solution through the urethra. When the trocar is removed, a rubber tube is attached to the cannula and the bladder is emptied. The interior of the bladder is then washed with boric acid solution as before a cystoscopy, and six or eight ounces of the clear solution are retained in the cavity. Now, through the cannula is introduced the telescope of a straight female cystoscope, with indirect vision lens, of just the proper size to fit the cannula. Through this the internal orifice of the bladder is viewed with absolute clearness. The distal aperture of the cannula is applied directly to the internal orifice, the cystoscope removed, and a curved flexible obturator is introduced through the cannula, and, as has been found, easily fed into the posterior urethra. A gloved finger introduced into the rectum may now determine the satisfactory accomplishment of this proceeding. In some instances the obturator may be forced well into the membranous urethra; in other cases it is well to have a filiform guide attached to the instrument, so that it may extend beyond to the anterior section of the canal. The patient is now placed in the lithotomy position. Incision is made as usual in the median line, the apex of the prostate and the membranous urethra are found with immediate dispatch, and the second requirement of the operation, that of finding the anterior section, is accomplished as already described, greatly facilitated in cases in which a flexible bougie can be passed onward at the time the obturator is introduced through the cannula.

In conclusion, it may be stated that appreciation of the difficulties in general of external urethrotomy without a guide, and reflection upon the simplicity of this method, cannot fail to recognize in the latter a distinct advancement in urological technic.

25 Park Avenue

THE ADVANTAGES AND DISADVANTAGES OF QUARANTINING HOSPITAL WARDS FOR MEASLES.

By Edwin E. Graham, M. D.,
Philadelphia,
Professor of Pediatrics, Jefferson Medical College.

In the consideration of this subject, I wish it understood that I thoroughly believe in certain quarantine regulations for measles, and the object in writing this paper is to consider what measures are wise and necessary and whether the quarantine regulations in force in Philadelphia could, with advantage, be modified. We all, doubtless, agree that:

1. Measles is very contagious and the contagion lasts from the earliest catarrhal symptom to the fading of the rash. 2. Fifty per cent. of cases occur in the first five years of life and forty per cent. in the second five years of life. 3. Almost invariably, all children exposed to the disease, if not protected by a previous attack, contract it. 4. In the young and delicate infant it is a dangerous disease. 5. There is very little danger in robust children over three or four years of age, if properly treated. 6. Eighty per cent. of deaths occur in children under five years of age. 7. The contagion of measles is short lived outside the body. It is a contact disease and is less likely to be carried by a third person than is scarlet fever or diphtheria. 8. Second attacks are rare. 9. By closely watching all exposed children, Koplik's spots can usually be detected, one, two, or three days before the rash, and the child removed before it becomes a very active source of infection. 10. The disease occurs in epidemics separated by periods of two, three, or four years. During these epidemics, all exposed children in schools and communities contract the disease, and the epidemic ceases, only to reappear when a large number of children not previously exposed are again affected in a fresh epidemic.

How do these facts apply especially to hospitals in Philadelphia? As a result of the epidemic character of the disease and its extreme contagiousness, it naturally follows in a community such as Philadelphia and it close environment, which includes a population of over two million people, that, as soon as an epidemic of measles appears, cases occur in all hospitals where children are admitted. The period of incubation, eleven days for catarrhal symptoms and fourteen days for the rash, is so long that few, if any, hospitals can keep all children long enough in observation wards to avoid the development of measles in one or more of the children's wards, and, as a result, the children's wards are quarantined for two weeks. Before the two weeks have expired, a second case often develops, which means a quarantine of two weeks more, and often before this two weeks has elapsed, a third case of measles occurs. This is especially apt to occur in a large ward of twenty to twenty-five beds, and as during this time no new cases are admitted, the temporary usefulness of that hospital is crippled.

Unfortunately, it commonly occurs in Philadelphia that, owing to the epidemic nature of measles, not only one hospital, but practically all the hospitals in the city that admit children, are also at the same time quarantined, and it may be almost or even quite impossible for a child dangerously ill with some acute disease to be admitted to a hospital. It has been my experience at Jefferson Hospital that when our children's wards are closed with measles, on several occasions it was impossible to get a child, acutely ill, into other hospitals with children's wards, because these hospitals were also quarantined. This is, of course, a rare occurrence, but it has happened and will probably happen again.

The ideal children's hospital should, of course, have small wards of, say, ten beds each; these wards should be built as units, with a separate exit, and

might, by specially constructed doors, be blocked off from the rest of the hospital. If a case of measles develops in such a ward, it can be removed and this small ward quarantined. This is the ideal condition and we will endeavor in the near future to have such wards, but meanwhile, can nothing be done to increase the usefulness of a children's hospital during an epidemic of measles?

A number of modifications of quarantine could be suggested. Some, in my opinion, are advisable, others may, or may not be. It may serve a useful purpose to present some of the ideas that have occurred to me as regards the treatment of children in a ward where a case of measles has broken out. The idea is to reduce the number of patients in a large ward as rapidly as possible and transfer them to a small ward.

1. If the parents desire to take a child home, ought we not to allow them to do so, provided the child is over three or four years of age and can secure good medical attention and nursing at home? The board of health should be given the names of such children.

2. If a child has previously had measles and is convalescent, ought we not to send this child home without consulting the parents? It will not carry the disease and it is sufficiently advanced in convalescence to leave the hospital. Of what possible benefit is it to keep this child in a hospital for three to six weeks?

3. If it is an only child, it should be sent home whether it has had measles or not, provided it is over three years of age and can, if measles develops, receive good medical attention and nursing at home.

4. If it has not had measles and the other children of the household have had measles, the child should be sent home if over three years of age and the conditions at home are favorable for good nursing and care.

5. All other children should be kept in strict quarantine in the hospital for fourteen days after the rash appeared in the measles case. These children may, however, be transferred to a room or small ward, and the large ward scrubbed, fumigated, and immediately put into use.

6. If a child over three or four years of age has previously had measles, it may be admitted to the ward, if acutely ill, the parents being informed that it will be exposed to measles.

7. Have all the beds in the ward separated by glass partitions; if a case of measles occurs, remove the measles patient, also the child on either side of the measles patient, scrub up the ward over a space of twenty feet around the measles patient, and continue to admit patients to the ward.

If the foregoing modifications of the quarantine laws were adopted, it would result in a more rapid clearing of the ward, and during an epidemic of measles, would greatly increase the efficiency of the children's wards.

The following suggestions would greatly assist in lessening the probability of the exposed children contracting measles:

1. Separate all children in the ward by glass partitions.

2. Isolate the child on each side of the measles patient and thoroughly scrub the ward within twenty feet of the measles case.

3. Examine every child in the ward for Koplik's spots, coryza, rash, and fever, and isolate all suspicious cases.

4. Instill into the resident physician an enthusiasm to recognize measles before the rash is fully developed.

5. A careful history of each child should be taken before admission, especially as to all previous illnesses, and the possible recent exposure to any contagious disease.

6. As measles is largely a contact disease, each patient should have his own thermometer, bed pan, wash basin, etc.

DREAMS.

By A. L. Benedict, M. D.,
Buffalo, N. Y.
Editor, Buffalo Medical Journal.

So much space is being filled with a discussion of dream psychology, that it seems pertinent to raise some questions for consideration. Why should a reading audience with a strong tendency toward practicality, if not toward actual materialism, accord a respectful and credulous attitude toward the conception of a subconscious self, when it pays little attention to the real self and may doubt its existence? Is the subconscious self more susceptible of scientific, especially of medical scientific study, than the ordinary theological conception of a self? To what degree is the implication substantiated of a subconscious self separate from the ordinary self; in other words, to what degree is the conception of a dual personality or mentality correct?

With special reference to dreams, is there a valid reason for supposing that they have a significance different from the ordinary, conscious expressions of psychic states?—with the obvious qualification that allowance be made for the distortion of facts which must be conceded to dreams, however they are regarded. Do dreams really represent a sort of psychic vivisection, comparable to physiological experiments in which inhibitory nervous connections have been severed, as is implied in the theory that the dream represents fundamental mental characteristics more truly than ordinary conscious expressions? To what extent does dreaming occur? Is it continuous, as some contend, who explain lack of dreams by the fact that they are forgotten when full consciousness is regained?

Is there a constant rapidity of dreaming, or does the rapidity of the succession of events in dreams vary as in ordinary observation of one's environment or ordinary thinking? Has the rate of mental action, either pseudoafferent (sensory or perceptive) or pseudoefferent (dreams of motion, work, writing, calculating, etc.), any direct dependence upon physical states, actual afferent and efferent impulses, etc.? Is the rapidity of dreaming as extreme as in the classic illustration of a dream of a lifetime of events begun when the subject recollected upsetting a water bottle and ended by awakening before the water had run out? Is this question essentially more scientific than the popular notion that a person dream-

ing of falling, will die if he does not awake before he strikes the ground?

The majority of the present discussions of dreams attach special importance to sexual factors, and, for some reason, seem to dwell particularly on forms of sexual perversion or of criminal intent, even reading these factors into dreams which, in themselves, do not seem to warrant any such explanation. A recent article on dreams adopts a broader tone, but seems to limit dreams to the expression, often in a recondite way, of a dominant wish or aspiration, and follows the same line of interpretation of dreams not prima facie expressions of a wish. It must be granted that dreams do attest sexual thoughts, and are very likely to display dominant desires and tendencies, either in a frank or recondite manner. But is this statement any more true of dreams than of conscious mentality and voluntary expressions of opinion?

The writer is not especially fitted to answer any of these questions, either from a study of patients or subjectively. Nor does the raising of these questions imply anything more than a reasonable scepticism as to recently expressed views, such scepticism as it is well to hold toward any hypothesis pending the accumulation of evidence.

In one sense, however, the very inadequacy of subjective experience and the fact that such experience as has been acquired by study of the experience of others has been casual and not limited to neurotic cases especially, may be the best reason for stating this experience, not as establishing any general theory, but merely as an item of the general, collaborative evidence upon which a final conclusion must depend. The writer does not usually dream at all, or else no recollection of dreams survives awakening. When such recollection does persist, it is usually merely of the fact of having dreamed, but without the ability to recall anything of the dream. In the infrequent instances in which a dream is remembered, it is usually trivial in nature and of no apparent significance. Only rarely are the dreams vivid and practically never grotesque, horrifying, distinctly agreeable or disagreeable, or interesting in any way.

Usually, both in subjective and observed experience, dreams seem to depend largely on afferent stimuli, as of cold or heat, pressure, pain, or upon the recollection of experiences received during the day, or at least recently, or else upon the continued mental action along the same lines which have been pursued in the day's work. It seems to be very exceptional, however, that such stimuli of dreams result in the bizarre exaggerations popularly and even scientifically (?) considered characteristic. For example, if during sleep the person becomes cold, he does not dream that he has discovered the north pole, although he may probably dream of some sort of ordinary outdoor exposure. If, on the other hand, the room becomes too hot, he does not dream of being in hell, even if he has recently done some evil deed or attended a revival service. An ophiophobe may revive the sensation of seeing a snake, but not usually of being bitten by one or of having it touch him. A person of strongly sexual nature does not seem to be particularly predisposed to sexual dreams, perhaps less so than one who represses the manifestation of such tendencies in waking hours. Even an ejaculation does not seem to be necessarily accompanied by a sexual dream, at least to a degree sufficient for remembrance.

Strong desires, emotions, and experiences may or may not be manifest in dreams, either in the way of ungratified wishes, repetition of disagreeable experiences, etc., or in the opposite way of fulfillment, escape from trouble, etc. So far as subjective experience with dreams is concerned, it has seemed that the kind of dream that ought naturally to be expected has been lacking, and that the stimuli which produced the dream were of a trivial nature, which did not make any particular impression during their actual experience. In a general way, however, dreams certainly do represent matters of personal interest and of personal experience.

A further point to which collective study should be directed is the frequency with which mental problems, literary, mathematic, mechanic, etc., unsolvable during the waking period, have been carried to completion in dreams. The writer has never been so fortunate as to have this kind of dream and has seldom or never encountered a case of the sort, although instances are frequently mentioned in literature.

228 Summer Street.

THE MISCHIEF OF FREE MEDICAL SERVICE.*

An open letter to the Honorable George McAneny and the Honorable George Cromwell, the Committee on Inquiry into the Departments of Health, Charities, and Hospitals in the City of New York appointed by the Board of Estimate and Apportionment.

By William S. Gottheil, M. D.,
New York.

Section vii of your admirable *Report* relative to the care of out patients calls attention to many defects in the Public Ambulant Medical Service, which every physician who has ever worked in a dispensary is well aware of, and which are evident to a greater or less degree, in every institution of the kind under our present dispensation. Yet you mention merely incidentally a fault which is at the basis of dispensary inefficiency; and no amount of extension of facilities for treatment, limitation of classes, or elaboration of records will effect any radical change if that is not rectified. Thirty years of experience in dispensary work in Manhattan, including the founding and administration of more than one institution of the kind, extending from Fordham University Clinic on the north to Beth Israel Dispensary on the south, may be my excuse for definitiveness of view and plainness of utterance.

The prime source of failure in the public ambulant medical service in this city is the fact that the community is attempting to get something for nothing. Well, it doesn't and it can't. Taking the arbitrary figure of 10 as representing the value to the community of any free dispensary class, 1 at the most

*Read at the West Side Physicians' Forum, [illegible] 1914.

may represent the value of the equipment no matter how elaborate and perfect it may be, and 1 more the drugs and appliances supplied; 8 parts may well represent the money value of the professional services by the physicians. Taking professional fees at their lowest this can easily be proved to be an understatement rather than an overstatement of the facts; and I claim positively that four fifths of the ambulant medical charity of this city is done by a small and underpaid professional class, and only one fifth by the community at large. It is easy to be philanthropic with other people's labor and time.

Now the dispensary physician will be paid in one way or another like every one else; or his work will be worth just what it costs, which is nothing. He is apparently not to be paid in money; for the minute stipends now given in a few dispensary classes would not pay for the conscientious and efficient services of a third clinical assistant; and you need experts in a specialized out patient department, as each of them is today. Like the corporation director, who gets no pay or a nominal fee for his services, the dispensary worker will get his pay indirectly if he cannot do so directly; and it is legitimate, right, and proper that he should do so. Whether this is for the best interests of the institutions in question or for the community at large, is a question that the public and you, its representatives in this matter, must decide for yourselves. Now there are just two ways in which the dispensary physician can take his pay.

1. *In experience.* The public clinic is the postgraduate field of development for the embryo specialist; and in some cases this may be regarded as a partial return for services rendered. But this entails, on the one hand, large classes of patients, for most cases are entirely routine, of no interest or value, and attention to them is merely unrewarded drudgery. The attendant must see fifty or 100 cases to get the three or four of value for study or for experiment. The rest must be treated by routine, examined quickly, and prescribed for hurriedly. On the other hand, the better dispensary doctors you obtain, the more this kind of work will predominate; the qualified specialist goes to a dispensary only to see cases of interest that may be presented at a medical society or published in a medical journal. But is it not about time that this plea of "experience" as a reward for labor in medicine was relegated to the limbo where it belongs? Propose it for a moment as pay to the lawyer, the dentist, the engineer, or even the parson in their early professional life, much less when they have become experts in their various lines. Even the apprentice dressmaker gets pay while she is learning her trade; so does the apprentice nurse, lawyer, and plumber. No, gentlemen, experience may be of value, but it is a ridiculous pretext of return for the services of skilled men who have spent years at college, medical school, and hospital, who are certified by the State as qualified to practise medicine, and who have in many cases already spent half a lifetime in professional work.

2. *In getting private patients.* The dispensary authorities necessarily frown upon this form of remuneration, since it is directly opposed to their interests. Yet I hold that it is absolutely legitimate; and I know that it is done in every ambulant medical institution of which I have any knowledge. I have told every chief of staff and every assistant that I have ever had, to refer to their office any patient that they felt certain could pay for services. The dispensary authorities should do this, but they don't. It is therefore an advantage for the practitioner who, for one reason or another, seeks service in a dispensary, to select one that is near his office. In this way only can he get even indirect pay for his work.

On page 32 of your *Report* you say: "Members of the medical staff usually give their services free. . . . It is questionable whether this system of gratuitous service insures good results." No, gentlemen: it is unquestionable that it does not insure good results; it does not insure the kind of care and attention that the dependent sick should have. And what is more, it never will do so. Nevertheless, unsatisfactory and inefficient as the service often is, the community is getting all that it is entitled to, and more. The medical profession has been "milked" for its benefit for generations; and if the lacteal fluid is watery and shows signs of giving out, it is for you to devise a remedy. The only one, in addition to the increase of facilities and limitations of classes that I can find in your report, is the utilization of the dispensary material for teaching purposes. That is no remedy at all; that is only shifting the burden a little onto another section of the profession. And I cannot allow you to forget that the teaching institutions are perhaps the main offenders in this question of dispensary abuse; they exercise perhaps the least discrimination, impose perhaps the heaviest burdens on the profession, and are, after all, like most of the other medical institutions of this city, purely money making devices in the interest of a few favored individuals.

If it is a recognized part of our communal duties to take care of the sick who are unable to do so properly for themselves, and I certainly believe that it is; if you want your out patient departments attended to by men versed in the special diseases to which the various classes are devoted, and I think that you do; if you intend each sufferer to receive the care and the attention and the time and the forbearance that he would receive in the private office of an efficient and conscientious doctor; then, Gentlemen, you must advise all the reforms indicated in your report, and some more. The burden of medical charity must be placed where it belongs, on the community; and a community like ours, that collects and spends the revenue of a kingdom every year, will not be loath to assume it when once it realizes its necessity. Nor will it be content, I hope, long to permit the imposition of its own and proper burdens on a small and uninfluential, and, sorry as I am to admit it, divided and almost voiceless professional class.

Let me beg you, Gentlemen, to add to your report the distinct recommendation that since medical services to the sick poor, if they are to be efficient and conscientious, must be paid for like any other services; and that since volunteer service is provedly unsatisfactory, and seems likely to remain so; and that since taking advantage of the unorganized state of the medical profession to exploit its members, is unworthy and undesirable; you believe and recommend that they should be properly paid for.

DIFFERENTIAL DIAGNOSTIC VALUE OF CYCLIC INDICANURIA IN GASTRO-INTESTINAL DISEASES.*

By Gustav Baar, M. D.,
Carlsbad, Austria.

Indicanuria is the abnormal excretion in the urine of potassium indoxyl sulphate. According to Jaffé we find, physiologically, in the twenty-four hour urine, from 4.5 to 19.5 mg. of indican, in which quantities it can hardly be determined by the usual tests. It seems proved beyond a doubt that the indican is derived from the indol formed mostly in the gastrointestinal tract by nitrogenous putrefaction; that the nucleus of the indol group, tryptophan, is contained in proteids, and that the tryptophan is converted into indol by the aid of putrefactive processes.

According to the origin of this indol, we distinguish between extraintestinal, metabolic (histogenous), and gastrointestinal indicanuria. The first type is represented by the indicanuria which we encounter in fetid bronchitis, cavernous pulmonary tuberculosis, gangrene, etc. On the whole, this type is rare compared with the intraintestinal type. Whether or not we may distinguish a metabolic type is still undecided. The most frequent type is the gastrointestinal type, and this I prefer to divide (according to its duration and variation of excretion) into the (a) transitory, (b) constant, and (c) cyclic or recurrent type. Before I enter upon my theme—the cyclic type—I must consider briefly the general etiology of this symptom, indicanuria.

Indol (C_8H_7N) is almost always present in the intestinal tract, but it depends, first, upon its quantity; and, second, upon the condition of the gastrointestinal wall, whether or not this indol will enter the circulation and be excreted in the urine. The indol absorbed from the intestinal tract is not excreted as such; it is first oxidized to indoxyl (C_8H_6NOH) and then combined with sulphuric acid, when it appears in the urine as the potassium or glycuronic acid salt of indoxyl sulphate.

To consider indicanuria as the expression of gastrointestinal autointoxication and to explain diseases which in former years have been termed neurasthenia as cases of intestinal autointoxication, has been the habit of innumerable authors in the last two decades; still we must concede that the actual foundations for the entire doctrine of autointoxication are very "wabbly."

Speculations on gastrointestinal autointoxication have become a wild flight of fancy. Chronic gastrointestinal conditions, often vague and indefinite in their symptomatology, but making the patient miserable, have been designated as "gastrointestinal autointoxication"—another cloak for our ignorance. I even assert that this whole doctrine has not risen above the level of an hypothesis, in spite of the brilliant speculations in which the French school especially has indulged. The history of medicine teaches that theories, in spite of their apparently brilliant foundations, have to be changed frequently, even entirely abandoned, with the progress of our knowledge. The empirical facts, however, which are not based upon theoretical foundations, have remained true ever since the time of Hippocrates, and this thought was my guiding star when I started, six years ago, by routine examination for indican in every one of my hospital as well as ambulant cases, to bring some new light into the chaos of the different doctrines as to the etiology of indicanuria.

Let us see first what was alleged in the literature at that time. If you ask any practitioner for the cause of indicanuria, he will undoubtedly answer constipation, and it is really remarkable how few authors deny the importance of constipation in the production of indicanuria. In the 2,092 cases which form the basis of my monograph on indicanuria, cases with constipation showed a positive indican test 736 times, and a negative test 820 times, while those without constipation showed positive tests 2,600 times, a negative test 2,503 times. This means that the nonconstipated patients showed indicanuria much oftener than the constipated ones. If constipation had anything to do with indicanuria, I certainly could not have obtained such figures, and this material alone should be sufficient to demonstrate finally that simple constipation does not cause indicanuria.

Hartwell insists (*Journal of Experimental Medicine*, XVIII, p. 139, 1913; quoted in *Journal A. M. A.*, November 29, 1913) that simple stagnation does not yield a poisonous substance. According to him, the only poison present in intestinal obstruction arises from the damage secondary to the obstruction or from an altered function of a normally appearing mucosa. In explanation of the experience of the opposing school, Hartwell points out that in their experiments, injury to the intestinal wall has been common, as judged from the necropsy records, and that in the absence of such damage there is no primary toxemia.

Another assertion was that the presence of hydrochloric acid in the chyme has great influence upon the production of indicanuria. While some thought that the free hydrochloric acid, by its antiseptic qualities, prevents the formation of indican, others—among these Noorden—taught that the hydrochloric acid has no disinfecting effect beyond the stomach. Among my own cases were 276 which showed hyperchlorhydria. They were tested for hydrochloric acid three hours after Leube's test meal, or one hour after Ewald's breakfast, and only those cases which showed a titration above 70 were considered hyperchlorhydria. The indican tests made in these cases turned out positive 560 times, and negative 550 times.

We can easily see that from such figures we have no right to allege any influence whatever of the hydrochloric acid *per se* upon the formation of indican. In parenthesis I wish to state that among these cases of hyperchlorhydria, those without constipation showed indican twice as often as those with constipation, which certainly speaks very much against constipation as a causative factor of indicanuria. These include all cases of hyperchlorhydria, whether they were of purely nervous, toxic (nicotine), or reflex origin (gastroptosis, nephroptosis, cholecystitis, appendicitis, ulcus ventriculi, ulcus duodeni).

If one considers only the nervous and toxic cases,

*Read before the Medical Association of the Greater City of New York, March 16, 1914.

ninety in number, there were eighty positive and 134 negative indican tests, which certainly shows that the hyperacidity *per se* cannot prevent indicanuria. I am well aware of the difficulty of making a positive diagnosis of purely nervous hyperacidity ever since Moynihan, Bier, and other authors pointed out the rarity of this condition, and the frequency with which chronic ulcers of the duodenum go under the diagnosis of nervous hyperacidity. I will admit, therefore, that many of these ninety cases may be latent cases of duodenal ulcer, and, as I shall show later, the presence of indicanuria in these cases will be easily explained. I wish to call attention, however, to four cases of purely nervous hyperacidity (published in detail in my monograph) which never showed indicanuria; they were cases of functional hyperacidity, a symptom which has been very brilliantly described by Eppinger in his studies on vagotony. These cases of functional hyperacidity or nervous hyperacidity show no indicanuria, while the other cases of hyperacidity, mentioned above, as due to a pathologicoanatomic lesion of the gastrointestinal tract, do show indicanuria. From these findings alone I certainly could not have concluded that hydrochloric acid has anything to do with the appearance or nonappearance of indicanuria.

I went further and studied those cases which showed no hydrochloric acid at all, the achlorhydria cases, and made the observation that all of them, without exception, showed indicanuria as long as free hydrochloric acid was absent from the stomach contents. They constitute to a larger extent the type of constant indicanuria. As soon as the irrigations of the stomach with a one to 1,000 solution of nitrate of silver brought about the reappearance of hydrochloric acid in the gastric juice, the indicanuria disappeared. In quite a number of these cases high colonic lavage removed the indicanuria and with it disappeared the symptoms of so called intestinal autointoxication, as Combe and others of the French school have described them, viz., pale face, dry skin, cold feet and hands, dizziness, headaches, sleeplessness, nervous depression, neuralgia, migraine, rheumatic pains, fetor ex ore, acne, seborrhea, furunculosis, and urticaria.

In this group belongs a case of pernicious anemia (Case XXI) in a man of seventy-two years of age, which I mentioned in my paper read before the meeting of the American Medical Association, November 5, 1910, in St. Louis. The patient showed very excessive indican in the urine, in spite of normal bowel movements, as you see from the chart, before we started the high colonic irrigations with one per cent. ichthyol solution, which continued for sixteen days. With the institution of the irrigations the indican disappeared from the urine and the hemoglobin simultaneously rose within the next five weeks from thirty-eight to seventy per cent. (Sahli), the number of red blood corpuscles from 2,500,000 to 3,200,000. Though I am aware of the fact that abrupt standstills or improvements in the course of pernicious anemia are nothing unusual, nevertheless I am inclined to hold the mode of treatment responsible for the improvement of this case, as we hardly could doubt the etiological nexus between the intestinal toxins and the blood picture. The constant indican of this case pointed to an abnormal putrefactive process within the intestinal tract, and I am of the opinion that this latter very probably was to be explained by the achylia and achlorhydria. While a chyme examination has not been made in this case, we do know from the literature that atrophic gastritis is a pretty constant symptom in cases of pernicious anemia.

In this group, too, belongs the case of a hypoplastic woman (Case XXXV), who was under my care for years with the diagnosis of "depressive neurasthenia" until repeated examinations for indican in the urine revealed a case of constant indicanuria. With the institution of high colonic lavage with one per cent. ichthyol solution, the whole clinical picture of the case changed, and the woman, who for years made the impression of a classical case of depressive neurasthenia, changed her whole disposition within a week in a most remarkable manner. The indican which I found constantly during the previous months, had disappeared from the urine.

There was a group of cases in which I found indicanuria constantly present without being able to trace it to any source whatever. They comprised thirty-two out of the 2,092 cases studied. The majority of these thirty-two cases showed the earmarks of Bartell's hypoplasia, and one is tempted to postulate the theory that they suffered at the same time from a hypoplastic condition of the secretory glands, and the mucous lining of the gastrointestinal tract. If one considers that these cases (thirty-two out of 2,092) constitute only 1.5 per cent. of all the cases studied, whereas the diagnosis of neurasthenia is certainly made oftener by the general practitioner than in only 1.5 per cent. of all cases coming under his observation, it is evident that the neurasthenia symptom complex is only rarely caused by intestinal autointoxication.

When in the course of my studies on hyperchlorhydria the fact became evident to me that all cases showing symptoms of gallbladder, appendix trouble, or ulcer of the stomach or duodenum, with the recurrence of these symptoms, always showed indican in the urine, whereas with the disappearance of those symptoms the indican disappeared from the urine—I call this most frequent type of indicanuria, the "cyclic" type—I determined to find out what influence pathologicoanatomic lesions of the gastrointestinal tract would have upon the appearance of indicanuria.

The experiments of Herter and Wakeman proved that the fresh mucosa of the gastrointestinal tract, as well as liver cells, kidney cells, muscle and brain, have the power of forming such a firm combination with indol that it cannot be recovered on distillation. This suggested the idea that it must be some lesion of the gastrointestinal mucosa which allows the indol to enter the portal vein and appear in the urine as indican; that as long as the mucosa, which constitutes the first line of defense against the enterotoxins is in normal condition, we should find no indicanuria; that as soon as this first line of defense is broken through, we should find it. Such proved to be the case. All cases of chronic cholecystitis, chronic appendicitis, chronic ulcers of the stomach or duodenum showed indicanuria in the

stage of their recrudescence, while the indicanuria disappeared when there were no clinical symptoms present. I formerly called attention to the fact that most cases of cyclic indicanuria result from pathological lesions in the gastrointestinal tract, while a certain number of cases of cyclic indicanuria, in nervous affections, usually, are due to secretory disturbances.

Case XLIII was that of a man, who, for twenty years was considered by some of the best physicians in the country to be a neurasthenic. Repeated examinations convinced me that he had pericholecystitis adhesiva. This case showed a cyclic indicanuria which, like all others of this type, did not yield in the least to the usual procedures, such as dietetic treatment, lactobacillin, acidolepepsin, etc. In the course of one year thirty-nine urine examinations were made; twenty-two indican tests, which were made in the course of fourteen weeks previous to the operation, showed sixteen times a very positive reaction; out of the seventeen indican tests which were made in the nine months following the operation, only two showed moderate indican, while the rest were negative; out of nineteen bile tests which were made before the operation, only four were negative, while the others were positive; out of twelve bile tests, which were made after the operation, ten were negative and only two—in the course of the first fourteen days after the operation—were positive. With these results of the urine examinations coincides the clinical picture of the case; before the operation the patient was never free from pain in the epigastrium, sensations of heaviness below the ensiform process, dryness of the throat and mouth, thirst, painful gas accumulations in the lower and right and left lateral portions of the abdomen, as well as underneath both costal margins, paroxysms of pain in the right chest, right shoulder blade and right rib arch, without vomiting. All of these symptoms disappeared—with the exception of the hyperacidity of this typical vagotonia case—after the operation.

In Case XLIV the whole gallbladder surface was adherent to the gastrocolic ligament and omentum; we made thirty-eight urine tests in the course of fifteen months; twenty-four of these urine tests were made in the eight months previous to the operation; nineteen of this number showed excessive indican, while of fourteen urine tests, which were made in the eight months following the operation, only four showed moderate indican, the remainder being negative. These urine findings agree completely with the clinical picture of this case; the constant pains in the region of the right costal margin, the burning in the epigastrium, the bloating sensations across the abdomen, and the mucous colitis, which were present before the operation, disappeared entirely after excision of the gallbladder and the appendix. We can see in this case also that neither dietetic nor the lactobacillin treatment had any influence whatever upon the cyclic type of the indican excretion.

Case XLVI showed in the nine months of our observation, out of twenty-seven indican tests, eleven positive; this latter always during the paroxysms of fever, vomiting, pain in the epigastrium or mesogastrium or appendix or ascending colon; in the intervals, however, and after the removal of the appendix all of the fourteen indican tests made were negative; we see from this case also, as we could in the cases mentioned above, that the therapy—removal of the constipation by dietary means, etc.—had not the least influence upon the indicanuria, but that the indican was dependent upon the reappearance of the pathological process in the appendix and disappeared only after the latter has been removed.

Case LVIII illustrates the same type, beside supporting experimentally my view that the formation of the intraintestinal indol and the appearance of the indican in the urine depend on the permeability of the common bile duct. The patient had gallstone colic on the twelfth of April, a clay colored stool, and dark urine; that day the urine contained no indican, but considerable bile; the stool remained clay colored from the day of the operation (April 18th), all bile and probably the pancreas secretion also draining through the wound (480 to 720 cm. *pro die*); the papilla duodeni was occluded by a rough surfaced, conical gallstone, which broke through, a few days later, into the duodenum, accompanied by a chill, fever, vomiting, and meteorism, and was found in the feces on April 29th. Out of seven indican tests, which were made during this period of complete occlusion of the common bile duct, five were negative, a result which is in conspicuous contrast with the number of positive indican tests during the period, when the bile and pancreas secretion did flow freely into the duodenum. The positive indican test of April 21st may be explained by absorption of the toxic material from the wound on account of insufficient drainage, the considerable bile in the urine of April 19th pointing also to this latter fact.

The cases of purely nervous mucous colitis *per se* never showed any indican. If the mucous colitis, however, was only symptomatic, for instance in latent cholelithiasis or appendicitis, we always found a cyclic indicanuria! I succeeded in a few cases of cholecystitis in making a positive diagnosis at the time when there were no typical clinical gallbladder symptoms present; the diagnosis was proved a few years later by operation. Cyclic indicanuria thus can be used as a differential diagnostic symptom between nervous and symptomatic mucous colitis.

The cholecystitis cases (including the cholelithiasis cases) show that out of fifty-four cases (eleven were operated in and the diagnosis proved, while the remainder may be considered as certain on account of gallstones having been found in the stools, or the cases showing the classical picture of gallstone colic) the indican test proved positive 418 times and negative 223 times. A similar relation between positive and negative indican tests was found also in twenty-two cases of appendicitis, of which fourteen were proved by operation—the indican tests were 116 times positive, fifty-four times negative. The fact of the recurrent indicanuria became so forcibly conspicuous that it was decided to examine every case repeatedly for indican, no matter for what reason operated in, before and after the operation. Quasi experimentally, I proved this on those cases of gastroenteroanastomosis, appendectomy, enteroanastomosis, cholecystectomy, cholecystostomy, gastroanastomosis, all of which showed

indican in the urine from the first day of the operation up to the time we could assume that the intestinal wall was healed.

An article which appeared in the *Archiv für Verdauungskrankheiten,* from the clinic of Strauss, in Berlin, states that it is not the pathologicoanatomic lesion of the gastrointestinal tract which leads to indicanuria, but the blood which, oozing from those lesions, enters the tract, and putrefies within. I have since examined my operative cases, which I kept for weeks on meatless diet, made simultaneously indican tests of the urine and benzidine tests for latent blood in the feces, and found that the benzidine tests were often positive for weeks, while the indican tests became negative as soon as we could assume that the gastrointestinal wall had healed—usually after ten days; I have found, vice versa, that, treating ulcers of the stomach internally on a milk diet, we obtained for weeks a positive benzidine test, a negative indican test, as soon as the clinical symptoms of the florid inflammation of the lesions disappeared. I have fed five healthy people with blood sausage without seeing any indican produced by the blood thus ingested.

In abdominal, and especially in pelvic operations in which adhesions had to be separated or the intestines had to be handled very much, the mechanical trauma was sufficient to produce indicanuria. Similar operations, where there was little or no trauma to the bowel wall, did not give rise to it.

In other words, every lesion of the gastrointestinal mucosa, no matter of what character it was, produced indicanuria. If then, my contention was correct, that simple lesions of the gastrointestinal mucosa are sufficient to cause absorption of the ever present indol and subsequent indicanuria, then indicanuria must be present in all the following diseases: Tuberculous peritonitis, carcinoma of the cardia, of the pylorus, of the liver, of the colon, stricture of the rectum, ileus, and diffuse peritonitis. My own work and that of others has demonstrated the presence of indicanuria in all these conditions. In fact, all anatomic lesions of the gastrointestinal tract show indicanuria.

The indican excretion in these cases does not always imply increased nitrogenous putrefaction for, once the first line of defense is broken, indican will appear in the urine, even though there may be only moderate amounts of indol present in the intestinal tract; these small quantities are absorbed by a healthy mucous membrane without causing any indicanuria, whereas with a lesion of the mucous lining they will enter the circulation and cause it.

In conclusion, I wish to point out the practical results of my studies. Instead of guessing as to the diagnosis in those cases which come under our observation with indefinite gastrointestinal symptoms, we should: 1. Regularly test the twenty-four hour urine for indican and, after having made twenty or thirty such tests, we should, with due consideration of all other clinical symptoms, be able to make a diagnosis. One single test has no value at all and it is only the repeated examination of the urine for indican which will throw additional light on those obscure lesions of the gastrointestinal tract which for years may not show any definite symptoms. 2. We must institute for a few weeks high colonic lavage, to ascertain that the indican does not form in the lower colon. 3. We must test the stomach juice for achlorhydria to exclude this possible cause of indicanuria.

If we make these tests we shall find that we can divide the indicanuria cases into three types: 1. Transitory, due to some passing anatomic lesions or temporary insufficiency of gastrointestinal secretions (psychic). 2. Constant, due to permanent or progressive anatomic lesions of the gastrointestinal tract, or to permanent insufficiency of the gastrointestinal secretions (earmarks of hypoplastic constitutional anomaly). In these latter cases—about 1.5 per cent. of all—we can remove indicanuria and many of the clinical symptoms by high colonic lavage. 3. Recurrent, due to some recurrent anatomical lesion of the gastrointestinal tract. High colonic lavage will remove this type of indicanuria only when the lesion is in the colon; if the lesion is higher up, however, high colonic lavage will have no influence whatever. Cyclic indicanuria in these cases is often the only positive evidence of gastrointestinal lesions which require surgical interference (chronic appendicitis, cholecystitis, ulcer of duodenum or stomach).

The acceptance into our diagnostic armamentarium of the symptom of cyclic indicanuria will, I trust, help to reduce the number of so called "intestinal neurasthenics" and "hypochondriacs"; reduce the mortality of gallstone operations on account of an earlier diagnosis of atypical cases; prevent ulcers of the stomach from remaining unrecognized until perforation takes place or cancer forms on their bases; cure a large number of "nervous" hyperacidity cases by removing the anatomical substrate of the same.

A CONTRAST IN PSYCHANALYSIS: THREE CASES.*

By Tom A. Williams, M. D., C. M. (Edinburgh), Washington, D. C.,

Corresponding Member, Societies of Neurology and Psychology, Paris, etc.; Neurologist, Epiphany Dispensary.

Three cases are reported, in order to illustrate my belief that, first, a complete Freudian analysis does not, in itself, lead to a cure; secondly, that a cure may be affected without a complete analysis, provided the analysis reaches the genetic difficulty, and this without any reference to so called "subconsciousness"; and thirdly, that readjustment may be accomplished without any reference to the sexual.

The term "subconsciousness" has been much abused; but its consideration here would lead us too far; suffice it to say that the submerged memories which determine so much of our conduct and belief can scarcely be said to act in themselves, but rather by the inferences which are drawn from them and of which the subject is more or less aware, although he will not always admit their influence. His denial, however, is largely like that of a woman denying that she seeks a husband or of a

*It must be understood that in the elucidation of the cases here set forth, many more details presented themselves than are set down. But unfortunately many of these escaped record, not so much from the absence of a shorthand transcription, as from the fact that their elicitation demanded an amount of attention which precluded note taking.

politician denying that he is looking for an office. If not merely conventional, the disclaimer is dictated by a feeling of shame or by a dislike for the confession which is so good for the soul. A frequent declaration of my patients is somewhat as follows "I do not know why I am talking like this to you; I would not dare to thus reveal myself to anyone else; I hardly know them myself," etc. Now, this confession has not been obtained through hypnosis or other special means. In one sense the patient does not explicitly feel her revelations until they are completed. But could the fact that her ideas require for clear formation their focusing into a definite statement justify us in calling them subconscious? I think not; for the process does not differ from the clarification of thought engendered by writing, speaking, or other attempts at precision of ideas which before that may have been only in adumbration. Such was the means by which a patient of Flournoy (Automatisme téléologique contre le suicide, *Archives de psychologie,* 1908, reviewed by me in the *Journal of Abnormal Psychology,* 1909), whom some clinicians would have called a hysteric, made clear to herself for her salvation from suicide, the thoughts which lingered in the back of her mind, but which had been temporarily overshadowed by her despair in having to repulse her child for fear of infecting it. In a dream state, she had a vision of a dear friend leading her away from the water into which she was about to throw herself. Now, although the conversation she imagined was purely hallucinatory, it was none the less valid as a representation to herself of ideas which took this method of formulation. The mechanism is commonly used by automatic writers, crystal gazers, etc., who have recourse to a consultation with an oracle which they sometimes believe to be extraneous in source. Others, however, are equally mystical in the way in which they conceive it to be another self, subliminal or subconscious. By these means the suggestive influence of their lucubrations is greatly increased; but psychologically the process is exactly the same as discussion, thinking aloud or reflection. "Coconsciousness" is the name given by Prince (*Journal of Abnormal Psychology,* 1909), to some of these states which he believes to be completely dissociated from the personality. As a rule, however, any disunion of separate streams of thought can be quickly overcome by the most simple means, provided that the observer does not acquiesce in the patient's reluctance to face certain unpleasant facts, which he often declares "he does not know" and soon persuades himself that "he cannot know."

On reading various accounts of psychanalysis we cannot but be struck at the suggestions of cure implicit in the physicians' remarks. When the factors allegedly pathogenic are found early, the effect is apt to be small; but when a long time is required, the summation of therapeutic suggestion inevitably tends to wear down the psychopathic habits and to effect what is called a cure, by the well known process of psychological substitution so well shown forth in the work of the hypnotic school. What occurs is a reconditioning of reflexes by a series of hedonic associations in replacing the algedonic suggestion which had induced the morbid picture by a mechanism clearly described in my paper on Affection and Ideation in Traumatic Neurosis, *Journal of Abnormal Psychology,* June, 1910.

Case I. *Failure of psychanalytic procedure in spite of the unmasking of sexual complexes.* Woman, aged thirty years, from Philadelphia, at the instigation of a Washington physician, came to consult me for what she described as "hell for eight years." She could not remain alone, and yet a crowd drove her wild. She felt like two separate persons. She was so discouraged she "felt she would give up and let the worst come." She feared herself to the degree that during the last year she must put out of the way any heavy object with which she might kill someone. The misery in her head was such that she felt she must scream or knock her head against the wall. She feared she would become insane.

Physically, there were no abnormalities, except that she had always been constipated, like her mother's family; but as a child she would not go to the closet unless made to (for the benefit of the anelerotic school); and this not because of any pleasure in postponement, but because she wanted to run away and play.

The history she gave was that, eleven years before, during menstrual pain, she suddenly thought she might kill someone; and ever since she had been beset by this terror. When questioned, she recalled that the same thought had occurred when she was thirteen years old, while reading a story in a storm. She had been a great reader and had eagerly followed the details of the great Borden case, in which a girl was acquitted of the charge of killing her father and mother. This had not caused the patient any horror, although she was very imaginative. For example, while in bed, at seventeen years of age, the thought of spinal meningitis "almost made her feel her heels drawing up to her head." Her imaginings had generally been pleasant day dreams, until she was nineteen. Since then she had had only unpleasant thoughts. But a terrible maniac in terror of death, whom the doctor took her to see in the poorhouse when she was nine, did not at the time move her. When about five, she was taken to see an insane aunt. At nine, she was heartbroken for the prince with whom she played Cinderella. At fourteen, a girl at a picnic hit her in the back, which she believed would cause insanity. At eleven, she visited a poorhouse asylum, the horrible sights and odors of which impressed her only as curious. At seven, she learned from a schoolgirl of sex and birth, which she was told, with demonstration, was accomplished by cutting the mother's abdomen with a knife. At this time, she was initiated into homosexual practices. As she liked the girl, she thought it nice to talk of such things later; she could not remember the procedure. In recalling this, she suddenly recollected that when she was just over four, a terrible boy took her sister and herself into the yard, made them take off their clothes and parade before him; she was terrified, and wanted to run away, as she felt it was wrong and she disliked the boy and was frightened of him because he had threatened to cut off her ears. She did not tell this; as the exposure gave her much shame, and as the aunt with whom she lived had inculcated excessive modesty. As she grew older, she thought the birth story incorrect and became very curious and talked much with other schoolgirls about the matter, but it did worry her very much. But when a boy exposed himself to her, she was horrified; for she was frightened of what he might do to her. But she wished to try, and so proposed to a small boy, who refused. At sixteen, she fell in love with a fast girl of twenty-one; but her aunt found out what they were doing, and broke off the connection when she was eighteen. She was heartbroken, but later was disgusted with herself. Although she engaged in much sexual talk, her dreams were not of this subject, of which, however, she had no shame.

Latterly she had thought much of a newspaper incident in which a man had buried his fingers in a woman's neck and breasts so that the next morning she walked over a cliff to destroy herself; and the patient wondered how she could be sane enough to have sense for that. Rape and such outrages, of which she read, seemed to impress her greatly; so that she failed to lock her door lest her family might not be able to help her if someone came through the window. She would have a vision, while falling asleep, of a rough, brutal, very large, skulking negro under the

bedclothes, smothering the cries which she was too paralyzed to utter. This occurred in dreams, but she always got help or stopped the dream before the actual assault occurred. On other occasions, she dreamed of actual intercourse, but not with any particular person, although she knew it was not the colored man who came while falling asleep. She was not ashamed of what were just dreams. She never imagined such situations while awake. Her father, an invalid whom she rarely saw, had died a year and a half before; and she grieved much for him, having a pain at the heart and a catching of the breath which lasted until she married. No significant associations could be obtained concerning him, however.

As a tiny child of four they read to her *The Thorn Fortress,* which described people hiding in a cave from soldiers, going out only in the dark; she was so afraid she would not let them finish the story. Dreams with this patient were the starting point of many questions and associations. From one in which there was great dread of a railway trip alone, questions led to the confession with much emotion that she feared assault by a Pullman porter, and that the assault would be exceedingly cruel. This led to associations which made her confess a wish to be cruel, which she had fought against harder than anything, because her impulse to kill might get the better of her. She then admitted that she obtained a curious thrill from reading of violence. It was only recently that she had avoided this reading because of the fear that its suggestions would overcome her scruples.

After these revelations, she appeared thoroughly to appreciate her sadistic tendencies, and that her terrifying dreams and her dread of violence were eruptions of this tendency. After the last conversation, she expressed herself much relieved, as she had been previously for half a day after revealing her hemosexual practices. As she had to return home I advised that the satisfaction of her repressed impulse might be secured by the cooperation of her husband, a tall, powerful, energetic man. She returned to Philadelphia, full of hope, to take a trip with her husband. After eight weeks, she wrote me that she never in her life felt worse. I have heard on two occasions since, that she continues to suffer as much as before, and is quite incapable of remaining alone.

It is my belief that when an idea is *directly* responsible for psychoneurotic symptoms, that that idea is in reality susceptible of consciousness without special procedures, that is to say, the patient already knows it.

Case II. *Attempted suicide; psychogenesis: therapeusis.*—A farmer's son, aged twenty-two years, after some weeks of moody behavior, threw himself into a creek. He was quickly rescued by his brother, who reproached him severely. This did not deter him; for a few weeks later he swallowed laudanum. This led to his removal to a sanitorium, where, after a few weeks, he crushed and swallowed an electric light globe. Later, he gained access to a medicine cupboard, and again swallowed laudanum. So his friends in despair brought him to a doctor friend in Washington, who immediately asked me to see him.

Examination showed no physical disorder; but I discovered that there existed a serious psychological situation, which no one had even suspected—much less attempted to penetrate. The boy was so ashamed of himself, although still determined to commit suicide, that it was hard from his whispered utterances to reveal the facts from the analysis of which was furnished the very simple explanation of his distressing predicament. To state the position briefly; upon this boy had devolved since the death of his father, the management of his mother's farm, but a younger brother had succeeded in interfering a good deal with our patient's plans, much to his mortification; and when also neighbors' meddling was acquiesced in by his mother, the situation became intolerable, as he had already failed in an attempt to work happily in another environment which he tried for over a year. Suicide seemed the only escape. The manner in which the psychological situation was ascertained is best judged from a transcription of the questions and answers of part of the examination: "What is the matter?" "Stomach troubles, if I could get well I would be all right." "Have you any pain?" "No." "Why are you then complaining?" "Because my bowels do not work." "Why take so much laudanum?" "Because I think I should be better off if dead." To a further question, "If I could be cured I would be content. I could not stand being worried by my brother of nineteen, and my sister who is twenty-four, and my mother. I want to go and work for myself. I should get on better." (He had forgotten to mention his sister and when she was mentioned, he stammered.) "They pick on me, for example, if I get up too early; and I always feel I could not do the things I want to do. But when I went to California, I felt uneasy even when working alone. I have been dissatisfied all my life. I do not know what my trouble is or what I have done different from any one else." To a further question, "I went to school." "Have you done anything with which to reproach yourself?" "No. I think there must be something wrong with my brain." To a further question, "The whole case is imagination." "Why do you think so?" "I do not know." Since when have you thought so?" "Since four years ago, when neighbors would interfere with what I had done on the farm, for example, in planting the corn, people would comment upon it and my mother would take their advice and overrule my way." "Why do you take it so hard?" "Because I have poor judgment."

The inquiry was then pushed with regard to his relations with the opposite sex. He declared that he had liked their society, although he did not dance and was not "immoral" as he called it, but he confessed his bashfulness and also that he thought girls were not worth spending so much money upon; he did not think they were dependable, and he had decided not to marry because of seeing so much of married life; he had never cared for any particular girl, although he had often desired them, but had not the "face" to make advances toward what he thought to be wrong, as at school, boys and girls had been separated; besides the girls laughed at his timidity. Accordingly, he told the other boys that their indecent talk was wrong, and was laughed at for his pains and made still more bashful and ashamed. However, he had dreamed of erotic situations, which made him feel ill; and he feared it would injure his health. As a small child, his dreams had been terrifying, such as falling and being killed, or being run away with by horses; but these had not troubled him since.

There had been no spontaneous diurnal emissions; but he had provoked them until he was eighteen, and had then ceased to do so, as other boys often teased him about it, and said that he would be impotent, as he had ruined himself; hence he was very much ashamed.

The failure of this boy to stand up for himself was due to his own shame at the onanism he had practised and his fear that it was injuring his mentality; so that he was not able to stand up against other boys, by whom he was much teased, in consequence of which he withdrew from social life, especially where girls were concerned, and became taciturn and irritable.

He had to confess that if he could be well of what he thought incurable, viz., "a hopeless mental inferiority which masturbation must have caused," he would be willing to live, and would like to work.

Treatment.—He was assured, and examples were given him to show that he was quite mistaken about the effects of onanism; and he was asked to think over until the next day the explanation I gave him concerning the genesis of his shame and timidity, meanwhile promising not to attempt suicide until he had seen me again.

The next day discussion was resumed; until, in less than a week, the boy could be trusted alone, not only in the hospital grounds, but in town. He went home in ten days, perfectly cured, and has been at

work and in good spirits ever since, now nine months ago. The treatment was conducted in a general hospital; and the maximum of freedom was allowed the patient from the first, the greatest tact being urged upon those who nursed him.

Remarks.—It should not be necessary to point out that much of what the patient said, about renouncing marriage for instance, was a mere excuse for his own inadequacy and shame. But it is necessary to assert that the sexuality *qua* sexuality was not the important feature in this case in spite of its conspicuous featuring in the history. The really efficient pathogen was incapacity of social adjustment due to shame at his own failure in social adaptation, because of the halfheartedness of his attempts, due to erroneous notions about the consequences of his conduct. The patient actually knew all the facts; but from ignorance he was unable to interpret them. When their import was understood, he learned to adapt himself in only a few weeks. The case is again an instance of conceptual error of which the affective situation is merely consequential, and spontaneously disappears upon rectification of the false notions which produce it.

Unless conscious I believe that an *"idea"* cannot cause symptoms directly. The term, idea, is used here in its widest sense of a constellation of impressions, both rational and affective, with their proper conative import. One has no right to attribute to a subconscious state an idea now forgotten, which has in the past eventuated in habits of thought and feeling so inconvenient as to be called pathological. Even although the forgotten idea may be resuscitated by appropriate association, and even although its revelation may form the best starting point for reconditioning of affective responses; and even although this reorientation may be the unaided work of the patient, yet the effective factor is the finding of the initial conditioning idea only so far as it furnishes the most logical starting point for psychological reconstruction, which is really the efficient factor in therapeutics and is often effected without the finding of the exact mechanism of the pathogen. The following case is instructive in this respect.

CASE III. *Cure of chronic fear.*—A lawyer, aged twenty-eight years, gradually withdrew himself from society of friends, later denying himself to all but one. He abandoned work and began to neglect food. At night he would pace the floor for hours. He looked haunted and ashamed. He twice took steps toward suicide. There is no need to enlarge upon a picture so familiar. Suffice it to say he was cured. He was most distrustful of the possibility of cure, as he had, six months previously, visited specialists who had failed to benefit him. As he described it, their procedure seemed to have been somewhat crude attempts at hypnosis with suggestive assertions denying his symptoms and their cause, which he had declared to be a state of fear. It was mainly in the presence of other people that his fear came over him, and he was much ashamed all the time because of this fear. It was quite different from the timidity of adolescence. As a small boy he was noted for his bravery and would fight against the boys of the neighborhood.

The cause of his fear was unknown to him; and he believed it was hereditary, as one of his brothers was worse than himself and had become a wanderer whose whereabouts would be unknown for months at a time. The patient had been fighting against this fear, since his college days at least, and had tried playing football to make him courageous, but without effect; so when he graduated he plunged into a camp of rough lumber men and took his part as a laborer with the rest. Six months of this gave him still greater admiration for courage, but in no wise improved his own. He then returned to civilization and plunged into his studies and office work, hoping to attenuate the fear which gripped him; but instead, he gradually lost mastery, and after six years of struggle fell into the state in which he came to me.

After a physical examination, which disclosed no important features except great loss of weight and a high degree of erethism, psychological exploration was begun by my stating to him that either he was, as he believed, a physical degenerate or there was some psychological cause for his fear; in which latter case the discovery of that cause might lead to the finding of a means for its removal and the ending of his fear. He was then told to search his memory for fear-bearing experiences in early life, but could think of none. Then period by period running back from his college days had attention turned upon it; until the patient recollected to have been morbidly fearful at each time; until finally he declared that he had always been afraid. He was then asked what incidents of his early childhood had particularly frightened him, and at first recollected nothing. Wild animals, darkness, fire, and people were each in turn presented as possible factors. But it was not until the remembrance of a near relative was recalled that the key of the situation was found. It seemed that this individual's ideal of up-bringing was the hardening process, and that the theory he held was that every boy's moral welfare required the knowledge of fear. These two objects were combined in such a procedure as throwing the lads into the water while they were unable to swim, to fish them out only when they were going down almost breathless. In winter a favorite method was to throw the boys while asleep in the morning into a bank of snow and snowball them home to the door. Another procedure was to chase the children with a stockwhip from the front door to a tree in the distance. The result of all this was not hardening but a breeding of chronic fear in these two lads. The patient's recollection of these performances reached back to the age of four years. But he had completely put out of his mind these incidents, and indeed failed to take into consideration his cowardice as a young boy, believing it to have originated in the high school.

TREATMENT.

When the source of the fear was discovered, the patient declared that he did not see how this knowledge would benefit him. It was then explained to him that his fear was merely a physical habit and not an instinctive reaction. He was told that habits can be reformed if intelligent effort is employed, but that he was in no condition to begin reformation of habit until he had slept and eaten regularly for some days. When he objected that he had long since given up narcotics, as he was worse than before taking them, he was told that I never found it necessary to give narcotics and that I should induce sleep without them and that after this he would be less unwilling to eat.

Accordingly, treatment was begun by my visiting him in bed and hypnotizing him into sleep. He slept eighteen hours, and then carried out the dinner program we had previously arranged. Hypnosis was performed three times in all, but not on consecutive nights. In the meantime reeducation was

begun. To make a long story short, this consisted merely of a reconstruction of the fear situation of his infancy, and the pointing out of the nonnecessity of the fear sequence which had occurred, and the insistence upon the possibility of reconstruction of his reactions toward himself and the world. Numerous instances of the dependence of emotion upon idea[2] were given; and he was instructed concerning reconditioning the reflexes as investigated by Pavloff and Crile; and he was shown the physiological perniciousness of the fear impulse.

He struggled with the situation bravely; but I left him alone after what proved too short a period, namely, four days, and he lost courage and began to relapse, until a friend drew my attention to the situation after a week. We then resumed relations, as he felt the need of help. After four more days of reeducation, the tide turned; and he obtained control of his fear. He celebrated the occasion by an impressionist account of his situation from which I extract what follows:

"I've won! I've licked him! I've driven away the beast that was driving me mad. As soon as I knew just what he was, and why he came, I poked him with my finger, and he busted. He's not gone entirely, he's crouched growling nearby, waiting to jump on me again. And occasionally he gives me a twinge, such as some men get when passing a looking glass. I laugh at it. I'm on my back no longer, I'm fighting—I'm fighting now. And my battle's all but won. I wrote my last letter on Friday. Yesterday I had fun. I got up singing in the morning, dressed carefully, and went down town. I ate my breakfast slowly, but made the waiter scurry. I roamed the streets. A week ago I slunk into a restaurant, because I was fearfully hungry, unshaven, unshorn, and unkempt, and the waiters all laughed at me, and I hurriedly gobbled my food, and crept trembling out again. I went back there yesterday and bullied the whole crowd. One of them came up grinning, and I looked him in the eye, and the grin changed to a smirk. I kept him standing waiting, while I read the menu through. And I said, "Bring me this and this and that—and Waitah, hurry! and don't you dare to not to do so always." Ten days ago I sneaked up to the Sherman statue, by moonlight, and looked at the statue of a soldier, longingly, and wondered how he could be. Yesterday I walked up to him laughing, and wished I could shake his hand.

Reaction.—It is over a year now since the foregoing account was written, and the patient is now successfully practising his profession and is still happy, not to say buoyant. At first indeed he was so expansive that I suspected a periodical psychosis in which my intervention was a mere coincidence, but that that is not the case seems to be shown by the gradual subsidence of the extravagant behavior which the patient at first showed. Besides, another instance of still greater disturbance of this kind recently came to my attention, wherein no such doubt could arise. It was that of a woman of twenty-eight years, whose vision was restored by removal of congenital cataract. Dr. Reid Russell, of Asheville, the operator, informed me that the patient's reaction was almost maniacal in her joy at her new sensations and at her unaccustomedness to the adaptations they required. So I interpret this young lawyer's extravagance of behavior to his incapacity, at first, to adjust himself to the new manner of looking upon the people who surrounded him, his former ever present dread having been displaced by a disregard almost contemptuous, with a consequent effervescence of the ego disconcerting to those who previously knew him.

This case is an instance of:

1. An anxiety state induced by mechanism other than that postulated as essential by some psychanalysts.

2. The induction of an emotional state directly from an idea.

3. The forgetting of the initial circumstances which induced the concept which governed the life so detrimentally.

4. The revelation of the initial circumstances by an analysis so elementary as to be no more than a particularly intelligent amanesis in that it neutralized scepticisms and antagonisms and proceeded with patience.

5. The failure of catharsis *per se* to alleviate the condition.

6. The need of reeducation,[3] that is, psychological reconditioning, for the remaking of the mechanism.

SUMMARY.

In this paper I make no criticism of the psychopathological doctrines of others[4]; I merely present three clinical facts. The first of these shows the complete therapeutic failure of the Freudian analysis of the anxiety state in which a homosexual woman's sadistic impulses were revealed.

The second case shows the therapeutic success of an explanatory analysis without any resort to the doctrines which imply subconscious mechanisms, and where the importance which might have been attached by some students to the prominent sexual factor was not accepted, and where an enlightenment not at all esoteric was in my opinion the predominant factor of cure.

The third case exhibits once more the power of enlightenment in an affective situation of which the patient was not sufficiently aware of the genesis, although his ignorance must not be attributed to any such mechanism as the facile psychology of the subconscious of which we have heard so much: for in this patient, too, although the pathogenic notions were not themselves activating, yet they had induced a psychological habitus, the affective element of which the patient had failed to overcome by indomitable determination over a large number of years, whereas it was readily transcended when understanding was given.[5]

1705 N Street.

[2] Williams, Role of Affectivity and Intellect in Traumatic Hysteria, *Journal of Abnormal Psychology*, June, 1910.

[3] The hypnosis used was merely incidental to secure sleep upon certain occasions.

[4] See Williams, *Transactions of International Congress of Medicine*, 1913, abstract of remarks to be later published in full.

[5] It has been alleged that recovery of many cases I have reported, is largely due to the personality of the operator; and someone might say the same concerning the two young men here presented. But aside from the fact that I have never practised suggestive therapeutics, of which from the first I have been mistrustful, I entirely lack as an operator the authoritative or impressive manner which imposes by suggestion one's own idea upon patients. On the contrary, the patients I see are often mistrustful of me at the commencement of their case, not only because they have failed to benefit under many previous physicians, but because of the extreme simplicity and entire absence of affectation, impressive appliances, or studied effects in the consulting room. So it would be hard to see how any result I obtained is due to causes other than the ratiocinative enlightenment in which I believe.

RETROURETHRAL CYSTOSCOPIC GUIDE FOR EXTERNAL URETHROTOMY.

By D. A. Sinclair, M. D.,
New York,
Clinical Professor, Genitourinary Surgery, Polyclinic School and Hospital; Adjunct Assistant Visiting Genitourinary Surgeon, Bellevue Hospital.

The instruments here shown are for the purpose of obviating the difficult operation of external urethrotomy without a guide, often a tedious procedure

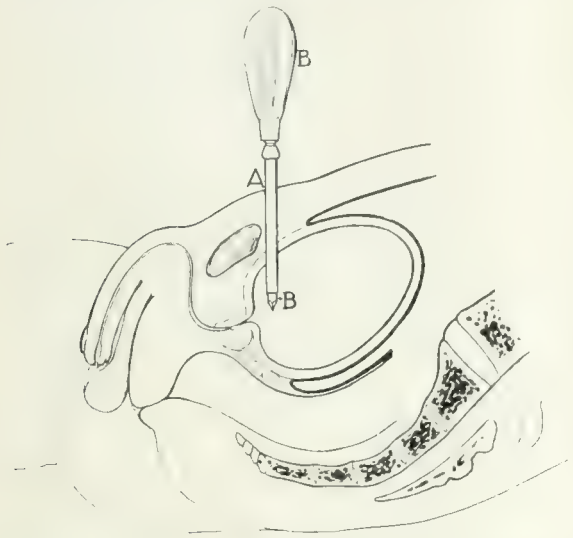


Fig. 1.—Cannula (a) and trocar (b) introduced into the distended bladder.

and sometimes unsuccessful, making suprapubic cystotomy necessary. They consist of: 1. A trocar and cannula, three inches long and No. 15 French in calibre; 2, a straight observation cystoscope, five inches long, No. 12 French; 3, a Herzfeld Eustachian catheter with spiral end, No. 12 French.

Technic. Local or general anesthesia may be employed. The patient is instructed not to pass his urine for several hours preceding the operation, or, if he has recently emptied his bladder, four to eight ounces of boric acid solution may be forced into it with a bladder syringe by fitting the nozzle of the syringe snugly at the meatus; a slight Trendelenberg position is desirable, but not necessary. The trocar and cannula is then plunged into the bladder, one inch above the symphysis pubis in the median line, in a slightly oblique anterior and forward direction, calculated to bring it near the bladder orifice. The trocar is then removed and the urine allowed to escape. A No. 12 French soft rubber catheter is now introduced through the cannula into the bladder, and the bladder is irrigated with boric solution until the flow returns clear, when it is distended to a comfortable capacity with boric solution. The little cystoscope is then introduced, the light having been previously tested. A general inspection of the bladder may now be made, and the internal urethral orifice easily and quickly found, owing to its large size. The tissues permit quite liberal deflection of the cannula and cystoscope, and advantage should be taken of this fact to bring the distal end of the cannula close to the internal sphincter; when this is done, the cystoscope is removed, while the cannula is held true, looking, as it were, into the bladder orifice, and the Herzfeld Eustachian catheter is introduced through the cannula with the automatic, spiral curved end pointed anteriorly. The curved spiral end becomes straight in its passage through the cannula, but at once resumes its curve when released and passes into the posterior urethra. The proximal end of the Eustachian catheter is depressed downward and backward toward the spinal column, which pushes the distal end forward into the urethra. A finger in the patient's rectum confirms the position of the instrument. The patient is now placed in the lithotomy position and the guide cut down upon in the usual manner. The Eustachian catheter is now removed through the cannula, and the latter is then withdrawn, a stream of saline or boric solution being forced through during its removal. The suprapubic puncture does no harm and heals kindly, aided by the usual perineal drainage tube, and is simply covered by a piece of sterile gauze.

I have made a modification of this combination of instruments, which I herewith present. It consists of an oval shaped, No. 18 French trocar and cannula, the cannula being five and one half inches long, and acting as the sheath for the cysto-

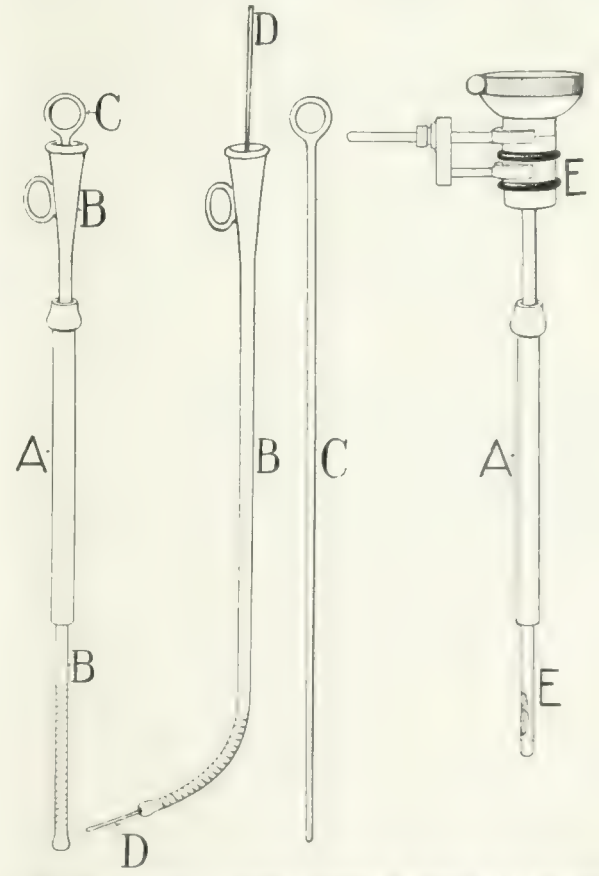


Fig. 2.—Cystoscope (e) passed through the cannula (a) for bladder inspection. Also shown are the automatic, flexible spiral curved guide (b) with the obturator (c) *in situ;* also with the obturator removed and replaced by a filiform bougie (d) after the guide has entered the posterior urethra.

scopic telescope. The technic for its introduction into the bladder is the same as for the smaller and original instrument mentioned above; a No. 5 French, flexible metal guide may be passed through

this instrument and, under direct vision, fed into the posterior, and even through the anterior urethra, thus acting as an efficient guide for external

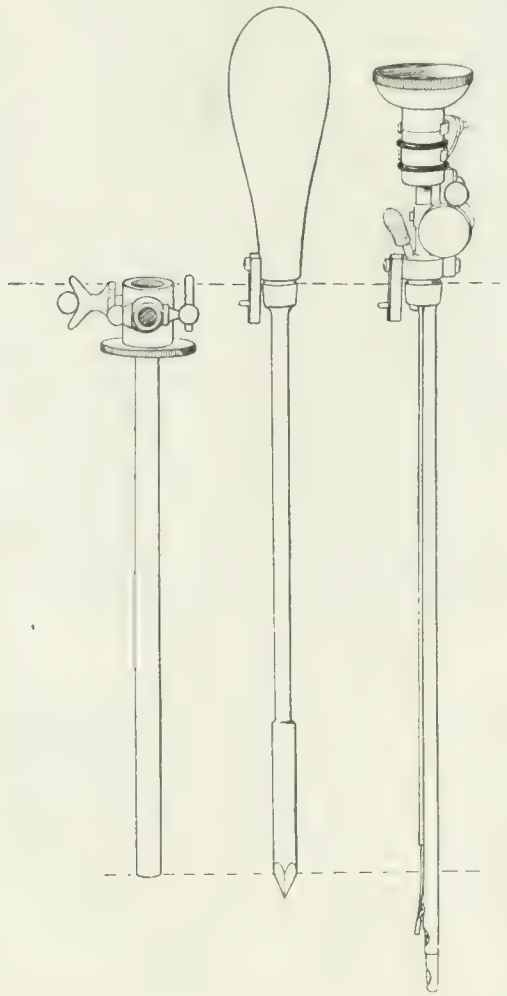


Fig. 3.—Combination trocar, cannula cystoscope, the cannula acting as the sheath of the catheterizing telescope, through which a woven, flexible metal guide may be fed successively into the prostatic, membranous, and anterior urethra.

urethrotomy, when it is impossible to pass a guide from the urethra into the bladder.

40 East Forty-first Street.

RÖNTGENOLOGY OF THE INTESTINAL TRACT.*

By George Rosenbaum, M. D.,
Philadelphia,
Radiologist, Mount Sinai Hospital.

While Röntgen diagnosis of abnormal conditions of the bowel is not yet standardized and not always absolute, yet in many cases only the Röntgen ray will give a definite diagnosis and guide the clinician or surgeon to a correct conclusion. The technic of intestinal examination is a thing which, after all, concerns the examiner chiefly and so will not be touched upon, except to say that the patient is given a bismuth or barium meal or enema; and at definite intervals the drug is traced in its course through the intestinal canal. To understand the abnormal, one must, of necessity, be familiar with the normal movements; we shall therefore follow an opaque meal through a normal individual, from mouth to rectum.

After passing over the tongue, the bolus is shot rapidly down the esophagus and at once enters the cardiac end of the stomach. The detailed behavior of a bismuth meal in the stomach will not be considered here. Let it suffice to say that within six hours this organ should be empty and the meal seen in the intestines. After passing the pylorus the meal enters the first portion of the duodenum. The transit through the entire duodenum and the jejunum is exceedingly rapid, so much so that it can hardly be followed by the eye, although readily demonstrated röntgenographically. When the ileum is reached, progress is much slower and the meal may remain from one to three hours. It then enters the cecum, whence, after a few hours' pause, it slowly enters the ascending colon. Normally the meal is to be seen in the cecum six hours after ingestion. The passage through the ascending colon is quite slow, one important reason being the force of gravity to be overcome. The rate of progress is slightly faster in the transverse and descending colon and in ten to twelve hours the meal is to be found in the descending colon. The sigmoid and rectum are filled a few hours later.

We have thus followed a meal through the digestive tract in which peristalsis is normal. Foreign bodies in a normal intestinal tract are usually not passed within the normal time. As I reported in a previous issue of the New York Medical Journal, I have followed a wire nail, two and one half inches long, through the intestinal tract of a normal child for fourteen days. In certain types of diarrhea I have seen the barium meal pass completely through the intestinal tract with almost unbelievable rapidity. In one case it required slightly less than three hours.

When sending a patient to the röntgenologist for intestinal diagnosis, it is well to remember the influence of laxatives upon the peristalsis of the intestinal musculature. The effect of the various laxative mineral oils often persists for a week; other purgatives somewhat less, so that it is important that all such drugs be withheld for at least one week prior to examination; otherwise the Röntgen report will be misleading and in cases of stasis particularly, will be worthless.

THE RÖNTGEN FINDINGS IN STASIS.

According to the most generally accepted German and Austrian schools, stasis may be divided into three classes. I speak of the noninflammatory type.

1. *Spastic constipation.* In this type, if bismuth is taken by mouth, it may be demonstrated, days later, in a very characteristic way. The drug is not in one, even, continuous column, but is divided into numerous small, distinct masses, like scybala. In this type the bowel contents move about normally as far as the descending colon, for usually the meal is seen here in ten to twelve hours. Sometimes there is even hypermotility, the meal being seen in the descending colon in six hours, although defecation occurs only days later. The reason is not

*Read before the County Medical Society, Southeast Branch, Feb[illegible]

entirely clear why the bismuth should remain, but it is generally thought to be due to a tonic or a spastic contracture of the intestinal musculature.

2. *Atonic stasis.* Here there is stasis in the small intestine and dilatation of the large. Fermentation with resultant gas accumulations in various parts of the colon is a frequent occurrence. Cæcum mobile is often a cause of this type of stasis.

3. *Rectal stasis.* This depends upon an atonic condition of the sigmoid and rectum. I have seen these so widely dilated with feces that a tumor was easily palpated above the symphysis pubis, and yet the patient had no desire to empty the rectum.

The above mentioned forms of stasis are those in which there are no organic causes; for instance, adhesions, new growths, or congenital defects.

Marked stasis occurs in many "colitis" cases. These will be treated of at length in a subsequent paper. I will not consider here duodenal ulcer or stricture at any part of the duodenum; but it is well to remember that a slight degree of dilatation of the duodenum is a frequent accompaniment of stasis.

Among the causative factors in stasis, malposition of the colon is often found. The most frequent type is coloptosis. This nearly always involves the transverse colon, although the splenic and hepatic flexures are also apt to be ptosed.

Normally the transverse colon extends, above the umbilicus, in a gently ascending loop with the convexity downward, from the hepatic to the splenic flexures. In ptosis this loop is frequently V or W shaped. Here there is lengthening and the formation of acute angles, which, but naturally, hinders the onward propulsion of the bowel contents. This V or W shaped colon is probably congenital, but it is also plausible that it may be acquired. A colon habitually loaded with feces will eventually be ptosed to such a degree that the transverse colon may be found in the pelvis.

Cæcum mobile is another important factor in intestinal stasis, particularly of that part of the small bowel just adjoining it; I refer to the ileum. By means of two pictures of the cecum, one taken anteroposteriorly and the other with the patient lying on the left side, it is easy to determine the mobility of the cecum. Adhesions from an inflamed appendix, or gallbladder or stomach may drag the ileum far into the pelvis or up as high as the hepatic flexure, and with this condition, stasis, of necessity, follows. Inflammatory processes in the abdominal or pelvic cavities resulting from salpingitis, appendicitis, cholecystitis, etc., often cause adhesions between various loops of bowel or between bowel and adjacent organs. This distortion may and usually does cause stasis. Tumors of the gut, causing stenosis of the lumen with resultant stasis, are easily demonstrated. The gut proximal to the tumor is greatly dilated, whereas the distal portion is comparatively thin and narrow.

It must be borne in mind, however, that in some tumors without definite stenosis, there is no stasis. From a clinical experience, the meal may pass through in a very few hours. This is duly explained when we remember that diarrhea is not an infrequent symptom of tumor.

1000 North Thirty-second Street.

AFFECTIVE ACTIVITY, EMOTION, AS THE CAUSE OF VARIOUS NEURASTHENIC BODILY DISEASES.

By George Edward Barnes, B. A., M. D.,
Herkimer, N. Y.

It is trite to say that the thoughtful, scientific physician meets problems at almost every step, and although somewhat less trite, it is also true that he frequently passes unnoticed vitally important but unknown truths which are very near to him. Man lived century after century without knowing that his blood circulated through his body and even today we cannot explain how the stomach cells produce the hydrochloric acid which helps to digest our food.

In this paper, I wish to call attention to some overlooked and undiscovered pathological processes of great importance. In the title I have included the word "emotion" because it best indicates to the general reader the subject matter here treated. Affective activity or affection (using the word not in its sentimental but in its scientific meaning) is the psychological term applied to that part of emotions and feelings which does not belong to the cognitive category. It is the more really active ingredient of emotions and feelings. Viewed from the limited "physiological" rather than from the psychological aspect, this paper might be considered to be a contribution to that very vacant chapter on the diseases of the autonomic (including the sympathetic) nervous system. It is essentially and practically a brief exposition of some of my ideas concerning the tremendous importance of the dynamic relation existing between mind and body.

Psychologists hold two general views regarding the psychology of the affective processes, but it is not necessary to enter into a discussion of them here and, although the adoption of either one will not impair the validity of the ideas which I now present regarding certain diseases, I will briefly indicate the theory which I hold and have somewhat extended. I believe that affective activity or affection is the product of special cerebral cells located in some special area of the brain, most probably in one or more of the layers of cells of the frontal cortex. There is very close connection and interaction between these cells and the cognitive and motor cells. I further believe that groups of these affective cells have a somewhat specialized activity and that there are as a result two grand fundamental affective activities, pleasantness and unpleasantness, and several more particular, more definite, more specialized forms of these two fundamental affective activities, as joy, fear, grief, anger. I believe that the affective activity is discharged along association fibres and efferent paths, particularly through the centres at the base of the brain, and that it produces characteristic results. Affective currents aroused in the affective cells sometimes pass to cognitive cells and bring cognitive elements, as ideas, into consciousness and sometimes pass into and through cognitive cells which hold ideas of movements and then pass to motor cells and produce movements. The particular cog-

nitive elements or movements or both which are produced, depend on the particular points at which the affective current arises and on the particular cognitive and motor cells through which it passes and which it stimulates. I believe that the muscular and glandular reactions are the results and, together with the sensations following them, the modifiers but not the sole determinants of the particular qualities of the various emotions.[1] Normally there is a constant current of pleasantness which, mentally, is the foundation of optimism and, physically, is one of the regulators of organic function. I reiterate that the adoption of any particular theory of the nature of affective activity cannot invalidate the following exposition of its manifestations.

While the subject of arteriosclerosis has so much engaged the attention of the medical profession in the last few years, the chief causes of it which have been brought forward are autointoxication, products of proteid digestion and metabolism, intestinal putrefaction, syphilis, and the rush of modern life. Diverse ideas prevail as to what the autointoxication is, but whether it is supposed to be the result of some malfunction of the ductless glands or the absorption of putrefactive substances from the intestine or whatever else, there has been not a really scientific determination of the actual toxic substance or substances always present. I do not say that autointoxication absolutely never exists and causes arteriosclerosis, but I do say that I believe that it is, at least, very, very rarely the cause of arteriosclerosis and that, even when it does seem to be the cause of it, affective disturbance will be found to be the anterior cause, if the truth can be ascertained. Affective activity has some influence on the secretion of the ductless glands. I do not believe that aminoacids or peptones absorbed by the intestine ever cause arteriosclerosis. There is no doubt that the importance of the products of proteid digestion and metabolism and intestinal putrefaction as a cause of arterial hypertension is, to say the very least, terribly exaggerated. The mere fact that the prevalence of excessive meat eating is very limited compared to the prevalence of arterial hypertension is in itself sufficient proof, and it is strange that this obvious fact should have been so long disregarded. Even allowing, for the sake of argument, that such products can cause hypertension, it would be comparatively rare that they would accumulate sufficiently in the body to produce hypertension, except when the kidneys are impaired, and my observations do not permit me to conclude that most cases of hypertension are caused in that way, and there are very, very many cases, especially early cases, of hypertension with unquestionably good kidneys. In fact, there is no doubt that the usual sequence of conditions is much more frequently from arterial hypertension to kidney disease than from kidney disease to arterial hypertension. The symptoms of intestinal putrefaction can be produced by injecting any substance into the intestine which will distend it or stimulate its contraction. That is to say, absorption of putrefactive substances from the intestine is not necessary to produce the symptoms. The abnormal contractions of the intestine in constipation and diarrhea are the pathological things in the intestine which produce the symptoms. In these cases of supposed putrefaction there is a vicious circle in which the abnormal affective activity is the really disturbing factor, producing abnormal contractions of the intestine which in turn cause the sensations which then augment the affective activity. Moreover, any annoying bodily irritation, even a mechanical irritation of the skin, may, by first arousing affective activity, cause arterial hypertension. See what is said later about the causes of constipation and diarrhea.

It is doubtful or, rather, not at all probable that syphilis is often the cause of arteriosclerosis, notwithstanding the prevailing opinion. As the germs of the disease and their products exist in all the tissues of the body why, if it is a cause, do not the same chronic inflammations appear in all those tissues as well as in the walls of the arteries? And why do we not find gummata as frequently in the walls of the arteries as in the rest of the body? To be sure, arteriosclerosis may appear in syphilitics for the same reasons that it appears in nonsyphilitics. It seems as if the firm walls of the arteries are more resistant to specific infection than are most other tissues. Sclerosis is not constant in syphilitics.

The rush of modern life, whether relating more particularly to mental or physical activity, is an indefinite term—when speaking about the causation of disease. It is sometimes spoken of as nervous strain, which is still an indefinite term. Never have I seen an article which exactly and scientifically defined this vague etiological factor. Attention should now be called to the psychological fact that many things which, so to speak, stir up the mind to greater effort, stimulate (through cognitive activities) the affective activity which, through its action on the vasoconstrictor centre, causes contraction of the arteries. And I wish to state that the frequent recurrence and the continued persistence of this condition of mind and of this functional contraction of the arteries cause, first, the so called "presclerotic" or "functional sclerotic" and, finally, the sclerotic "stage" of arteriosclerosis. But, it should be immediately added, the "presclerotic or functional sclerotic stage" of arteriosclerosis is not necessarily a stage of sclerosis at all. Hypertension of the arteries without sclerosis is an entity by itself which is functional but which, if it is allowed to continue, will surely lead to organic changes, i. e., to sclerosis. The experiences of life which may stir up this excessive affective activity and this resultant functional hypertension of the arteries, are too numerous to mention. They may be anything at all which arouses to greater effort. This affective activity, acting on the circulatory organs, is the prime force by which the brain and all the rest of the body are supplied with a greater amount of blood to sustain the greater effort. And when the tension of the arteries is long continued, their walls are impervious to their own needed amount of nutrition and are overfatigued, and they therefore become degenerated and sclerosed. There is no more doubt

[1] Not only do emotions occur without bodily reactions, but the same emotion may produce different bodily reactions, e. g., fear may in one person cause dilatation of arteries and in another case contraction and it may in the same person at one time cause dilatation and at another contraction.

about these things than about the fact that the earth rotates, and their importance is tremendous. The affective activity and not the intestines or kidneys is the great cause of arterial hypertension and, finally, sclerosis. I observed these things as almost certainties several years ago, and so well satisfied was I of their truth that for the past three or four years I have been teaching them to my patients who have been afflicted with these conditions.

As there is an affective activity which stimulates to greater effort, so there is an affective activity which diminishes effort and causes, not hypertension, but hypotension of the arteries. The efferent currents of the affection act through the medulla cells and dilate the arteries. Speaking generally, this result takes place whenever there appears a greater or less emotional submission. The episode may signalize the softest stirrings of love or the overwhelming impression of the most appalling calamity. I wish to emphasize the importance of this fact. The effects of this affective activity are often long continued. Emotions have been regarded as momentary matters. So they are in one sense, but in another sense they must be regarded as of persisting nature. Frequently recurring and strong emotions continue their effects for varied periods, and for this reason they are of the most profound medical and even sociological as well as psychological importance. "Nervous prostration" is the condition of general and persisting "exhaustion" in which the terribly suppressing affective activity is the cause, and in which the whole nervous system and the arteries, and frequently the heart also, are particularly affected. Psychic shock is of this nature. In fact, nervous prostration is a condition of continued shock or, rather, a condition in which the effects of shock are of long duration.

An interesting and important phenomenon appears in cases of nervous prostration at some point in their recovery—if they end in recovery. The arterial tension which has been so low rises above normal and, varying with the case, continues so for a longer or shorter time. In fact, tension may rise very high and remain there, unless remedied, until full recovery has taken place. This phenomenon means that the former depressant affective current has given place to the more normal (but previously suppressed) stimulating current of pleasantness and that the latter current, in the eagerness of nature to effect a cure, is excessively active on the vasoconstrictor centre. This excessively stimulating current of affective activity may be a great danger to the patient. It may render him so irritable, so talkative, and so restless that he may be adjudged insane and, unless it is remedied, it will finally cause the arteries to become hardened. I have had, and now have, patients who illustrate these facts beyond question. One patient became prostrated in June, 1910, and her arterial tension was low until March, 1911, when it became very high. This high tension continued for more than a year and a half. During the last four months the tension has been slowly and gradually relaxing, but it is still above normal. This is a case of very marked hypertension of this kind, and the affective activity which has been producing the sickness has been visible not only in the pulse but also in all the patient's being and activities, particularly in her features, her eyes, and, as it is improving, all these manifestations of it are gradually passing away and she is beginning at times to feel a little like herself.[2] I have two patients who were each prostrated over fifteen years ago and who went year after year without relief, and when they came to me they still had arterial hypotension. Under treatment they improved, and in time their affective activity changed and their hypotension was replaced by hypertension, which continued for several months and is now diminishing as they are nearing recovery.[3] Another case presents a contrast in the history. The patient was prostrated many years ago, improved so that her affective activity changed and her arteries became contracted. In this condition she continued several years without getting relief. Her affective activities disturbed her so much that she was committed to a State hospital for the insane. After several months she was released. Years later, she came to me. She was a pitiful sight, and there was not the slightest doubt that all her misery was due to her excessive affective activity, which was causing a long continued contraction of the arteries. She had all the marked symptoms of that condition. Her arteries were quite hard, and tension could not be lowered in the least without causing faintness. She passed from my care and in a few months died of cerebral hemorrhage. Out of many cases of arterial disturbance I mention these, because they show so clearly the fundamentally active force which causes the ailments, namely, affective activity. It should be added that this change from hypotension to hypertension of the arteries occurs in many cases which are affected to a less degree than are the cases with full prostration.

During all the stages of nervous prostration, from the most profound enfeeblement to full recovery, and in some other affective disturbances, the pulse is, to the skilled physician, a true indicator, not only of the tension of the arteries, but also of the general condition of the nervous system and of the affective function in particular, for the reason that affective activity chronically influences the pulse. No physician who can with the finger test the tension of the radial artery need doubt the effect of affective activity on it. Indeed, if he will examine the pulse of a few of his "nervous" patients several times within the first ten minutes they are in his office, he will find that many of them will, within that time, show several changes of tension.

From the standpoint not only of theoretical medicine but still more of practical medicine, especially of prophylactic medicine, in the attempt to promote longevity, it is of the utmost importance that persisting affective activity producing paratension (which word I introduce as a needed term to include both hypotension and hypertension) should be recognized as the etiological factor in the causation of serious disease. It has been overlooked largely because, in the early stages of these ailments, people often do not feel sick and do not seek medical advice, and because the conditions,

[2] This patient, in November, 1913, had very nearly recovered.

[3] One patient became sick with an acute ailment and, as she lived a long distance away, discontinued treatment. The other patient was, in November, 1913, nearly well.

when actually observed clinically, are assigned to wrong causes. Affective disturbances are the chief causes of arterial disease.

Although many conditions, both mental and physical, have been thought to be causes of migraine, the medical profession quite generally, and neurologists in particular, are agreed that its real causation has not been determined. I think there is no doubt that it is due to the radiations of the affective force. This fact explains why so many various apparent causes bring on an attack—they all act through the arousal and mediation of the same excessively excitable force, affective activity. There has been particular difficulty in explaining why the symptoms are often limited to one side of the head. This phenomenon is now clearly explained by the activity of the affective force on one side of the brain being greater than that on the other side. As a matter of fact, the manifestations of the disease are probably never strictly unilateral, although the pain may be unilateral on account of the greater activity on the one side. The greater the arterial contraction is on either side of the brain, the greater is the pain on the same side. There is probably always some arterial contraction throughout the body. (It should be mentioned here that this phenomenon of greater arterial contraction on one side of the brain throws light on the problem as to why, at autopsies, the arteries of the brain are sometimes not found to be all equally sclerosed. The various arteries of the brain have not been equally contracted during life by the abnormal affective activity.) A careful study of blood pressure in the radial arteries of neurasthenics reveals an occasional difference between the two sides. It is natural that migraine should so often make its appearance at the time of the menstrual flow, because then the affective activities are heightened.

Affective radiations generally influence the heart. Indeed, it may be asked whether there exists any condition of the heart in which they do not influence it. They may increase or diminish the frequency of its contractions; they may increase or diminish its tonicity and the force of its contractions; they may improve or disturb its regularity; they may modify organic and functional diseases already existing.

It is now taught that, beside those cases in which rapidity or slowness of heart action can be ascribed to actual disease of the heart, there are cases in which these variations from the usual rate are normal for the individual. I believe that this opinion prevails because the histories of such patients are not searched for affective causes (and, less frequently, for other causes), which modify the rate during long periods or permanently. Profound emotions, which began to exert their influence at a more or less remote date in the patient's history, make a deep impression on the system and continue their influence after all influence is supposed to have passed away and the patient himself is without any suspicion of the fact. The heart often becomes more or less accustomed to the influence. Whether strictly the myogenetic or the neurogenetic theory of the heart is true, there is practically always a certain more or less constant and a more or less variable current of affection passing to the heart and influencing its action. Careful observation will reveal this fact. Even when an abnormal affective activity passes off after the heart has once become accustomed to it, the heart will show the change and may be somewhat bewildered until another affective activity takes its place. This phenomenon is somewhat similar to the effects of making and breaking the galvanic current. Patients having unusual heart rates who are supposed to be well should be carefully studied for hidden abnormal affective activity.

There is a usual correspondence between the effect of affective activity on the arteries and its effect on the heart. The affective activity which stimulates the arteries, also usually increases the total activity of the heart, and the affective activity which relaxes the arteries usually diminishes the total activity of the heart. As a rule, except in weakened hearts, as the blood pressure rises, the heart beat increases in force but diminishes in frequency, but in some cases the continuance of these processes beyond a certain point causes cardiac pain, which arouses another affective current which, in turn, both inhibits the heart action and relaxes arterial tension. This reflex regulation of blood pressure, however, occurs exceptionally. There is sometimes a lack of correspondence between the stimulating effects of affective activity on the heart and on the arteries. For example, when the arterial contraction is out of proportion to the cardiac contractions for a longer or shorter time, the heart muscle is strained and dilates, and this result is most apt to occur when the heart is required to do more work than it should during physical exertion; on the other hand, when the cardiac contractions are out of proportion to the arterial contraction, the heart hypertrophies and sends the blood current through the arteries so forcibly that they become stretched. I now have a patient who well illustrates this latter fact. For the past few years his emotional activity has been constantly aroused by occupational and domestic discord and, in consequence, his heart has become hypertrophied and his arteries have been stretched by the forcibly propelled blood current. They are not physiologically dilated, for, physiologically, they are in a state of hypertension. They have been literally stretched and they show minute sacculations where the tissues of the walls have yielded.[4]

To be sure, according to the kind and quantity of affective activity, the heart may pass through the familiar changes unless medical attention is early enough directed to the affective condition and the disability of the heart to forestall results. When there is arterial hypertension, the heart usually hypertrophies, and may dilate and fail. When there is arterial hypotension, the heart sometimes becomes undernourished and weak, dilates and fails, especially if put to undue exertion. Many a weak heart supposed to be the seat of some particular form of myocarditis has become weakened by the effects of affective activity on it and on the arteries, and this is an important fact.

Affective activity is doubtless the primary cause of most cases of "pseudoangina." When the af-

[4] In November, 1913, this patient's heart and arteries had very nearly a normal tonicity.

fection causes great arterial hypotension and depressed heart action, the heart becomes weak, its walls dilate and stretch the nerve filaments, and pseudoangina (often called "heart pangs," etc.) appears. When it causes great arterial hypertension and increased tonicity (with slight diastoles) of the heart, the nerve filaments and ganglia are compressed and pseudoangina appears. When it causes high arterial tension, but the tonicity of the heart remains low, the yielding walls stretch the nerve filaments and pseudoangina appears. It seems to have passed notice that the impulses which eventuate in pain are originally produced in the nerve filaments of the heart by the unusual stretching or contraction of the auricles in which the filaments are contained.

Affective activity, through the changes, functional and organic, which it produces in the arteries and the heart, causes chronic degeneration and inflammation of the kidneys. High arterial tension mechanically injures the kidney tissue, and here I believe is the secret of the involvement of the kidneys in cardiovascular disease. It might well be inquired whether affective activity does not affect the kidneys directly. Such direct action is quite positively indicated by the fact that changes of affective activity are often followed by greater changes in the quantity of urine secreted than can be accounted for by the simultaneous changes in blood pressure.

Affective activity is, to a considerable extent, the immediate or the original cause of extrasystole, pulsus alternans, auricular fibrillation, and, perhaps, of paroxysmal tachycardia. A weakened heart often produces extrasystoles when disturbing emotions are aroused, and frequently a heart which has long been under the influence of disturbing affection produces extrasystoles chronically, especially when, from the result of the disturbing affection, the rate of pulsation is either fast or slow, and when the arterial tension is high or low. It is probable that the great majority, even all cases of extrasystole are really due to affective activity. In any of these cases, as the affective activity improves, the extrasystole improves. The histories of cases of pulsus alternans should be studied to ascertain whether the circulatory disturbance was not brought on by emotional experiences of previous years. Auricular fibrillation is probably often the terminal stage of cardiac disturbances which were initiated and established by emotional activities in preceding years. There is some indication that attacks of paroxysmal tachycardia may be started by emotional experiences.

Before completing the subject of the disturbances of the heart, I will insert a few words about hyperchlorhydria. The most frequent form of hyperchlorhydria is said to be of "nervous origin." But what is this "nervous origin"? What is the essential nature of the "nervous" force which causes the disease? It is emotion, affective activity, long continued. Of this fact there is not the slightest doubt. Careful search into the histories of cases reveals that "burning in the stomach," "heartburn," or "sour stomach" follows after a certain amount of continuous emotional disturbance from some annoying, perplexing, harassing, or distressing thing. To one accustomed to treat these cases the connection between the emotional disturbance and the hyperchlorhydria can be only most obvious. Believing that hyperchlorhydria is much concerned in the causation of gastric and duodenal ulcer, it would follow that affective activity, since it causes hyperchlorhydria, is much concerned in the causation of these ulcers.

As toxins absorbed from the intestine have been supposed to be the chief cause of arterial disease, so they have been supposed to be the chief cause of accompanying disease of the heart (cardiovascular disease), but it should be observed that this is merely a theory. I cannot believe that the theory is correct. There is not even a direct indication of its correctness. I do not deny that intestinal disturbance is present in many cases of impaired heart; as a matter of fact, it is. But I think that the causal relation exists, not between the intestinal disturbance and the heart disturbance, but between a disturbing affective activity on the one hand, and both the intestinal disturbance and the cardiac disturbance on the other hand. There are several factors which we really know have influence in producing conditions in the intestine, and I wish to announce that, in this complex problem, affective activity is a factor of primary importance. (It may be observed that Cannon has optically demonstrated the influence of momentary affective activity on the movements of the intestine. We are now describing the effects of continued affective activity.) It is not altogether an easy matter to see how the activities of these various factors are balanced to produce the various disturbances of the intestine seen in patients with disturbed affective activity, but certain important facts and tendencies can be noted. There is no doubt that affective activity frequently causes constipation. It may relax and weaken the intestinal musculature, as seen particularly in nervous prostration, but also in less serious conditions of "nervous exhaustion." It may increase the tonic contraction of the musculature (spastic contraction) so as to interfere with peristalsis, as is most evident in melancholia, in which disease there is a strong depressing affective current (although it has been supposed that the constipation caused the melancholia!), and it is also evident in less serious conditions. In these instances the affective activity exerts its influence through the nerves directly on the intestinal musculature. Affective activity also frequently causes constipation by first causing hyperchlorhydria which, in turn, causes the constipation. Affective activity causes, also, diarrhea, and it produces this disturbance by increasing the peristaltic contractions of the musculature. This fact is seen in both an occasional form and an habitual form. It is familiar even to the laity that diarrhea frequently appears when they are "nervous" or excited; that is, when they have a stimulating affective activity. The habitual form should be more or less familiar to the observing physician. I now have an interesting case of it. The patient's bowels persistently tend to move from three to five times daily. In fact, it seems as if his intestinal musculature has hypertrophied under the continued action of his stimulating affective activity, just as his heart has hypertrophied. This case also illustrates the resultant effect of two fac-

tors, for, although he has moderate hyperchlorhydria, the direct effect of the affective activity on the intestinal musculature is so great as to more than overcome the constipating influence of the hyperacidity.[5] Occasional diarrhea interrupts constipation on account of one or more of several factors. Such occasional diarrhea may result from the direct effect of temporary stimulating affective activity. It may be caused by swallowing irritating, bulky, or insufficiently chewed food; or accumulated feces may locally stimulate the colon so that the whole intestinal canal more or less reflexly responds with diarrheal contractions. Quite frequently an alternating diarrhea is caused by the local stimulation of masses of mucus, which are formed by and adhere to the intestinal mucosa. This form of diarrhea is particularly apt to be produced, reflexly, by the action of the whole intestine, the contents of the upper portion being passed in an undigested state and the contractions sometimes being so severe, in the effort to dislodge the mucus, as to cause severe colic ("mucous colic," "membranous enteritis"). When one thinks of the ease with which catarrhal inflammation may be started in visible mucous membranes, it is not surprising that disturbances in the intestine should cause catarrhal inflammation there. This inflammation seems most frequently to appear in cases in which there has been at some time an arterial hypotension with resulting congestion of the mucosa—the frequent effect of exhausting affective activity. The mucus is ejected at longer or shorter intervals. Through the thorough examination of the stomach contents, I am very familiar with the alterations which the affective activities produce on the gastric digestion, but I am not, nor is any one else, necessarily very familiar with the alterations which they produce on the intestinal digestion. Although moderate hypochlorhydria is sometimes found, particularly in the much exhausted and in the depressed cases, hyperchlorhydria, as already said, is the very frequent finding in the stomachs of these patients. This fact means two significant things: First, that most of the discomfort in the stomach, variously called or rather miscalled dyspepsia and indigestion, is really due to the irritation by the excessive acid of the gastric mucosa; and, second, that proteid food is properly digested in the stomach. From my study of the intestinal digestion of patients both with hyperchlorhydria and with hypochlorhydria, I am convinced that the pancreatic and intestinal secretion is produced in such quantity and quality as to complete well the work started by the gastric secretion, and, therefore, that the proteid digestion is very easily and properly completed in the intestine and the products of it properly absorbed. I must ask, therefore, what is the reason for clamoring about the putrefaction which is supposed to be so prevalent in patients with early heart disease? I do not believe that they have any more putrefaction than other people. But even if they did have such abnormal putrefaction, it would probably be due, in the final analysis, to the same cause to which are due most of the other phenomena mentioned in this paragraph, namely, to affective activity. It should be repeated that there is no doubt that cardiovascular disease appears as frequently in the person who has a moderate or even small supply of proteid food as in the person who has an excessive supply of it, other things being equal. In concluding this topic, would it not be well to ask whether there is any reason why the present generation should have any more intestinal putrefaction than the few preceding generations and whether the increase in cardiovascular disease can be thus explained!

Patients having disturbances of affective activity frequently have many pains and hyperesthesia. Their whole nervous system, both cells and axons, is weakened by the unusual radiations of affective energy and is very susceptible to influences apt to cause pain. These pains may be classed as referred and general. The referred nature of angina pectoris is now quite widely known, but the fact that constipation causes a referred pain in the form of a backache is not so well known. But it should be said that not only constipation, but also diarrhea causes referred backache. The pain is caused by pressure or stretching on the nerve endings in the walls of the intestine, and that pressure or stretching may be caused either by distending collections of feces or by unusually active contractions of the intestine. That is to say, the pain is not due to absorbed toxins. Actual distention of the intestine with anything will cause the same pains. Arterial hypertension, especially when suddenly following hypotension (on account of a change in affective activity), often so acts on the nerve filaments in the kidneys as also to produce referred backache. The general pains of these patients may appear anywhere, but most frequently in those parts of the body in which the nerves are subject to pressure, as in the joints and muscles. These pains, like all neurasthenic symptoms, are worst after rest and tend to subside as the bodily functions are aroused by activity. These general pains, it should be obvious, are also not due to substances absorbed from the intestine, and they are not correctly called neuritis, nor are they even what is properly called neuralgia. Backache may be caused by either the referred or the general pain or by both at the same time. These patients are also more than ordinarily apt to have neuralgia of particular nerves. A hyperesthesia of a referred nature, which I have never seen described, is a tenderness over the sternum, appearing in cases with depressed respiration.

Asthma is variously stated to have its cause in some physical disorder, such as nasal obstruction or intestinal irritation (those poor intestines!), or to be of nervous origin. Most observers hold that it is due to nasal obstruction, but it should be most emphatically said that not all patients with asthma have nasal obstruction and that many people who have nasal obstruction do not have asthma. There must be an invariable cause. I believe that asthma is invariably the result of abnormally active affective processes. In asthma there occur involuntarily the affective activities and their resultant motor respiratory activities which normally tend to be produced during the voluntary effort to get rid of an undesired thing. Similar activities, for instance, occur normally, when one arouses himself to lift a very heavy weight or to shun a very offensive

[5] His bowel action was, November, 1913, normal.

thing. The activities of asthma may be said to be the emotional equivalent of actual normal exertion. The affective processes become so firmly established and take place so easily that any unpleasant thing—whether some kind of nasal obstruction, some kind of intestinal discomfort, a displeasing word, a disagreeable odor, or what not—and finally sometimes some exciting pleasant thing will start them into activity. The real fundamental activities of asthma and their facile operation can be plainly and closely observed by talking, as I have often done, to an asthmatic patient and bringing on a slight attack of wheezing by making slightly unpleasant suggestions and bringing to an end a slight attack of wheezing by suggesting engrossingly pleasant topics. It should be mentioned that an historical or a developmental indication of the nature of asthma is found in the fact that the disease often appears in infancy. The affective activities are obviously the most prominent psychic activities of childhood, and children are extremely impressionable. The nature of asthma is well illustrated by a case which I have recently been treating a girl, seventeen years of age, who has had the disease since she was two years old, who has never had any nasal obstruction, nor any intestinal disturbance of chronic character. The asthmatic breathing during her years of growth has made her hunchbacked. It is well to add that, under treatment, she has become quite another girl and no longer disturbs her family with nightly paroxysms of wheezing. The real cause of asthma is abnormal affective activity, and the occasion which first arouses this activity is some unpleasant experience which may sometimes be learned from the history of the patient.

Hay fever is quite similar to asthma. In it the efferent affective activity acts chiefly on the blood-vessels and secretory function of a single mucous membrane when irritated by a disagreeable substance. Hay fever is manifestly more than a reflex phenomenon. The nasal mucous membrane, not only in hay fever, but also in many other instances, as hypertrophic rhinitis, is, in a psychological sense, the most expressive single mucous membrane in the body. Every one who thinks about it knows that its neurovascular apparatus is very easily affected. Affective activity controls the spontaneous activity of the facial muscles and the expression of the eyes, both in momentary and habitual, normal and abnormal facial expression. With certain restrictions, the facial expression, even in its minute details, may be said to be the mirror of affective activity. The best cosmetic is a normal affective activity.

The importance of the force described in this paper is tremendous. Although it is, in its pleasant phase, the source of most of the happiness in the world, it is, in its unpleasant and dire activities, one of the most and, probably, the very most common source of misery, and it very, very often exists concealed in domestic discord, which, by the way, may have a real or an imaginary basis. I have prepared another paper in which its activities in the more strictly psychic sphere are shown.[6] I have here shown that it is the cause of real disturbances and diseases of the vital organs of the body. This is a contribution to medical science which lays open the real inner nature of many ailments which are afflicting thousands and thousands of people and which have been misunderstood.

It may be asked how so many diseases can be caused by affective activity. It would be just as reasonable to ask how the cells in a small portion of the brain can move all the muscles of the body. It must be understood that affective activity is a strong, and, I believe, a somewhat varied dynamic force, and that it acts in various mechanisms or organs. It may be asked why this force acts on different organs in different cases. It is simply a matter of an unusual activity of a certain portion of the total force and the permeability of the path which the force follows in any particular case. This is a positive fact. As partial illustration, suppose that a large reservoir located on a hill has, passing from it to the town below, many pipes of greatly varying diameters. Then let me ask whether those pipes of the largest diameter will not carry down the most water, for they have the greatest calibre or conductivity, and whether each current of water, if strong enough, will not perform a different function according as the motor, or apparatus at its end varies? As might be expected, two or more of the diseases described may appear together, and they do tend to appear thus. I once attended a patient who had hay fever, asthma, arterial hypertension, with stretching, and slight sclerosis, an hypertrophied heart, hyperchlorhydria, habitually overactive bowels, and chronic nephritis. It is certainly time that we should extend our knowledge into the sphere of the diseases of the mighty affective activities.

ADDENDUM.

When, a little over ten years ago, I began to treat the large number of neurasthenic patients whom I have treated, I very soon realized that their conditions, physical as well as mental, could be thoroughly understood only by regarding them as exemplifying pathological psychology. The preceding paper presents some of my observations of particular pathological effects of emotion. It was written in March, 1913, and previously, on September 6, 1910, I read a long paper,[7] showing that both neurasthenia and insanity are due to pathological affective activity (emotion). In the latter paper I also contrasted insanity and neurasthenia in their etiology and essential nature, and showed that, although the two conditions are quite distinct, they do tend sometimes to blend in various ways.

The term neurasthenia is now being much mauled. It seems to me that it would be impossible for one to deny the existence of such an entity if one had had a large number of cases of it to study and treat. And, furthermore, I am quite convinced that the term should be used in its broadest sense. Necessarily there are many forms of neurasthenia. Indeed, in the same individual, quite different and even opposite symptoms often appear at various stages of the disease, as I have indicated in a few instances in the preceding paper. The morbid agent with which we have to deal here, as in insanity, is

[6] See addendum

[7] "New Ideas on the Causation, Nature and Treatment of Nervous and Mental Diseases," read before the Medical Society of the County of Herkimer. Soon afterward the paper was read personally by Dr. Abraham Jacobi.

human affective activity which has a latitude of manifestation. We are not dealing with germs which produce stereotyped lesions. We would not say that because all rivers are not of the same depth, width, color, and velocity at all seasons of the year, there are no rivers! Neurasthenia is a large subject in itself. We should try to take cognizance of our patient's neurasthenia as of any other ailment that he may have. People with neurasthenic diseases constitute a large part of the membership of sophistical, pseudoscientific, antimedical cults.

125 Mary Street.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXLII.—How do you treat diphtheria? (Closed.)

CXLV.—How do you treat alcoholic cirrhosis of the liver? (Answers due not later than April 15th.)

CXLVI.—How do you treat scarlet fever? (Answers due not later than May 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal. Our readers are asked to suggest topics for discussion.

The Prize of $25 for the best essay submitted in answer to Question CXLIII was awarded to Dr. S. J. Essenson, of New York, whose article appears below:

PRIZE QUESTION NO. CXLIII.

THE TREATMENT OF GALLSTONE COLIC.

By S. J. Essenson, M. D.,
New York.

In treatment of gallstone colic, it is the duty of the physician, in the first place, to alleviate the pain of the acute attack; in the second place, to prevent, if possible, subsequent attacks, or remove the cause. In order to moderate the pain, morphine is the sovereign remedy, although we must, as a rule, endeavor to succeed with *moderate hypodermic doses;* if we fail in our main object, we may safely resort to a full dose, and repeat, if necessary, as most patients tolerate morphine very well in hepatic colic, and even under extraordinarily large doses symptoms of poisoning do not occur as readily as in many other conditions. On an average, we may administer subcutaneously 0.01 to 0.03 of morphine sulphate with atropine grain 1/150. Belladonna or atropine alone is serviceable whenever, for any reason, morphine is contraindicated, but, here, large doses are dangerous, as symptoms of poisoning develop quite frequently. The extract of belladonna, a dose of 0.03, given internally every two to three hours, is of great service, or subcutaneous injection of atropine 0.0004 may be administered every three to four hours until relief follows.

I employed, in some cases, suppositories, containing extract of belladonna one grain and morphine sulphate half a grain, which gave relief. A liniment of belladonna and chloroform, which is applied to the hepatic region as a fomentation, covered with oiled silk, often produces great relief. Chloroform is a remedy for the relief of pain and spasm. It is either given internally, in doses of one to two grams in capsules, or in the form of inhalations when we have to deal with a severe attack. It needs no mention that all precaution must be taken in the use of chloroform inhalations, as in surgery. In the very beginning of the attack, the patient, if surroundings permit, should be placed in a lukewarm full bath, in which he should remain as long as possible, at least a half hour; then, instead of the bath, warmth should be applied in the form of a hot poultice to the painful hepatic region. Not all patients tolerate hot local applications; then cold is sometimes soothing. A poultice made of chopped ice, mixed with dry flaxseed, enclosed in a linen bag, and applied to the liver region gives sometimes great relief. Drinking of large quantities of hot water, with sodium bicarbonate, adding a few drops of tincture of opium, relieves the excessive acidity of the stomach, and the hot water acts as a sedative to the stomach, etc. The first portions of the water are usually rejected immediately, but subsequently the vomiting is relieved, and the pain subsides.

The emesis, during the attack of gallstone colic, demands no special treatment, but if very severe, the patient becomes exhausted and there is also danger of rupture of the gallducts and gallbladder; then the symptom must be treated. Small pieces of ice to swallow, and small quantities of champagne are of great service; the administration of cocaine hydrochloride, grain one twenty-fourth to one twelfth, repeated every two to three hours, will often give relief very quickly. Application of leeches to the region of pain and venesection are remedies of the olden time, never to be recommended.

Feeble pulse, syncope, coldness of the extremities, etc., are symptoms of heart weakness; then stimulants are indicated, such as wine, ether, musk, etc. Morphine will perform a double service; it relieves pain and stimulates the heart.

As soon as the paroxysm is over, it is advisable to employ purgatives, Carlsbad water, Friedrichshalle, etc., for a little while, in order to obviate the constipating effect of the opiates and relieve the hepatic congestion. Podophyllin, in dose 0.01, calomel with rhubarb, act very well after the colic for a certain time, especially in cases where jaundice persists after the attack of colic disappears.

Secondly, in order to prevent further attacks, there is nothing better and safer than surgical treatment. The patient, if not operated on, is always in danger of occlusion of the hepatic ducts and the ductus choledochus by remaining calculi, with inflammation and sepsis of the gallbladder, perforation of the bile ducts, and the formation of free or encapsulated extravasation of bile. Ileus may be produced by large gallstones.

Before surgery was developed, cholethiasis, between attacks, was treated with the idea of dissolving the gallstones. Different remedies were devised,

chief among them mixtures containing ether, chloroform, and different oils, because the concretions are chiefly composed of cholesterin, which is soluble in ether, alcohol, etc. After the operation it is advisable for the patient to use alkalies, as the alkaline waters, the most effective of which are Carlsbad, Vichy, Ems, etc. The alkaline constituents in the water prevent the formation of stones. Sodium bicarbonate, with sodium sulphate in large amounts of water, may have the same effect, but sodium bicarbonate may interfere with digestion. I have employed the latter in combination with a mild infusion of rhubarb; citric acid acts in the same way.

Prophylaxis against gallstones is important, by the adoption of a proper regime. Rise early, exercise considerably in the open air, sleep in aired rooms, be moderate in eating and drinking, avoid the use of wines and alcoholic drinks, abstain from all fatty and saccharine articles of diet and from malt drinks; prevent constipation and diarrhea, avoid exposure and excessive bodily exertion. These rules are also to be followed by women, especially at the menstrual period.

20 West 119th Street.

Dr. Joseph F. Dunn, of Chester, Pa., writes:

The acute pain demands absolute and complete rest in bed, then sure and immediate relief from suffering, and nothing acts with greater surety than morphine or some other form of opium. In strong individuals where the pain is intense, we can give a hypodermic injection of morphine sulphate, beginning with grain one quarter to one half, increasing with caution to prevent poisoning. In less strong individuals or where the pain is not severe, it is best to begin with one sixth grain, repeating in twenty minutes, giving a third dose in an hour, if necessary, the physician remaining at the bedside to note the effect of the morphine. Inhalations of chloroform may be used until the morphine has had time to act. If for any reason morphine cannot be used, then paregoric or laudanum may be substituted. The stomach may be unretentive, then chloral combined with tincture of opium may be used by rectal injection. Hot applications over the gallbladder generally give marked relief and may be used in the form of turpentine stupes, mustard plaster, hot towels or flannels; at times a hot full bath gives marked relief. In using mustard or turpentine, care must be exercised to prevent burning the patient, the hot applications being continued until the tenderness in the gallbladder region has subsided. If there is any sign of collapse, stimulants are indicated, such as camphor, strychnine, and strong black coffee answering very well. Vomiting can usually be controlled by small bits of ice, cocaine, opium, or bromides, but this condition rarely demands active treatment, as it subsides with cessation of the pain. When the severe pain has lessened, the following gives excellent results:

R Tincturæ opii camphoratæ, ... ℥j;
Tincturæ zingiberis, ... ℥iiij;
Spiritus chloroformi, ... ℥ij;
Mucilaginis acaciæ, ... ℥ss;
Aquæ, ad. ..... ℥iv.

M. fiat mistura. To be given in dram doses every two hours until pain subsides.

The patient remains in bed until all signs of inflammatory conditions have subsided, and for the first eighteen to twenty four hours it is best to prohibit food in any form. Milk and water in small amounts may be given; purgation by mouth is forbidden. After twenty-four hours a simple enema may be used to open the bowels, and light soups may be allowed, to be followed later on by milk toast, gruels, and the more easily digested vegetables; then a laxative may be given, such as rhubarb or Carlsbad salts. In a few days the diet list may be cautiously increased; spices, condiments, greasy foods, alcoholic drinks, and foods that undergo fermentative changes should be denied. If any signs of inflammation still exist the patient remains in bed. With a subsidence of the inflammatory condition, calomel grain one tenth every hour for ten doses, followed by a saline in the morning, may be used, and colonic irrigation results in marked benefit. When the attack is completely over, the value of sanatorium treatment may crop up, its chief virtue probably lies in the rest, regular diet, and freedom from the cares and worry of business.

The aftertreatment resolves itself into diet regulation, rest, local measures, and the use of drugs. Regarding diet, the patient's peculiarities must be taken into consideration. Violent exercise of any kind is prohibited, and rest tends to restore the patient to his former condition. As long as there is any sign of inflammation, local treatment must be continued until all physical signs have gone.

Sodium sulphate or sodium phosphate may be given two or three times daily; the bile salts, oxgall, and the mildest cholagogues enjoy some reputation.

The question may arise at any time as to when a gallstone case ceases to be a medical one and should be turned over to the surgeon. Considerable discussion has taken place over this phase of treatment and each side has its advocates. A large majority tend to a gradual cure, the acute symptoms disappear never to return. As a general rule, medical treatment is further indicated when a patient remains in good condition, free from pain and fever, where there is no sign of extending inflammation or loss of weight, or where surgical interference is dangerous because of serious complications on the part of other organs. Surgical treatment is indicated if palliative treatment has failed, and dyspeptic conditions continue, where the attacks are frequent enough to make the patient's life miserable or interfere with his work or where there is any indication of a purulent cholecystitis or localized abscess. It is also indicated in gangrene or perforation of the gallbladder, chronic obstruction of the common duct, with chills, fever, associated jaundice and enlargement of the liver.

Dr. Harold S. Gloster, of Wheeling, W. Va., observes:

We must consider treatment under the following headings: First, preventive treatments; second, treatment of the attack; third, the surgical treatments. As regards the preventive treatment we have special reference to the removal, mitigation, or dissolution of the predisposing factors. The diet should be regulated and made free from fat, in other

words the time honored milk diet is to be condemned. Eggs, fruit, and green vegetables, avoiding starches and pastries, constitute an ideal diet. Thorough mastication should be enforced and plenty of exercise in the open air should be taken, as this has a tendency to stimulate the flow of bile. Constipation should be avoided; when the patient is subject to attacks of colic, the Carlsbad treatment is useful in lessening any inflammatory processes that may exist.

As to the attack, we must act promptly, for these patients suffer the most intense, agonizing pain. I give the patient at the very outset morphine sulphate hypodermically in doses of one quarter grain combined with atropine sulphate, grain 1/150; and in very severe cases I combine hyoscine hydrobromide grain 1/100 with morphine. The patient should be put into a hot bath in order that relaxation of the abdominal walls may take place, as this favors the passage of the stone. If the patient is unable to go to the bathroom, hot fomentations should be used to the upper abdomen at a temperature of 35.5 to 37.7° C. and frequently changed. Do not use mustard plasters or other counterirritants, nor dry heat to the abdomen, as they inhibit relaxation. If the pain is not abated by the morphine, another one eighth grain may be given in one and one half hour without the atropine, as the latter has a tendency to dry up the secretion, contract the blood-vessels, and inhibit the action of the morphine. Do not give another hypodermic of morphine, but rather resort to inhalations of chloroform, thereby avoiding the danger of coma and too great relaxation of the abdominal walls. In some mild cases the pain is well controlled by the following prescription.

℞ Acetphenetidini, ...
Phenylis salicylatis, ... āā grs. v;
Caffeinæ citratis, ... gr. j.
M. Fiat pulvis No. j. Sig. One such every hour. Not in fever.

The best internal aid to the passing of the stone is the plentiful drinking of hot water. Under no conditions should massage be employed. I say, do not use massage during the attack for serious changes may occur, involving not only the gallbladder, but the ducts, pancreas, and stomach, thereby rendering the patient liable to sepsis, perforative peritonitis, and cholemia.

If cardiac depression occurs, meet it with strychnine nitrate grain 1/30 and discontinue the hot baths. If shock or syncope occur, combat it by maintaining the body temperature with external heat. Give strychnine nitrate grain 1/30, atropine grain 1/150, and brandy in sufficient doses if necessary. As regards the surgical treatment, I think that in all cases it should be recommended even after one attack of colic. I do not believe that a gallbladder that has once been the seat of inflammatory processes can overcome the damage to such a degree that the organ in its entirety can throw aside the crowding enemies and return to normal. Gallstones, even though quiescent in the gallbladder, sooner or later begin their march down the bile ducts each carrying with it its scintilla of irritation, until finally we have that deadly structure, carcinoma, which in time will overcome the system.

(To be concluded.)

Therapeutic Notes.

Keratin in the Treatment of Hepatic Cirrhosis.—S. M. Tzypkine, in *Semaine médicale* for December 10, 1913, is stated to have obtained good results in three cases of hepatic cirrhosis by administration of keratin, which he had found experimentally to have the property of combining with gelatin, the chief constituent of connective tissue. The procedure adopted in these cases was as follows: Caffeine was first given for three or four weeks in the dose of 3 grains (0.2 gram) three times a day. Upon making sure that this treatment was inefficient keratin was begun, the caffeine being still continued for a time, however, to favor digestion and absorption of the keratin. At first the daily dose of the latter was five tablets, each containing 7.5 grains (0.5 gram). The keratin sometimes causing diarrhea, 1 to 5 cachets of 7.5 grains (0.5 gram) of bismuth subsalicylate were also ordered. As the portal circulation improved and the digestive disturbances grew less, the dose of caffeine and bismuth was reduced, while that of keratin was gradually increased to ten and even twelve tablets a day.

The first case treated was that of a man, fifty-five years of age, with considerable ascites, dilatation of superficial abdominal veins, and edema of the lower limbs and scrotum. Three tappings had been necessary in one month. After starting the keratin treatment, no further tapping was needed. Five months later, when the patient was discharged, all edema and venous ectasia had disappeared, and the abdominal circumference was much less. In a second case, in a man of thirty-five years, the results were even better, the ascites being completely resorbed. The keratin was, moreover, perfectly borne, and bismuth never had to be given. The third case was in an alcoholic patient of twenty-six years, who had been tapped twice in eighteen days. Under keratin, the ascites disappeared completely in two and a half months, and four months later there had been no return of fluid. The abdominal circumference was reduced from 104 to 80 cm., the superficial veins, constituting a distinct "caput Medusæ," could no longer be seen, and normal digestive functions had returned.

Iodine Treatment in Tuberculous Peritonitis.—Pontoizeau is stated, in *Lyon médical* for January 4, 1914, to have made a trial of the method originally recommended by Grocco in the treatment of tuberculous peritonitis, viz., the subcutaneous injection on alternate days of 0.5 to 1 dram (one to two c. c.) of the following solution:

℞ Iodine, ...
Potassium iodide, ... of each ʒv (20 grams);
Normal saline solution, ... ʒviss (200 grams).
Mix and make into a solution.

Satisfactory results, consisting of relief from the local symptoms and improvement in the general condition, were obtained. At times the injections proved to be painful. Where this is the case an ointment of iodine may be used instead.

In cases that have been subjected to celiotomy the iodine treatment is a most effective adjuvant, accelerating repair of the peritoneum and preventing complications.

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EDITORS

CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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NEW YORK, SATURDAY, APRIL 4, 1914.

HAMPERING THE DOCTOR.

Two measures, enacted at the session of the Legislature of the State of New York, which came to an end on March 27th, impose restrictions on practitioners of medicine. One of these, the Frawley bill, places heroine in the same category as cocaine and requires the same detailed records. This measure certainly should not be signed by the Governor, as heroine is amply provided for in the Boylan bill, which was enacted and which will undoubtedly be signed. The effects of heroine are in no wise comparable to those of cocaine; but considered as a habit forming drug, heroine may be classed with morphine so far as its hold upon a victim is concerned, though it is by no means so popular with those addicted to drugs.

The Boylan bill requires the physician to keep a record of opium, its derivatives and preparations, and of chloral hydrate administered by him. Outlines of both bills are given in our news columns. The Boylan bill, it is understood, was fathered by the proprietor of a sanitarium for the treatment of patients addicted to the use of drugs and one of the unique features of the bill is that providing for the commitment of habitual drug users by magistrates to institutions licensed under the State Lunacy Commission, which will probably prove a very effective means of increasing the patronage of such institutions. So far as we are aware, the measure was not actively opposed by the legislative committee of the Medical Society of the State of New York, though it seems to contain several unnecessary restrictions on practice. Physicians may console themselves, however, with the reflection that in its ultimate form the Boylan bill is much less objectionable than when it was first proposed.

With the Boylan bill a law and with the proposed Harrison antinarcotic measure in force making interstate traffic in narcotic drugs illegal, we surely shall have all the legal restrictions which the circumstances demand, if not more. But the mere enactment of laws will not abate an evil. To be efficacious the law must be adequately enforced. It remains to be seen whether or not this will be done. Unless the law is enforced, its passage may work a hardship on the more conscientious members of the medical profession who will obey its provisions voluntarily, while the less scrupulous or quackish graduates will evade the law so long as they are not driven to its observance by fear of punishment.

HYPERCHLORHYDRIA AND HYPERTHYROIDISM.

The secretion of gastric juice is governed, in the light of modern investigations, by two influences, nervous and chemical, the former being represented by psychic and reflex phenomena; the chemical by hormones. Any abnormality in the production of this gastric secretion must, therefore, be due to some disturbance of the nervous mechanism of the viscus, or to a disorder, local or general, of the internal secretion concerned with the chemical process. In a recent article, Dr. F. Marañon, of Madrid (*Revue de médecine*, March 10, 1914), cites a large number of observations which seem, at least, to establish clearly a direct connection between the secretion of the thyroid gland and that of the gastric juice. The importance of this relationship lies in the fact that it brings within the field of successful therapeutics a symptom which not only causes intense suffering, while exposing the patient to complications which menace life, such as gastric ulcer, but which also often defies all remedial efforts until much mischief is done. In the cases mentioned, hyperchlorhydria coincided with hyperthyroidism; the symptoms of the former disorder, intense gastric pain, acid eructations and vomiting, headache, vertigo, marked sensitiveness to pressure about the epigastrium, etc., were all present, and the diagnosis was further confirmed by the finding of a marked excess of free hydrochloric acid in the gastric contents. As an additional proof of the correctness of the diagnosis all these morbid phenomena disappeared completely after

partial—in one instance complete—thyroidectomy in the three patients subjected to this operation, one of the cases cited having shown no return in the two years which had elapsed at the time the article was published. The symptoms of hyperthyroidism were those of the sympatheticotonic type in some cases and of the vagotonic type in others. Some had the typical signs of Graves's disease, including the Stellwag and Graefe signs, tachycardia and troublesome palpitations, tremors, sweating, etc., with some enlargement of the thyroid gland; others showed fewer characteristic signs, but enough of them to indicate clearly the presence of hyperthyroidism, including in some cases a small goitre and some exophthalmos. In others, a goitre had been present some time without causing trouble; more or less suddenly, however, as a result of parturition, menopause, or an emotion of some sort in some, the unwarranted use of thyroidine in two patients, and without apparent cause in others, hyperthyroidism had developed along with hyperchlorhydria. The fact that Doctor Marañon witnessed fifty-three such cases in two years leads him to conclude that they must be relatively common.

While thyroidectomy is advocated in rebellious cases, some of those reported proved amenable to medical treatment. In the so called "vagotonic" type, i. e., those cases in which the vagus seems mainly to be influenced by the thyroid toxicosis, Doctor Marañon found belladonna the most efficient agent owing to its paralyzing influence on the terminals of this nerve; in a few others he used thyroidine with profit, but his results with this drug have, on the whole, led him to consider it trustworthy. Judging from the list of agents tried, however, it appears to us that he failed to avail himself of some of our most trustworthy remedies for the treatment of hyperthyroidism, and that their use would have precluded the need of thyroidectomy in the three patients in whom this operation was resorted to. Nevertheless, the functional relationship between hyperchlorhydria and hyperthyroidism, clearly shown by the cases related, represents a valuable contribution to our knowledge of the etiology of the former distressing symptom and of the far reaching influence of the internal secretions.

TRAINING MEN FOR THE STUDY OF MEDICINE.

The growing practice of insisting upon at least two years of a collegiate course prior to the study of medicine will have, among its beneficial results to the medical student, that of giving him a fairly comprehensive acquaintance with mathematics. To say nothing of the incomprehensibility of physiological physics without a knowledge of mathematics, the fact that chemistry demands at least a bowing acquaintance with algebra, and that the new radiotherapy and electricity will soon require use of the calculus for their complete comprehension, we have a high opinion of the effect of a course of pure mathematics upon the mind. Supplemented with a formal training in the too often neglected logic, mathematics, with its rigorous and inevitable conclusions, is an admirable gymnastics for the reasoning faculty. Physicians are too often confronted with emergencies which require quick and accurate thinking to make it safe always to await the signal of some leader before taking action. Moreover, new therapeutic measures are being constantly imported from Europe, concerning which our physicians should be able to judge speedily and unerringly; whereas we see even prominent men carried away by enthusiasm over apparent effects in a case or two. The medical curriculum is so crowded with matter that the memory has to be taxed at the expense of the reason, and the latter should be cultivated in an earlier and more plastic condition. Professor Mahaffy, of Dublin University, in the Lowell lectures some years ago (*What Have the Greeks Done for Modern Civilization?*) attributed much of the supremacy of the Greeks to their study of pure mathematics. "So far as we have departed from it in our education; so far as we have substituted hurry for deliberation, quantity of facts for quality of knowledge, miscellaneous information for systematic thinking, so far we have rendered modern culture impotent to rival their excellence." Of Hippocrates, trained in the Greek manner, Professor Mahaffy can hardly say too much. All medieval medicine, he says, was ruined by the admission of supernatural influences, special interventions, the action of evil spirits, the conjunction of hostile constellations, and other rubbish at which we now smile, but which men of science then deplored. The first great feature in Hippocrates is the utter ignoring of any such influences as the special causes of disease or cure. He is afraid of no ghost or goblin, he never mentions an incantation. This was the spirit which died out when the Greek world decayed and Europe fell a victim to ignorance and superstition. Yet Hippocrates had to combat similar superstition, as is shown by the excavations at Epidaurus, where the surroundings of the temple to Æsculapius show that charms, dreams, omens, and ceremonial acts stood in the way of scientific hygiene and careful clinical observation. Only by thorough preliminary education can we ever produce physicians of the type of Hippocrates, who, thousands of years ago, produced and taught so much that we are still obliged to hold in reverence.

CLIMATE AND THE LOWER ANIMALS.

A writer in the *Journal of Tropical Medicine and Hygiene* for February 16th points out that as regards the acclimatization of man, we have few data to go upon, because only individuals go from one climate to another and not whole races; study of the lower animals becomes therefore of interest. It has been noted that dogs stand the tropics poorly, being extremely subject to parasitic infections of the intestine. Stallions, bulls, and rams quickly lose their British ferocity and become lamblike in the tropics, while cats soon cease to kill rats, for which reason alone they have been imported. This alteration in character is probably not entirely due to climate, but also to change in diet, the hay in particular of the tropics seeming to differ materially from that of the British Isles. From the tropics to the temperate climes the only animals to go are those sent to the zoological gardens. Among these fully half the deaths occur in the first six months, but we have to consider the perils of the voyage, the troubles on embarking and disembarking, the youth or old age of the animal, the fact of its capture acting as a depressant; yet, taking all these matters into consideration, the writer cited believes that change of environment, temperature, food, and water causes most of the death rate. After six months the mortality markedly lessens. In the London "Zoo" the chief fatal diseases are tuberculosis, mycosis, and pneumonia; heat in the snake house seemed to cause special prevalence of pneumonia among those reptiles. Although many of the animals came from the sleeping sickness district of Africa, no trypanosomes were found post mortem. We must remember that among these imported animals few are caught in the full strength and agility of maturity; most of the captives are likely to be young, old, or sick, thus increasing the mortality rate. On the whole it is still difficult to ascertain either in man or in animals how much climate *per se* has to do with illness and mortality in the question of acclimatization.

CHEMISTRY OF THE SALIVA.

The chemistry of the saliva attracts less attention in the minds of scientific men than might be expected from the importance of the subject and the value of some recent studies in the differences between saliva and sputum. An article on both topics in *Deutsches Archiv für klinische Medizin*, p. 231, 3, 4, 1913, may usefully be noted now. The author, E. Maliwa, defines the sputum as the pathological secretion of the respiratory mucous membrane, for the small quantity of normal sputum—or should we say expectoration?—comes from the pharynx and the glands in the recesses of Morgagni. On the saliva proper, views are not so clear. In the first place its chemistry is uncommonly complex. It covers chemistry organic and inorganic, physiological and biological, and most difficult of all, the chemistry of the lowest orders of fungi and animal life. Another writer, in *Riforma medica*, p. 242, 1914, seizes the opportunity to examine in some detail "the physical and chemical changes produced by the reaction of the bronchial mucous membrane and lungs in disease and the mixture of saliva, nasal secretion, residue of bacteria, and particles of food." Some of the results are highly interesting. In pneumonia the salts in the saliva are in inverse ratio to the degree of inflammation. It is believed that the loss of salts in this way in tuberculosis is a measure of the progress of the disease. Maliwa, in fact, maintains that the course of phthisis to a great extent turns upon the proportion of compounds of nitrogen in the sputum, and the essential knowledge of the individual case is supplied by the methodical examination of the saliva. The level that these fluctuations of nitrogen reach is also a means of watching the effects of therapeutics. As regards special substances discovered in the course of these analyses, he mentions pentose, and as it is found only in phthisis, it clearly indicates the nature of the symptoms. Whether this pentose will ultimately be found in other diseases is not certain, but these studies are illuminating examples of what may be done in analysis of the waste products of the body.

THE PHENOMENA OF MENSTRUATION.

A century ago the superstitions concerning the *Molimen menstruale* were legion. Most of these have been dissipated by study; although women menstruate every twenty-eight or thirty days, we no longer invoke solar or lunar influences for an explanation, and the sometimes far reaching effect of the prodromal symptoms on remote organs of the body does not now excite alarm. If we have not yet settled the precise relations between ovulation and the catamenial flow, and if histology has not quite decided the nature of the periodic changes in the uterine mucosa, at least we are sure that the menstrual blood is devoid of poisonous properties and that it is not a compound of various miasms that would prove fatal if permitted to collect in the female organism. Duroy, in the *Journal de médecine de Paris* for March 14th, points out also that we have recovered from the Oriental and early Jewish notions of impurity and disgrace attached to the monthly function, notions which persisted well into our era. A normal woman, we know now, should pass through the menstrual period without

pain, without difficulty, without change in her usual habits.

It is no longer necessary to enforce the traditional and mistaken prohibitions of physical exercise and bathing; only the delicate subject need fear abrupt changes of temperature, says Duroy, the sudden contact of cold water, bathing, long walks, dancing, golf, or riding. The wise physician may prescribe, if he sees fit, many a drug formerly thought to be dangerous to the woman unwell, purgatives, hemostatics, hypertensive agents; perhaps he would not use a drug like calcium chloride which affects the coagulability of the blood, but that is one of few rare exceptions. While it is possible that a menstruating woman is uncommonly susceptible to erysipelas or septic fever, she is not so to other infections. Women should keep the dates of their periods in their memories, as much to insure regularity as to be certain of the exact time of the beginning of pregnancy. Women have a singular inaccuracy of memory regarding this function and are especially liable, says Duroy, to confound dates in the months ending in -ber. Above all, concludes our colleague, let not the genital toilet be abandoned; while injections may be intermitted, although many women keep them up with comfort, external washing should be scrupulously done twice daily.

THE ABBOTT METHOD IN SCOLIOSIS.

After being subjected to the most careful tests here and abroad in many hundreds of cases, the Abbott method of treating scoliosis by overcorrection is in a fair way of being accepted generally by orthopedic surgeons with all the modest claims made for it by the author in his historic communication to the New York Medical Journal for April 27, 1911. Dr. J. Torrance Rugh, of Philadelphia, in the *Pennsylvania Medical Journal* for March, 1914, narrates his experiences with the method and advocates placing patients in front of a mirror to teach them how to hold themselves in the proper position. Stout subjects, he says, yield much more readily than thin ones. Doctor Rugh concludes that the Abbott method is undoubtedly the most satisfactory and the best means of correcting these difficult and most lamentable cases of spinal deformity that we know at the present day, and that Americans should be proud of the fact that such an effective method of treatment has been originated and perfected by one of our orthopedic surgeons.

Obituary.

EGBERT LE FEVRE, M. D.,
of New York.

Doctor Le Fevre died suddenly of scarlet fever complicated with an unusually severe angina, at his residence, 40 West Seventy-second Street, on March 30th, in his fifty-sixth year. He was born in Raritan, N. J., in 1858 and was educated at Rutgers College, taking the bachelor's degree in 1880 and the master's in 1884. Meanwhile he had attained the doctorate in medicine at the New York Medical College and subsequently served as intern at Bellevue Hospital till 1885. In 1888 he became clinical lecturer on the practice of medicine at New York University and from 1890 till 1898 was professor of that subject, becoming then associate professor in therapeutics, professor of clinical medicine, and dean of University and Bellevue Hospital Medical College. In 1910 Rutgers conferred on Doctor Le Fevre the degree of Sc. D., while New York University gave him that of LL. D. He was visiting physician to the City Hospital and Bellevue Hospital and consulting physician to Beth-Israel Hospital.



DR. EGBERT LE FEVRE,
Dean of New York University Medical College.

Doctor Le Fevre was a giant in stature and one of the best liked physicians among the immense number in New York, by both colleagues and laymen, and enjoyed great popularity among the students with whom he was constantly in sympathetic touch. His extraordinary magnetism and friendly attitude toward profession and public, and his unusual teaching ability will cause him to be greatly missed. He was a writer of distinction and his *Physical Diagnosis*—a subject of which he was an acknowledged master, both as exemplar and teacher—was a highly appreciated work of merit, while his frequent editorial contributions to the New York Medical Journal and his articles in other periodicals were much esteemed for their style and quality. Doctor Le Fevre is survived by a widow.

News Items.

Change of Address.—Dr. J. T. Ainslie Walker to Room 1338, Whitehall Building.

Dr. Leopold D. Weiss to 116 West Fifty-ninth Street.

Dr. Benjamin Jablons, to 216 East Fifteenth Street, New York.

St. Vincent's Hospital Alumni.—At the next regular meeting of this association, to be held at the Yale Club, New York, Wednesday, April 8th, at 8:30 p. m., Dr. Charles Edward Nammack, of the visiting staff of the hospital, will read a paper on the Management of Cardiorenal Disease.

A Memorial to the Late Dr. S. Weir Mitchell.—On Tuesday evening, March 31st, a meeting to do honor to the memory of Dr. S. Weir Mitchell was held in the Hall of the College of Physicians, Philadelphia, under the auspices of that college, the American Philosophical Society, the Jefferson Medical College, and the Academy of Natural Sciences. Addresses were delivered by Dr. Talcott Williams, of New York, Dr. William H. Welch, of Baltimore, and Mr. Owen Wister, of Philadelphia.

Motion Pictures at the New York Academy of Medicine.—At a special meeting of the New York Academy of Medicine, to be held in Hosack Hall, on Monday evening, April 6th, Dr. Gustave T. Monod, of Vichy, France, will, by invitation, present a film from the Marcy Institute of Paris showing athletes in action. The movements of the intestines under artificial circulation will also be demonstrated by motion pictures. There will be a general discussion of the subjects presented, among those participating being Dr. Max Einhorn, Dr. Jacob Kaufman, Dr. George R. Lockwood, Dr. Lewis Gregory Cole, Dr. E. W. Caldwell, Dr. J. W. Draper, and Dr. Edward Quintard.

Honors for Doctor L'Esperance.—A farewell reception will be given Dr. Elise S. L'Esperance, this year's winner of the Mary Putnam Jacobi Fellowship, this afternoon, April 4th, at the residence of Dr. Emily Dunning Barringer, 828 West End Avenue. All women physicians are invited to meet Doctor L'Esperance and Dr. Alice Rohdè, the first winner of the fellowship. The Mary Putnam Jacobi Fellowship Fund was raised through the efforts of the members of the Women's Medical Association of New York City, many of whom had been pupils of Doctor Jacobi at the Women's Medical College of the New York Infirmary. It is open to all women graduates in medicine. Doctor L'Esperance sails in April to continue her cancer research work which she is pursuing under the direction of Doctor Ewing, of Cornell.

Mortality Statistics of New York.—During the week ending March 28, 1914, there were 1,768 deaths from all causes reported to the Department of Health of the City of New York, with a death rate of 16.52 in a thousand of population, compared with a rate of 16.12 for the corresponding week in 1913. The deaths from the following causes showed a decreased mortality: Scarlet fever, whooping cough, diarrheal diseases under five years, pulmonary tuberculosis, and deaths from violence. The number of deaths reported from acute respiratory diseases was the same as last year. The following causes showed an increased mortality: Measles, diphtheria and croup, cerebrospinal meningitis, typhoid fever, organic heart diseases, Bright's disease and nephritis, diseases of the nervous system, and all other causes.

The Frawley Heroine-Cocaine Bill was passed by the Senate of the New York State Legislature on March 25th and by the Assembly on March 27th, the last day of the session, and now awaits the signature of the Governor to become a law. This bill, which differs materially from that commented on in a recent issue, places heroine under the same restrictions as cocaine, but makes an infraction of the law a felony instead of a misdemeanor, with a minimum penalty of two years' imprisonment. Under this bill the mere possession by other than pharmacists, physicians, veterinarians, or dentists, of heroine or cocaine, or preparations thereof, constitutes a misdemeanor unless the possessor has a certificate from the dispenser. The remainder of the bill coincides with the present cocaine law, except that heroine and its salts are included. Under this law the physicians may not have more than one and one eighth ounce of the drug in his possession at one time and shall keep a record of the purchases of such drugs in a book specially provided for this purpose in which shall be recorded the place where the drug is kept.

A Bichloride Tablet Law for New York State was enacted at the recent session of the Legislature and awaits the Governor's signature. The bill was introduced by Senator Heffernan, of Brooklyn, and in its amended form prohibits the sale at retail or the gift of bichloride of mercury, except on the prescription of a physician. If sold in tablet form, the tablet must be colored green and have the shape of a coffin. The law is to go into effect July 1, 1914, if signed by the Governor. This particular shape has been patented and the patent deeded to the American Pharmaceutical Association, with a view to prevent its being monopolized by any one manufacturer.

Medical Association of the Greater City of New York.—A special meeting of this association, under the direction of Dr. L. Howard Moss, chairman for the Borough of Queens, will be held at the Forest Hills Inn, Forest Hills, Long Island, on Monday, April 6th, at 8:45 p. m. Dr. J. Wallace Beveridge will demonstrate a new gastrograph, to record the muscle tone of the stomach and to outline ulcers. The Use of the Champetier de Ribes Bag and of Pituitrin in Obstetrics is the title of a paper which will be read by Dr. George L. Brodhead and discussed by Dr. J. Clifton Edgar, Dr. William H. Wellington Knipe, and Dr. William M. Stone. Dr. Harlow Brooks will read a paper on the Significance of High Blood Pressure, which will be discussed by Dr. Reynold Webb Wilcox, Dr. Thomas C. Chalmers, and Dr. Louis Faugères Bishop.

Clinical Lectures at the Skin and Cancer Hospital.—The governors of the New York Skin and Cancer Hospital announce a course of six clinical lectures to be given in the outpatient hall of the hospital during the month of April. The first five lectures will be given by Dr. L. Duncan Bulkley, Wednesday afternoons at 4:15 o'clock, on the subject of syphilis, and the last lecture in the course will be given by Dr. William Seaman Bainbridge, on Thursday afternoon, April 30th, on cancer. Doctor Bulkley's first lecture, given on Wednesday afternoon, April 1, dealt with primary lesions, genital and extragenital—innocent syphilis. Subsequent lectures will deal with early and late manifestations of syphilis, marital and hereditary syphilis, and the treatment. Doctor Bainbridge's lecture will be on Some Practical Phases of the Cancer Problem.

The Boylan Narcotic Bill passed both houses of the New York State Legislature on the last day of its session, March 27th, and will undoubtedly be approved by the Governor, as he urged its passage. The most interesting features of the bill from the physician's point of view follow: No one is allowed to sell or give away any chloral, or opium, or any of its salts or derivatives or preparations thereof except on the written prescription of a physician, veterinarian, or dentist; domestic and proprietary remedies containing not more than a specified quantity of the drugs being excepted. The prescription must give the full name of the prescriber, his office address, office hours, telephone, and the name, age, and address of the person to whom such prescription is issued and the date thereof. It is unlawful for any physician to write any such prescription except after a physical examination of the person under treatment. No prescription may be dispensed containing more than four grains of morphine, two grains of heroine, six grains of codeine, or four drams of chloral without the dispenser first verifying the prescription by consulting the prescriber by telephone or otherwise. The dispenser is also required to place upon the package a label or deliver therewith a certificate stating the name and address of the prescriber, of the seller, and of the purchaser, and the date. None of the drugs named may be sold to a physician except on an order written on an official order blank provided by the State Commissioner of Health. Physicians are required to keep on file a record, to be preserved for five years, of the name and addresses of persons to whom such drugs have been sold or administered. Hypodermic syringes and needles may not be sold except upon the written prescription and the name and address of the purchaser must be recorded as now provided by ordinance in New York city. The constant use of any habit forming drug, except under the direction of a physician, is declared dangerous to the public health, and on complaint and after due notice and hearing, any magistrate shall commit such person to a State, county, or city hospital, or institution licensed under the State Lunacy Commission. The license of any physician who is proved to be addicted to narcotic drugs will be revoked after hearing, to be restored after cure of the habit.

Pith of Progressive Literature.

MÜNCHENER MEDICINISCHE WOCHENSCHRIFT.

February 3, 1914.

Precipitating Effect of Blood Serum on the Lipoids of the Tubercle Bacillus.—L. Preti has found that the blood serum of patients with tuberculosis, precipitates when brought in contact with the lipoids of the tubercle bacillus. This occurs in the majority of cases. Precipitation does not take place if the serum is derived from a patient who is not tuberculous.

Dialysis Method in Clinical and Biological Experimentation.—E. Abderhalden emphasizes the fact that the dialysis method gives trustworthy results only when one is thoroughly familiar with the method and knows the sources of error. The chief source of error is a defective parchment dialyser. Abderhalden has attempted to obviate it by separating albumin bodies digested by means of coagulation and ultrafiltration. The second source of error is the nonuniform character of the substrate used. In the placenta, bloodvessels and connective tissue are practically more or less foreign to the test. This could be obviated only by a preparation of pure albumin, which is impossible in our present state of knowledge. Organs taken from diseased cadavers vitiate the test. The ferments coming apparently from the organs themselves appear in the blood stream as soon as the substrate when, for some reason or other, it arises in the organism.

Absorption of Reacting Substances in the Abderhalden Test.—F. Plaut points out a new source of error in the Abderhalden reaction; portions of organs added to the serum absorb and retain certain substances. Through this physical nonspecific absorption an increase or diminution of substances which react with ninhydrin takes place, and may lead to false diagnostic conclusions. He has proved by the addition of inorganic substances as kaolin, barium sulphate, talcum, and silicates, that absorption takes place which affects the dialysate contents of reacting substances.

Emetin Treatment of Dysentery.—M. Mayer reports a case of clinically severe dysentery which had lasted for several weeks. Microscopically only Lamblia intestinalis and spirochetes were found in large numbers. Injection of emetin hydrochloride brought about immediate cure. In fact the first injection of 0.05 gram sufficed to bring about a clinical cure.

Radiotherapy in Gynecology.—M. Henkel denies that mesothorium or radium has an elective influence on the cancer cell. Large doses injure even normal tissue. Since it is impossible to penetrate deeper than four or five cm. he would recommend that only small doses, 100 to 200 mg., be employed. The filter method is difficult, modern brass filters causing a loss of three per cent. of the gamma rays. With good technic excellent results can be obtained in local affections. Subsequent intravenous enzytol injections seem to be the best method of preventing glandular and other metastases. The x ray cannot, at the present time, supplant radium or mesothorium.

Jaundice and Extrauterine Gestation.—H. Schottmüller discusses the relation of hemolysis to jaundice, especially the form occurring in pregnancy. When infections are present, hemolysis following, gives rise to the appearance of hemaglobin or methemoglobin in the urine. These substances can also be found in the blood serum and are best demonstrated with the spectroscope. As a result of a ruptured extrauterine gestation sac examination of the serum shows blood derivatives as well as bilirubin. The presence of bilirubin in the blood is occasionally of value in the differential diagnosis between pulmonary infarct and pneumonia. In croupous pneumonia bilirubin seems to be invariably present in the serum. In pernicious anemia hematin is present also in chronic hereditary jaundice. He would classify these conditions as hematohepatogenous icterus. Blood derivatives present in the serum as a result of hemorrhage disappear as a rule after four days. To differentiate between jaundice due to bile derivatives and that secondary to hemolysis, the spectroscope is of decided value. As a result of infection methemoglobin occurs, but when hemorrhages have taken place, hematin alone seems to be present.

February 10, 1914.

Blood Serum after the Application of X Ray.—S. Wermel finds that the action of x ray causes horse serum to be photoactive. Horse serum causes the same cutaneous and leucocytic reactions in animals as direct application of the rays. The therapeutic value of the x ray serum opens up many possibilities.

Bronchotetany in Adults.—H. Curschmann asserts that he was the first to call attention to the syndrome of "intermittent Basedow bronchial asthma" and detect the presence of Chvostek's symptom, as well as other spasmophilic symptoms, in isolated cases of infantile bronchial asthma. He attempted to apply to adults calcium therapy, which is so efficient in the treatment of these conditions, and reports a case where administration of one gram of calcium lactate three times daily brought about a complete disappearance of the tetanic symptom complex.

Systolic Shock in Subclavicular Arteries and Aortic Sclerosis.—C. Trunececk describes this symptom occurring with sclerosis of the thoracic aorta. It consists of an abnormally intense pulsation of the subclavicular arteries; the intensity and extent being a measure of the involvement of the sclerotic process. He maintains that this symptom is very constant.

Production of Abnormal Leucocytic Pictures.—O. Veraguth and I. Suyderhelm contribute a new method of influencing abnormal leucocytic pictures. After an application of either the galvanic, sinusoidal or faradic current for about fifteen minutes, a marked descent of the leucocyte count occurs in cases of myelogenic leucemia.

Treatment of Hemorrhagic Metropathies with Thyroid Substance.—E. Sehrt has treated twenty-five cases of pure hemorrhagic affections of the uterus with iodothyrin. In all, after a shorter or longer period, a decided improvement was observed. Characteristic complaints such as palpitation of the heart, headache, etc., were occasionally improved after the first few doses. Leucopenia, which accompanies this condition, disappears after a few weeks of medication. Hemorrhages cease or be-

come normal even after medication has been discontinued, proving the causal relations of thyroid insufficiency and hemorrhagic metropathies.

Results with Mesothorium in Cancer.—A. Doederlein and E. von Seuffert report their results with mesothorium in 180 cases of carcinoma. Of 153 patients observed during the course of the last year only twenty-four have died. One fatal case may perhaps be attributed to the mesothorium treatment. In thirty-one cases complete clinical cure was effected, of which twelve were considered surgically inoperable. Ninety-eight are still under treatment or under observation. In carcinoma of parts of the body other than the female genitalia, the results have not been as good. There are no hard and fast rules that can be followed in the administration of this remedy. As a rule moderate doses of 100 to 200 mg. were employed. The capsules containing mesothorium were never allowed to remain more than two days. This prevented any excessive injury to the normal tissues. The pains or general disorders appearing during treatment are due to the lesion and not to the remedy.

Blood Examinations in Pertussis.—W. Schneider describes the following changes that may be observed in the blood picture of pertussis. These are present even in the early catarrhal stages. First, a general leucocytosis which reaches its height about the third week, the total count being about 27,000. In one case, a count of 85,800 was found. Secondly, the lymphocytes are relatively increased during the first four weeks of pertussis. The average is between fifty-eight and sixty-three per cent. The large mononuclears and transitionals also show a slight increase, the count equalling 6.2 per cent. It is not possible as yet to draw any prognostic conclusions from the blood examination.

February 17, 1914.

Treatment of Peritoneal Adhesions.—F. Kroh has described a new method of massage which he terms suction massage. It consists of an arrangement whereby large suction cups are placed on the abdomen and suction maintained with a water pump. By means of this manipulation the intestines at the site of the application of the cup, as well as in the more remote parts of the abdomen, are exposed to traction. The hyperemia produced aids in the dissolution of the adhesions.

Abderhalden's Dialysis Method.—E. de Waele suggests a substitute for the toluol commonly employed in carrying out the test. He uses hydrogen peroxide which has been exactly neutralized. This has the objection that it interferes with the ninhydrin action, while chloretone and thymol have the disadvantage of interfering with the biuret reaction. To prevent evaporation of water, the author suggests that a vessel containing water be placed within the incubator. The slightest infection of the serum is a very important source of error in carrying out this test.

Specificity of the Abderhalden Dialysis Test.—Hugo Singer denies the specificity of ferments, produced by parenteral introduction of albumin bodies, on the ground of experiments in rabbits and man. After the introduction of native serum albumin as well as after the production of a hematoma, he found that ferments were produced which acted upon the liver, muscle, and placenta. He seeks to explain the occurrence of a positive reaction during menstruation on this basis.

Lead Poisoning by Means of Water Pipes.—A. Schwenkenbecher was led to investigate the possibilities of poisoning through the water supply because of a case having the typical symptoms of lead poisoning. Examination showed that the water supply of the village from which the patient came contained lead. Of the twenty-six inhabitants, twelve had positive symptoms, six suspicious symptoms, while eight, all of whom were children, had no symptoms whatever.

Tuberculous Caries of the Ribs and Sternum.—R. Bittrolff reports good results in tuberculous caries of the ribs and sternum after the use of the x ray. In one half of the cases complete cure seems to have been obtained. The best method seems to be surgical removal of the affected portions of bone or thorough curettage with a sharp spoon after which x ray treatment is begun. The dose is one to two milliamperes of the secondary current strength. A one to 1.5 millimeter thick aluminum filter is used; single doses are equal to one Sabouraud dose.

Larosan Milk in Feeding Sick Babies.—W. Wegener considers that larosan milk is an excellent substitute for albumin milk. It is considerably cheaper and is much more easily prepared. It has also proved of decided advantage in intestinal disorders even of older children. It is prepared as follows: One sixth of a litre of milk is taken and stirred with twenty grams of larosan. Then a half litre is added and boiled for ten minutes and stirred continuously. It is then filtered through a fine sieve, and an equal quantity of water, with a small amount of sugar added.

Serodiagnosis of Infectious Diseases.—Ernst Voelkel has extended the principle underlying the Adberhalden diagnosis test to the diagnosis of bacterial infections. He prepared substrates of typhoid, diphtheria, and anthrax bacilli from agar cultures. He obtained trypanosome proteid from the blood of an infected guineapig by means of centrifugation. He also carried out experiments with spirochetes, using as a control horse serum, since he was unable to separate the organisms from their culture media. His results with the typhoid bacillus were very favorable, also with serum from human beings infected with syphilis. In the case of all other bacilli the experiments did not turn out favorably.

Adrenaline Sensitiveness in Dementia præcox.—W. Schmidt has found that cases of dementia præcox, especially the catatonic and hebephrenic forms, are not sensitive to injections of adrenaline, i. e., the blood pressure does not seem to be affected. Normal individuals as well as those affected with other psychoses react to the subcutaneous administration of adrenaline by marked increase of blood pressure.

Albumin Splitting Ferments in Advanced Hunger.—E. Heilmer and F. Poensgen have been able to prove experimentally that in early stages of hunger when the increase of nitrogen coincides with the disappearance of glycogen, no proteolytic

ferments are demonstrable in the blood. In advanced stages of hunger there suddenly appears in the blood an active proteolytic ferment which is followed ante mortem by an increased nitrogen coefficient.

Staphylococcus Sepsis.—L. Jacob reports eight cases of generalized staphylococcic septicemia in which the portal of entry was not the skin, as so commonly observed. In five of these cases infection was secondary to infection of tonsil, intestine, and bronchiectatic cavity. In these cases metastases, which are a common accompaniment, were absent. He emphasizes the importance of repeated bacteriological examinations of the blood as well as of the urine. Absence of staphylococci in the urine does not exclude severe infection of the kidney. As a rule these conditions, when mild, result in severe parenchymatous disease of the kidneys. In some cases, a hemorrhagic pustular rash is to be considered more or less pathognomonic of staphylococcus infection.

Thyroid Insufficiency and Nervous Complaints with Spastic Obstipation.—Ernst Sehrt calls attention to the benefits of iodothyrin in the manifold nervous complaints of women. He considers that many cases of infantile uterus and severe menorrhagia, with long continued sterility find their cause in a hypothyrosis. He suggests that in these cases a preliminary blood examination after Kocher be made to determine a relative neutrophile leucopenia with a relative lymphocytosis. The dangers of a Graves's disease arising from this medication is a factor not to be neglected. The action of iodothyrin in these cases is that of a regulator. For this reason, spastic constipation is to be considered the direct opposite of diarrheas observed in hyperthyrosis; it is amenable to treatment on the same basis as thyroid medication.

Erysipelas and Diabetes.—A. Welz reports two cases of erysipelas followed by a severe diabetes, and discusses the possibility that these cases are an example of an exogenous cause of this constitutional disturbance, brought about by toxic changes in the hereditarily weakened islands of Langerhans.

Pregnancy Anemia.—Paul Jungmann maintains that anemia met with in pregnancy is due to a toxin which acts only on the maternal organism. This anemia appears only in the last months of pregnancy. That it is of hemolytic nature is evidenced by rapid and increased destruction of red blood cells. An extensive irritation of the blood forming organs may change the blood picture; possibly the toxic destructive factor also affects the fetal organism. If the destruction is great and regeneration imperfect, regeneration first takes place after pregnancy is over.

LYON MÉDICAL.

February 22, 1914.

Encephalomeningeal Disorders in Neurasthenia.—Maurice recognizes three groups of cases: 1. Acute, coming on in the menstrual period, and characterized by a more or less marked maniac or epileptoid seizure. 2. Occipital headache, with rigidity of the neck muscles, weakness, dizziness, auditory disturbances, and bradycardia. These patients, of either sex, are generally at the climateric period, and always present a disorder of the antitoxic organs (liver, kidneys, etc.), manifested in transitory albuminuria. 3. Cases with a paretospasmodic condition of the lower limbs, abundant phosphaturia, and marked subnormal blood pressure, are sometimes complicated by excessive sensory irritability and psychic symptoms. Such patients do not require psychotherapy, but rest, mental distraction, hygienic measures, and out of door life. A mixed diet of appetizing food is to be given. Medicinally, combined use of nuclein and strychnine is indicated; opium and bromides are to be avoided. For evidence of excessive neuromuscular irritability, picrotoxin and arsenic in small amount are indicated. Hydrotherapy is applicable only to portions of the body at a time, and the temperature of the water should be gradually lowered from 32° to 24° C. Purgatives should not be given, but lactic ferments, enemas, and injections of small amounts of saline solution.

PARIS MÉDICAL.

February 28, 1914.

Early Spinal Syphilis, with Bulbar Phenomena.—A. Legris and J. Benech report the case of a man twenty-one years of age who, only four months after the first appearance of secondary syphilis, showed pronounced motor weakness in the lower limbs, with loss of reflexes, muscular twitchings in the legs, thighs, and abdomen, soon after extending to the arms, and diminished superficial and especially deep sensation. A general ecthymatous eruption was present at the same time. This patient had received three injections of 0.3 gram of salvarsan soon after the appearance of secondary symptoms. In spite of further treatment with mercury and neosalvarsan, ocular and speech disturbances, facial tremor, dysphagia, and marked paresis of the upper extremities supervened. Sphincter disturbances, rapid emaciation, projectile vomiting, tachycardia, cardiac arrhythmia, and tachypnea (80 respirations a minute), together with expansive delirium, followed soon after. Six injections of 0.6 gram of neosalvarsan and seventeen daily intramuscular injections of 0.03 gram of mercury biniodide were thereupon administered, before improvement set in. Under further vigorous treatment, in the aggregate comprising 2.7 grams of salvarsan and over one gram of biniodide within a month, without any toxic effects, practically complete recovery took place, the patient entering upon his military service without difficulty.

PRESSE MÉDICALE.

February 28, 1914.

Diagnosis of Bradycardia of Nervous Origin.—Petzetakis states that although the atropine test—one thirtieth grain being given—is positive in many cases of bradycardia of nervous origin, there are cases not of myocardial origin in which the test is entirely negative. Inhalation of amyl nitrite gives more constant results, sometimes causing an acceleration of more than twenty beats a minute where atropine has no effect. In the same category the author would place the test made by pressure on one or both eyeballs. This gives a slowing of the cardiac rate only where bradycardia is of nervous—exocardiac—origin; the test should be considered positive where slowing equals or exceeds five beats a minute. The results corresponded to those of the

amyl nitrite test. Compression of the right eyeball causes more slowing than compression of the left. Total pauses in heart action lasting five to six seconds may thus be produced. The production of auriculoventricular dissociation is a frequent result of ocular compression in total bradycardia; it occurred in 37.5 per cent. of the author's cases. Atropine is capable of causing this same disturbance, or possibly a nodal rhythm, either during the primary pulse slowing which it causes or during the period of acceleration. The oculocardiac reflex is abolished by atropine, showing that the customary centrifugal pathway concerned is the vagus. The centripetal pathway appears to be the trigeminal nerve.

March 4, 1914.

Surgery of the Cardiac Orifices.—A. Carrel and T. Tuffier discuss the possibilities of surgically enlarging stenosed valve openings. In a case of aortic stenosis recently operated in, an attempt was made to enlarge the orifice by forcing a finger through it; the patient felt better as a result. The authors report experiments in dogs with what they term "external valvulotomy," an incision being made directly into and above the valve lumen and a piece of vein or artery (previously kept on ice) sutured over the incised area. Three sides of the "patch" were sutured on before the incision was made, leaving but one side to be sutured while blood is escaping. Loss of blood was largely prevented by clamping the great veins; this could be continued for three and one half minutes without causing death, though the actual suturing of the fourth side of the patch occupied but twenty seconds, leaving a large margin of safety. Of four dogs in which patching of the incised pulmonary artery was effected, but one succumbed—owing to air embolism.

BRITISH MEDICAL JOURNAL.

March 14, 1914.

Intrathecal Injections in Syphilis of the Nervous System.—Harry Campbell uses a method somewhat modified from Swift. He first gives a dose of 0.9 gram of neosalvarsan, by vein, and at the same time starts with a course of mercurial treatment. One week later the dose of neosalvarsan is repeated, "And two hours later four ounces of blood are drawn off from a vein by means of a syringe and transferred to a four ounce bottle duly sterilized. The bottle is then placed in a jar containing a one in twenty carbolic solution, and set aside in a cool place. After twelve hours the serum has separated sufficiently for injection. It will be found to be somewhat stained with hemoglobin and to contain a few erythrocytes, but no harm comes from the injection of these." This method of obtaining serum is preferable to centrifugation; it offers less chance for bacterial contamination. The results of treating syphilis of the nervous system in this manner—intrathecal injection of salvarsanized serum—have been very satisfactory in the hands of the author. There was a prompt fall in the leucocytes of the spinal fluid, a positive Wassermann reaction in the spinal fluid was converted into a negative one in several cases, and reduced in others. In four tabetic cases the patients all gained in weight, from six to twelve pounds. It is known to be very difficult to make this type of patient increase in weight. Where ataxia and Rombergism were previously present, both of these symptoms showed a marked improvement. For the first twelve hours after the intraspinal injection lightning pains, when previously present, were exaggerated, but they soon disappeared. In one patient the lost knee jerks not only returned after the treatment, but they were even exaggerated. In all cases with urinary symptoms these showed improvement, and the general health of nearly all the patients improved. The author concludes with the remark that, "In parenchymatous syphilis the intrathecal treatment is the only one yet devised which is capable of arresting the morbid process. It acts by destroying the spirochetes within the central nervous system and the cerebrospinal fluid. The treatment should be begun as early as possible."

Arsenic Therapy in Syphilis; "Galyl."—J. Johnston Abraham quotes Mouneyrat that death in acute salvarsan poisoning is due to an "intense congestion, with minute hemorrhagic foci in the brain, liver, kidneys, spleen, and lungs." Salvarsan and neosalvarsan may cause hemorrhagic meningoencephalitis. Delayed salvarsan poisoning is due to the fact that the drug is neurotropic, and, in spite of statements to the contrary, a certain proportion of each dose becomes fixed in the nerve tissues. The toxicity is due to functional groups in its molecule which render it vasodilator, and which anchor it to the nerve tissue; not to its arsenic content. Abraham believes that there is considerable clinical evidence to support these views. Though he has had very excellent results from the use of salvarsan and neosalvarsan, Abraham has seen fit to try a new arsenical, "galyl," which is tetroxy-diaphosphamino-diarsenobenzene. It has an arsenic content of thirty-five per cent. along with a little more than seven per cent. of phosphorus. "As sent out for intravenous injection in ampoules, it is a light yellow powder consisting of galyl and an appropriate amount of sodium bicarbonate to make it easily soluble in distilled water, forming an isotonic solution. It must be prepared immediately before use. The average dose for a man is 0.45 gram for the first, 0.5 gram for the second, 0.55 gram for the third injection; for a woman 0.4 gram, 0.5 gram, and 0.5 gram. The dose is calculated as being eight to 8.5 milligrams to kilogram of body weight in the adult male, and seven to 7.5 milligrams in the female. For solution, thirty c. c. of distilled water per decigram is used—that is, 150 c. c. for 0.5 gram." Without wishing to generalize from a few cases, the author finds that it is as well borne and effective as salvarsan, and that it has the same contraindications. From his large experience with arsenicals in syphilis, Abraham comes to the conclusion that neosalvarsan is not nearly as powerful as salvarsan, as judged by the Wassermann reaction. Its only advantages seem to be its solubility and its neutral reaction.

LANCET.

March 14, 1914.

Causation of Surgical Shock.—A. Rendle Short discusses existing theories of the causation of surgical shock in considerable detail. Of Crile's theory he says, "It is scarcely going too far to say

that the theory is beyond doubt erroneous. It has been maintained by a number of competent observers, both on clinical and experimental grounds, that the peripheral arteries may be contracted, not dilated, during shock, and that the vasomotor centre is not necessarily exhausted, even in extreme shock." These latter observations are well supported by the author's citations. Short also says that he has been compelled to abandon the theory of acapnia as postulated by Yandell Henderson, for the following reasons. That the hyperpnea from painful stimuli is insufficient and is not prolonged enough to reduce the carbon dioxide in the blood from the normal of forty to fifty per cent. to ten per cent., as was found in some of Henderson's analyses in animals. That if the theory were true, shock would be impossible in cases where a Clover inhaler was used; but no one will contend that it is possible to prevent shock in any operation, however severe, by keeping the patient blue. That in animals in acapnia it was impossible to save their lives by carbon dioxide. In addition, a study of the carbon dioxide content of the human blood does not show any noticeable reduction below the normal average, five cases in severe shock being compared with five cases which were either normal or without any signs whatever of shock. Similarly, the oligemia theory of Cobbett and Vale cannot be accepted as an adequate explanation of shock, because shock often occurs without any rise in the specific gravity of the blood, and further because saline infusions often fail to have any beneficial effect. The suprarenal exhaustion theory also fails when tested on man, as the author's results showed neither a flooding of the blood with epinephrine during surgical operations, nor an exhaustion of the suprarenal glands in patients dying from shock. Basing his views in part on some recent observations by Pike, and in part on his own study of cases of shock, Short says, "Without venturing to formulate a cut and dried theory, then, one may suggest that the nociceptive impulses which bring about surgical shock do so by inhibiting or paralyzing the important nuclei in the region of the fourth ventricle and perhaps in the cerebellum, which, as Sherrington and others have shown, are continually sending impulses down the spinal cord, maintaining its functional activity and increasing muscular tone. When such inhibition or paralysis takes places the functions of the cord are greatly reduced, tone is abolished, and, therefore, as a secondary result the blood pressure may fall. The respiratory centre, and perhaps even the vasomotor centre, share in this inhibition or paralysis; this is a very different conception from that which takes exhaustion of the vasomotor centre to be the prime cause of all the symptoms. Death is due to accumulation of blood in the great veins, so that the *vis a tergo* is no longer able to provide a proper filling for the heart, especially as the feeble respiratory movements fail to exert their important pumping action." This affords an explanation of the low blood pressure simultaneously with constriction of the arteries. It has the disadvantage of rendering treatment less hopeful.

Ambulant Treatment of Fractures.—Professor Hackenbruch has adapted the Kaefer clamps to the more efficient immobilization of fractures by connecting the fastening wings to the extension bars by means of ball joints which may be set in any desired position. A plaster of Paris splint is applied to the extremity, over pads of pulverized rubber placed near the joints to prevent necrosis from pressure. When set the plaster is divided circularly at the point of fracture and the two extension bars are applied laterally, the ends being incorporated in a second layer of plaster dressing at each end of the extremity. Later, slowly increasing extension is made by turning the screws of the extension bars until finally the two ends of the bone are definitely separated. Then, under x ray the fragments are adjusted properly with relation to one another and the ball joints are set by means of a screw in each. Such a dressing is not carried beyond the joint, either above or below the fracture, and holds the parts in position so securely that the patient can begin to get about with the aid of a cane or crutch from the first.

Recurrent Intussusception.—H. Tyrrell Gray suggests several possible causes of this unfortunate condition, all of which are based on actual findings or reported cases. Enteritis causes chronic enlargement of Peyer's patches; these in turn act much like polypi, making an object upon which the peristaltic waves can act. Further, in intussusception starting at the lower end of the ileum, a mass of enlarged mesenteric glands is uniformly present and supports this view. General infections may cause intestinal colic, and it has been shown that there is not infrequently an exudation of serum in one or more areas of the small intestine, analogous to exudations in the skin. Such an exudation into the wall of the intestine creates an inert area, and colic completes the condition of formation of an intussusception. It is not always necessary that the infection be severe, and in a case reported in the paper, Gray suggests that it was associated with a mild infection of the tonsils.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

March 21, 1914.

Influence of Diet on Hepatic Necrosis and Toxicity of Chloroform.—E. O. Opie and L. B. Alford state that their experiments furnish evidence that fat administered to animals, and presumably stored in part in the liver, increases its susceptibility to the injurious action of chloroform. In view of the solubility and diffusibility of chloroform in fats, they suggest that the liver cell fat determines the fixation of choloroform and occurrence of necrosis. Experiments with carbohydrates, on the contrary, confirm the views of those who hold that carbohydrates protect the body proteins from disintegration. Since necrosis of the liver and a variety of conditions, toxemia of pregnancy, acute yellow atrophy, yellow liver, and poisoning with various substances, exhibit close similarity to the necrosis of chloroform, a carbohydrate diet may be found to influence favorably the course of these affections, whereas fat may have grave danger.

Artificial Pneumothorax.—M. Schaie presents a summary of forty-five cases at the Montefiore Home Country Tuberculosis Sanitarium at Bedford Hills, N. Y. Many of the patients were in

a desperate condition. A complete pneumothorax was obtained in twenty-one cases, a partial pneumothorax in eighteen, while in six there was complete failure to find the pleural cavity. Eight cases have given brilliant results: marked reduction of temperature, of pulse rate, and sputum output, and gain in weight, etc. Nine deaths occurred. Various other statistics are reported, and special points referred to.

Intraspinal Injection of Salvarsanized Serum in Paresis.—J. A. Cutting and C. W. Mack present a preliminary report of this treatment in the Agnew State Hospital, California. The method used was that of Swift and Ellis. An attempt was made to select early cases, but these are rarely found in such an institution. Seven cases are given in detail. The neurological findings show no marked alteration following the treatment, and a review of the mental symptoms is very encouraging. The Wassermann reaction was altered in two cases. From their experience with it, the authors feel convinced that the method of Swift and Ellis deserves a thorough trial.

Treatment of Syphilis.—H. S. Bernstein suggests that in all cases of syphilis, particularly those in the primary and secondary stage, the patient be given an intraspinal injection of salvarsanized serum as part of routine treatment. This, he says, can be regarded as a prophylactic measure, since every case of syphilis is potentially one of paresis or tabes, despite prolonged treatment.

MEDICAL RECORD.

March 21, 1914.

A New Method of Estimating the Functional Capacity of the Kidneys by Forced Elimination of Preformed Urea.—G. W. McCaskey thus describes his method: About 6 a. m. the bladder is emptied. Two hours later the urine is collected, and at the same time the patient is given thirty grams of urea, dissolved in four or five ounces of water. Just before taking the urea the patient drinks three ounces of thin cereal gruel, and three ounces immediately after. No other breakfast is taken. The urine is then collected every two hours for from twelve to twenty-four hours. The urea is determined for each two hour period, including the two hours preceding its ingestion; from these data the curve of excretion is constructed. Among the conclusions are the following: It is now established that functional impairment of the kidneys may be limited, or at least more marked, with reference to certain classes of waste products. This makes it extremely important from a therapeutic point of view to differentiate the various types of renal block, which cannot possibly be made by routine laboratory methods or by the phenolsulphonephthalein test. It is best determined by surcharging the blood with different substances and determining their rate of excretion, first over a short time, *while the blood remains heavily surcharged*, and again over a longer period, to determine the time required to depurate the blood of a morbid excess. The permeability of the kidneys for urea can be determined with great accuracy by the method described, and furnishes a scientific basis for the regulation of the proteid intake. This method is too laborious as a routine measure (for which the phthalein test is sufficient), but it has high value in selected cases in which it is desirable to know the type of renal block present.

Pineal Gland in the Treatment of Defective Children.—W. N. Berkeley quotes impartial and exactly scientific tests of pineal gland by H. H. Goddard, and expresses the conviction that it is to be remedy of great value in many cases of retarded intelligence in children. Cases showing improvement have so far been different, no similarity of facies, cutaneous nutrition, or mental condition being notable, and the search for a definite type of *hypopinealism* or *apinealism* has also been elusive.

Etiology and Surgical Treatment of Gastric and Duodenal Ulcer.—J. S. Brown says from a résumé of recent literature of chronic ulcer in these locations one gains two impressions: first, that the etiology of the disease is in doubt, and, second, that treatment by surgical intervention is entirely satisfactory. As a matter of fact, these impressions are only partially true. After reviewing the researches of various observers, he states that all are dealing with end results, and not with the primary cause. The most attractive theory is that of Lane, that ileostasis plays an important part in the etiology of ulcer; his theories do not conflict with those of investigators who regard the action of toxins on the bloodvessels as a late cause. The author's experience is that three years after operation, eighty-two per cent. of his patients are still well and without symptoms. In discussing failure his inability to differentiate an ulcer at the time of operation deprived the patient of a chance of cure by radical procedure, or pylorectomy. Other causes of failure are: 1. Imperfect technic in making the anastomosis. 2. Refusal of the ulcer, although not malignant, to heal. 3. Formation of new ulcers of the duodenum distal to the anastomosis.

A Skin Varnish and Substitute for Rubber Gloves.—E. McDonald describes a varnish which has the following approximate composition, but which requires to be standardized at the factory in regard to consistence, on account of the strange ways in which soluble cotton acts in solution: A base of pyroxylin (soluble cotton of commerce) dissolved in amyl acetate and acetone, with the addition of propyl and ethyl alcohol and saponifiable ether. The varnish is a golden yellow liquid of the consistence of maple syrup. It is readily applied and removed; is insoluble in all water solutions and not affected by the heat of the body; it adheres strongly to the hand and penetrates all crevices of the skin, fixing bacteria; it cannot be scraped off the skin with a knife. The best solvent for removal is equal parts of acetone and denatured alcohol.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN

February, 1914.

Röntgen Rays, Radium, and Mesothorium in the Treatment of Uterine Fibroids and Malignant Tumors.—Kronig believes that radiotherapy is particularly adapted to the treatment of fibromyomas, and that the best results are obtained by the largest possible doses. Small doses have the

disadvantage, that at first hemorrhage becomes more intense, lasting so long that, in anemic patients, there may be distinct danger. Of 350 cases treated with Röntgen ray, the desired result, amenorrhea, has been attained; the treatment being comparable to total extirpation or supravaginal amputation of the myomatous uterus. The great advantage of radiotherapy is that it does not endanger life. The chief disadvantage, however, is the duration of treatment, an average of five to eight sittings being necessary at eighteen day intervals. In the treatment of cancer Kronig divided his cases into three classes: 1. Those in which the carcinoma has not spread beyond the primary focus; 2, those in which the growth has extended into the neighboring tissues; 3, those in which metastases have already occurred. Up to date there has not been observed a single case of metastatic cancer cured by the technic employed. There have been remarkable retrogressions of growth in the metastases by means of intense radiation of Röntgen rays and radium, but in all cases the carcinoma has later on spread further. The writer cannot say that there has been a single patient saved. Of the second group the majority are, at all events, impossible to cure even with the most intense Röntgen and mesothorium radioactivity. The best results are obtained in the first group, and for the most part histologic examination discloses a complete disappearance of cancer.

Pituitary Extract in Obstetrics.—Lindeman recommends great care in the dose. In cases in which the cervix is not over four fingers dilated, he gives 0.05 gm. of pituitrin. At no time does he use more than 0.1 gm. as an initial dose. If 0.2 or 0.4 gm. be given and an extremely violent labor result, it is almost impossible to control the pains even by the administration of chloroform. He has had no instances in which pituitrin has brought about such powerful contractions of the uterus as to interfere with the placental circulation and cause deep asphyxiation of the child. In the induction of labor large doses, 0.1 to 0.2 gm., may be given with perfect safety. It would seem that so much of the energy of the drug is used up in starting the labor that the pains induced are never very strong at the outset, and the effect wears off before stronger pains develop.

Diagnosis and Treatment of Puerperal Insanity.—Huggins calls attention to the disturbed mental condition so common in pregnant women and emphasizes the necessity of early recognition and treatment. Although the majority recover completely, there are women who, after being in hospitals for the insane for two or three attacks, become permanently insane. The essential cause of these psychoses in the pregnant or puerperal state is a predisposition, which means mental instability, to which is added the burdens of toxemia, exhaustion, or infection. Treatment is prevention, and in all women who manifest unusual nervous symptoms during pregnancy, rest, absolute rest, is the treatment *par excellence*. Excretion should be as thorough as possible throughout pregnancy.

Surgical Shock in Obstetrical Operations.—McDonald reviews briefly but quite fully the foregoing condition, stating that the causes are: Hemorrhage, anesthesia, and afferent stimuli to the cerebral centres. Attention is called to the fact that anesthesia is frequently prolonged and although the patient is unconscious, the centres receive afferent impulses. Hemorrhage, as a rule, can be readily controlled. Strychnine is absolutely contraindicated, as its sole effect is to increase the irritability of spinal and medullary centres and to exaggerate all afferent stimuli. Necessary rest of the centres can be obtained by giving morphine in sufficient doses to overcome the effect of continued painful stimuli or harmful cerebral irritation. To raise blood pressure, normal salt solution is most valuable. It may be given by proctoclysis, hypodermoclysis or intravenously, the latter being the most rapid and efficient. Ergot and adrenaline may be given hypodermically.

Toxic Action of Pituitary Extract upon the Newly Born, Apparently through Mother's Milk.—Sheffield reports an interesting case of a newly born child that, after nursing about twenty minutes, gradually was seized with recurrent attacks of muscular contracture. These subsided, but reappeared with great severity after a feeding two hours later. As there were no other signs or symptoms to account for the spasms, which set in after the child took the mother's milk, as the muscular contractures were tonic, at regular intervals (resembling uterine contractions) the author concluded that the spasm probably was due to pituitary extract transmitted by the mother's milk. Breast feeding was stopped and the convulsions ceased very gradually within two days and did not return.

AMERICAN JOURNAL OF OPHTHALMOLOGY.

February, 1914.

The Conjunctival Flap in Cataract Extraction.—Percy Fridenberg detaches the conjunctiva over the area from which it is desired to take a flap by the subconjunctival injection of an indifferent or anesthetizing fluid, and is thus able to obtain a flap of the size desired. It is also possible to form a pocket under the conjunctiva without detaching the flap and to withdraw the knife after section has been made so that the cataract may be delivered into it and then allowed to escape through a side cut, thus making the operation practically subconjunctival.

AMERICAN MEDICINE.

February, 1914.

Are Odors and Effluvia Dangerous to Health?: a Study in Ventilation.—W. G. Anderson concludes that there is little evidence that a foul odor, *per se*, is inimical to health. A bad odor, not in itself dangerous, may yet be an index of noxious conditions. Agitating the air in confined spaces will help dispel the odor.

The House as a Factor in Tuberculosis.—B. J. Newman, after a careful investigation of this subject, recommends: 1. Requirements for sanitary surroundings to all homes. 2. Elimination of dust producing and like treacherous trades from all buildings used for human habitation. 3. The prevention of room overcrowding and building congestion. 4. Frequent and thorough disinfection of all rooms used by tuberculous patients. Every case

of tuberculosis should be registered soon after its inception, and no person suffering from tuberculosis in any form should be allowed to move to another house without first obtaining a permit from the health authorities. All such patients should be obliged to move from houses from which sunlight and good ventilation are shut off, from all buildings where sanitation is below normal, from all old tenements and lodging houses. There should be an enforced vacation and condemnation of buildings unfit, by reason of age or of insanitary conditions within their structure, until they have been satisfactorily cleansed or reconstructed and made fit. Until these precautions are taken, the author says, the antituberculosis campaign will fail to reap results commensurate with the amount of money contributed toward it.

Chronic Tobacco Poisoning and the Circulation.—E. E. Cornwall has made observations which, he says, signify little by themselves, but they contain suggestion that chronic tobacco poisoning has a disturbing effect on the vasomotor mechanism, and on the myocardium, which manifests itself by signs and symptoms resembling those of myocardial degeneration. Extended observations conducted along these lines, especially with carefully guarded functional tests of the myocardium in relation to different phases of tobacco poisoning, would seem to promise help in clearing up the subject, at present obscure, of the effects of tobacco on the circulatory apparatus.

Effect of Alcohol on Longevity.—Arthur Hunter is convinced from statistics which he quotes that abstainers live much longer than nonabstainers. Whatever may be the cause of this great difference in mortality, he believes that the advantages asserted for alcohol are a small offset to the evils which proceed from its use and abuse.

A New Sign of Gallstones.—Richard Hogner says that it is well known that gallstones produce tenderness, stiffness, etc., in the region of the gallbladder, and he has found that when a vibratory machine is put in action over the gallbladder region, it is easy to elicit these symptoms, when present, even though ordinary palpation may not detect them. He has yet to find a case in which vibration has failed to indicate the presence of gallstones. He makes use of a vibratory point of the shape and size of an olive.

ARCHIVES OF INTERNAL MEDICINE.

February, 1914

Chronic Gastric Ulcer and Its Relation to Gastric Carcinoma.—W. C. MacCarty and A. C. Broders assert that the question for the clinician and surgeon is not "Does gastric carcinoma develop on gastric ulcer and what percentage of ulcers become malignant?" but "Has the proved association of gastric carcinoma with chronic gastric ulcer sufficient significance to be of prognostic value in cases clinically diagnosticated as gastric ulcer?" Examination of 684 specimens at the Mayo clinic revealed 191 chronic ulcers without histologic evidence of carcinoma, 472 specimens of simple ulcer plus carcinoma, and twenty-one specimens of ulcer in which the presence of cancer was doubtful. The microscope, at present the highest court of appeal in the differentiation of the malignant and nonmalignant cases, can do no more than divide the specimens in the three above mentioned groups. On the whole, whenever the clinician feels positive of the clinical diagnosis of chronic gastric ulcer, he should consider that carcinoma cannot be ruled out by present methods of investigation.

Nonprotein Nitrogenous Constituents of the Blood in Chronic Vascular Nephritis.—O. Folin, W. Denis, and M. Seymour report metabolic studies in twelve nephritic patients showing that it is possible to reduce the urea and total nonprotein nitrogen of the blood to the normal or below it in these cases by means of a low nitrogen diet—cereals, bread and butter, vegetables, and a little milk. In every case these blood constituents were finally brought down to normal. No marked connection was found between the blood pressure and the degree of retention of these products, and therefore, a high blood pressure does not necessarily demand a low nitrogen diet in nephritis. The only criterion now available for regulating the protein in the food in these cases is determination of the degree of retention by blood analysis. There is no correspondence between results of the phenosulphonephthalein test for renal efficiency and the degree of waste nitrogen retention.

Clinical Significance of Urobilin.—R. L. Wilbur and T. Addis, concluding from an exhaustive study of urobilin, lay special stress on the value of estimations of urobilin in the stools as a guide to the amount of blood destruction occurring in the body. While the interpretation of urobilin findings in the urine is at present somewhat problematical, the determination of an increased intestinal excretion rests on a much firmer basis. Increase of urobilin is of diagnostic or prognostic importance in hepatic cirrhosis or stasis, malaria, anemias, pneumonia, infections causing hepatic changes or hemolysis, cardiac decompensation, and severe nephritis.

Effect of Heat on Blood Pressure.—L. H. Newburg and C. H. Lawrence report experiments showing that in lower animals degrees of hyperthermia not greater than those encountered in infections are sufficient to cause marked hypotension. Increased temperature in infection is a potent factor in the lowered blood pressure occurring in such conditions, and may, in fact, be the entire cause of this hypotension.

Paroxysmal Auricular Fibrillation.—G. Canby Robinson reports the case of a man aged fifty years in whom transient attacks of auricular fibrillation were recorded electrocardiographically. These attacks had apparently occurred over a period of twelve years, and auricular fibrillation became permanent while the patient was under observation. The heart presented no signs of an anatomical lesion, but arteriosclerosis existed. This, with the high, variable blood pressure, suggested changes in the cardiac blood supply as the underlying factor. Cases such as this one seem closely allied to paroxysmal tachycardia, and although the auricular fibrillation tends to become permanent, prognosis is not necessarily so grave as in ordinary fibrillation with outspoken cardiac lesions.

Camphor in Pneumonia.—William J. Cruikshank's communication consists mainly of citations from a previous paper by August Seibert, reporting thirty-six cases of pneumonia treated by subcutaneous injection of very large doses of camphor. Doses up to thirty or forty grains at a single injection, were repeated as often as every four to six hours. These cases gave practically one hundred per cent. of recoveries, and a striking feature was that the temperature always fell by slow lysis. To these observations, Cruikshank adds his own on six patients, all of whom recovered, and the cases of all of whom also defervesced by lysis. Seibert produced evidence of the specific action of camphor against pneumococci, experiments made for him which showed that camphor in dilutions of one to 10,000 inhibited growth of these organisms in culture media. He does not state that it is thus bactericidal in human blood, but suggests that it does not have such an action except on those few organisms which pass directly into the circulation from time to time. He shows that it has no effect on pneumococci in parenchymatous organs, such as the kidney. He believes that camphor renders human blood an unsuitable culture medium for pneumococci. It was possible to protect laboratory animals from fatal doses of pneumococci by giving them camphor shortly before their inoculation, or within a few hours thereafter. It is suggested that camphor be given subcutaneously in oil, in doses of thirty-six grains for each hundred pounds of body weight; the earlier administration is begun the more rapid the cure.

Treatment of Placenta prævia.—James A. Harrar sounds the following warning based on certain factors of great danger: 1. Ether should be the anesthetic; chloroform is likely to induce collapse. 2. It is bad practice to remove the first tampon and repack on account of inefficiency of the first tampon; add more packing to that already in place. 3. Deep laceration of the cervix always results from rapid manual dilatation before it has reached three fingers and the margin has been well taken up. Accouchement forcé has no place in treatment of these cases. 4. Forcible distention by large bags inserted without rupture of the membranes is likely to rupture the lower uterine zone, owing to the great increase in the uterine contents. 5. It is dangerous not to tampon the uterus and vagina immediately after delivery; it is too late after post partum hemorrhage. 6. One should avoid removal of the post partum tampon and repacking on account of continued bleeding. This often arises from the torn cervix, lacerations of which may not have been recognized.

Incidence of Renal Involvement in Pulmonary Tuberculosis.—Harry S. Bernstein studied 100 cases to determine the frequency of such involvement, and comes to the following conclusions: "One hundred urines from pulmonary tuberculosis were examined for the presence of the tubercle bacillus by guineapig inoculation. Ten, or ten per cent., produced tuberculosis in guineapigs. Symptoms referable to the urinary tract were absent in each case. Subsequent inoculation in five of the cases corroborated the first findings. Six of the positive urines were negative for albumin. Three urinary sediments contained pus cells. Cystoscopy of three cases revealed no pathological condition of the meatus. In one case of the latter, the urine from each kidney produced tuberculosis in guineapigs. In the other two, only one kidney was positive for tuberculosis. Post mortem records showed a percentage of three and four tenths of kidney involvement in pulmonary tuberculosis."

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

GENITOURINARY SECTION.

Regular Meeting, February 19, 1914.

The President, Dr. JOSEPH F. MCCARTHY, in the Chair.

Urethral Stricture; Its Operative Care.—Dr. CHARLES H. CHETWOOD read this communication, which will appear in a subsequent issue of the JOURNAL.

Dr. MARTIN WARE considered that the question of whether or not a stricture should be operated upon depended largely upon the point of view, for, as stated by Doctor Chetwood, most strictures were capable of being dilated if one was patient. The point of departure which modified this statement was, whether it did not become imperative to operate, for instance, if the patient had an infected bladder, or if the upper portion of the urinary tract was involved. Furthermore, it might be advisable to operate because of local conditions of the stricture, or because of conditions within the bladder, where there was complete or incomplete retention with or without distention, or whether or not there was infection of the bladder. These constituted the general indications for operative procedure; and finally, if there was a systemic infection. The modus operandi had been so thoroughly reviewed by Doctor Chetwood that there was nothing to take issue with. He agreed with Doctor Chetwood that the vast majority of cases of stricture could and should be handled by dilatation, but he would like to make a few remarks in regard to the modus operandi. Strictures of large calibre should be excluded, for they were responsible for the maintenance of obstinate urethral discharges and were not strictly in the category of operative cases. He would therefore confine himself to the discussion of strictures of small calibre. When they came to that class of strictures, they would also have to take into consideration such cases as were very resilient. Strictures of the meatus called for operative procedure, first and foremost, for they were among those very obstinate to treatment, and had repeatedly to be dilated after division in order to maintain the calibre of the meatus. If they did not wish to do meatotomy, they had to resort to the ordinary urethral instruments to ascertain whether or not there was a stricture, and if they decided that it was below No. 20 French, they still could do something with the or-

dinary dilating instruments, with which all were familiar. The strictly operative cases constituted the class of very tight strictures. If one could get a fine filiform instrument through, one might then accomplish dilatation by introducing successively larger instruments at intervals of three or four days or longer. If they did not succeed the first time, they would succeed the second, or the third, or the fourth time, if proper patience was shown, and a sufficient variety of instruments were at hand. In this manner, it would be found possible to pass such an instrument in a vast majority of cases. As to whether or not one should do a radical operation with the aid of a guide or a slow and gradual dilatation, would be the individual choice of the operator. If one in the presence of a distended bladder should encounter considerable difficulty in introducing the guide, one was still not justified in proposing internal urethrotomy. For one might puncture the bladder many times and evacuate it, and so render the patient much more comfortable. As long as the bladder was not infected, it was not necessary to have recourse to the knife for either external or internal urethrotomy, as with negative pressure or a very fine needle one could empty the bladder by puncture and might then eventually succeed in introducing the guide. As soon as this fine guide was in position, one might accomplish a great deal by dilatation.



FIG. 1.—Doctor Fluhrer's modification of Maisonneuve urethrotome for stricture of filiform calibre.



FIG. 2.—Doctor Fluhrer's urethrotome; *a*, shows "finder"; *b*, shows knife.

Another condition which often drove one to hasty action was urinary infiltration. It was not definitely stated in most of the textbooks, that urinary infiltration did not necessarily call for division of the stricture at this time. One found it necessary merely to meet the indication so that the infiltration should not spread and then, at a later date it would be found very easy to do an external urethrotomy; the urinary infiltration being taken care of by dividing the tissues down to where the infiltration began posterior to the point of stricture, as that would suffice to meet the conditions for the time being. They could find out whether or not the bladder was infected and, at a later date, under much more favorable conditions, do an internal urethrotomy or combined operation. In deciding whether or not, in the case of a very tortuous and resilient stricture, they should do an internal or an external urethrotomy, at the present time (although he formerly favored external urethrotomy in such cases, for the reason that the armamentarium that he then possessed did not seem to be sufficient to guard against the dangers of internal urethrotomy), he was inclined to favor the internal urethrotomy, as their armamentarium had been improved. In connection with this point, he would show an instrument devised by Albarran, which was practically the same as a Maisonneuve instrument. The essential points were that one must have a very fine filiform guide that had a screw or thread projecting. If they used the ordinary filiform, as they had done for so many years past, they could thread the instrument through its eye, but the Maisonneuve made with an eye through which the guide was slipped, possessed the disadvantage that very often a kink was made in the instrument and they would cut the guide or not be able to follow up the lead. This modification of Albarran was so far an advance that after the filiform was located, one might screw the Maisonneuve on it, making it thus a part of the guide itself. The next point, as constructed by Albarran, was that the cutting surface was on the concavity, thereby incising the stricture on its anterior surface and avoiding the risk of injuring the bulb or other vascular structures.

The next step in this method, after cutting, was to withdraw the instrument and leave the guide in place. Now the point which seemed to be a great improvement over the Maisonneuve instrument, was that the guide might be lengthened by attaching a director having thereby a filiform resting in the urethra and the director projecting beyond; a suitable sized woven catheter with an open end and lateral eyes was now selected and threaded over the director, passing the cut surface of the urethra and entering the bladder, the guide and director being then removed and the catheter employed as a retaining instrument. He had practised this method for some time past, and found it a great improvement over the older methods; it presented a perfectly clean and expeditious procedure for entering the bladder. With the recognized stricture of large calibre, he limited himself, so far as urethrotomy

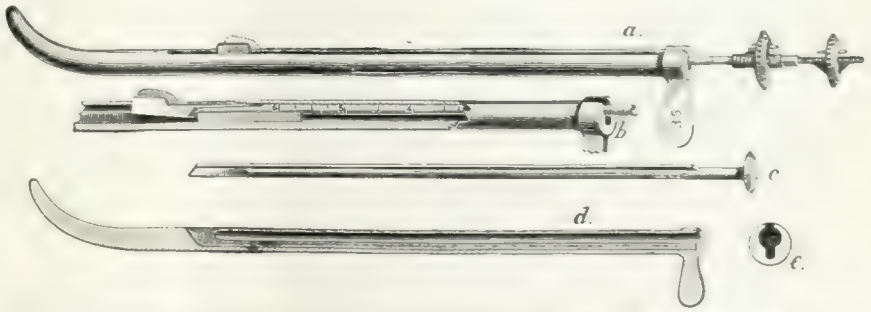


FIG. 3.—Doctor Fluhrer's urethrotome for stricture of large calibre. It is conical in shape and carries at the same time a finder and a knife, both adjustable as to position and calibre by means of screws on the handle.

was concerned, to internal urethrotomy. With reference to the external operation, he found the indications reducing themselves to the question of whether or not the stricture was impassable, the latter necessitating a very difficult procedure. But since they had been doing the perineal operation for prostatic enlargement, their ideas of stricture were more anatomical than heretofore. If one encountered a stricture with an overdistended bladder and could not get in, the suggestion made by Doctor Fuller some time ago, seemed very pertinent (drain the bladder first and then you will have no difficulty in getting in, and retrograde manipulations will not be found necessary). For the operation of dilatation it was not necessary to get the indwelling filiform into the urethra or the stricture, it being sufficient merely to engage the instrument in the lumen of the stricture, and then on the second or third day, the way for further entrance was paved. He desired to add that the injections, as previously practised abroad, of fibrolysin or thiosinamine, were a fraud and no credence should be placed in their use, as stricture of the urethra was a purely mechanical problem which must be met accordingly.

Dr. George K. Swinburne, according to the situation, employed internal urethrotomy for strictures occurring in the anterior four and one half inches, external urethrotomy for the deeper ones. In recent years he had found that the operation of internal urethrotomy need seldom be performed, as unless the condition had become organized and resisted dilatation, the latter procedure was ordinarily successful. For internal urethrotomy, he regarded the Otis dilating urethrotome as the instrument of choice, the following being the necessary requisites for a successful operation: 1. Incisions should be made on the roof only; 2, all fibres should be cut; 3, patient should remain in bed three days and hemorrhage, if present, should be controlled; 4, no instrumentation after operation for two full weeks, as by this time the wound should be entirely healed.

Stricture occurring in the bulbous portion was, as a rule, of much greater importance, as it might lead to retention of urine, changes in the bladder muscle, infection, extravasation of urine, urinary fistulæ, etc. Formerly, there were but two ways of attacking this problem, by gradual dilatation and the operation of external urethrotomy. As after operation, the stricture relapsed as quickly as after gradual dilatation, thus rendering it necessary for the patient to remain under medical supervision the rest of his life, it seemed that dilatation, except in certain selected cases, was the procedure of choice. Since, however, the introduction by Dr. Hugh Cabot of his method of urethroplasty, it had been found that following this operation, when properly conducted, the patient required no further attention. The operation consisted of cutting down upon the urethra at the site of the stricture, dissecting that portion entirely free from its bed for an inch in extent, then a longitudinal cut through the entire floor of the stricture, drainage being provided for behind the wound so that the urine would not come in contact with it. One then sewed up the longitudinal wound in the urethra, making of it a horizontal wound, finally suturing the overlying tissue in layers. The bladder drain remained in for six or seven days, and on its removal a sound was passed, after which, as a rule, no instrumentation was attempted for a month.

Dr. William Francis Fluhrer wished to make only a few remarks: his experience had been somewhat different from those expressed. He had been fortunate or unfortunate enough to have treated as many and as tight, deep strictures as most, and he could conscientiously state that there had never been a case in which he had not been able to introduce an instrument through a stricture by the natural route, provided any urine came through the calibre of the stricture. He would therefore lay it down as a rule, that it was within the range of possibility for a skilled man to pass an instrument through every stricture which was pervious to urine. It might require prolonged effort and a great deal of patience, but it was an entirely practicable thing. In a career of many years he had met with but two cases where the urethra was closed and all the urine was voided through perineal openings. In no other cases of stricture of the urethra had he ever failed to pass an instrument. He disagreed in some measure with the remarks of the preceding speakers regarding internal urethrotomy. It was only in a minority of instances that dilatation of the urethra, certainly of the deep urethra, resulted in a permanent cure, obviating the necessity of passing instruments. The cutting operation could do both. Considering the rapidity and certainty of cure, and the lack of discomfort to the patient, internal urethrotomy of the deep, tight strictures was, by all odds, the treatment of choice.

The attributes which a urethrotome should combine might be stated as follows: 1. It should be able to locate and cut a stricture with precision, by touch, not by measurement; 2, the instrument should hold the stricture still, and should so distend it that it could be cut to the greatest advantage with a knife, and the knife should be so adjustable that one might make a stroke or a deep cut, as desired. He would show the instruments which he designed, in 1876, for cutting tight strictures of the deep urethra and which had since been somewhat modified and improved. The tightest and most difficult strictures, paradoxical as it might be, were the easiest to operate on. Doctor Fluhrer stated that in the bad cases he buttonholed the perineum merely for drainage. The instrument was passed in and they knew they were in the bladder, for urine passed out through the bore of the instrument. It really was a conical grooved director.

He once designed an instrument to treat strictures of large calibre, but on account of its rather prohibitory price, it had not been put on the market. This instrument had the appearance of an ordinary steel sound. (See Figs. 1, 2, 3, 4.) The shaft carried an adjustable stop for detecting the stricture; the blade of the cutting mechanism as well as the detecting stop were adjustable to a nicety. It was an instrument of precision and in its use measurements were not needed, the touch being all sufficient, and with precise manipulation, the resulting bleeding was insignificant.

The points he wished to emphasize were, that, in his judgment, the cutting operation was the

operation *par excellence*. It was the easiest and simplest method of treatment, gave less discomfort to the patient, and was the one most certain to result in cure; whereas by dilatation only, they might have to pass sounds forever. Otis was right. He cured his cases, and the hemorrhages and occasional deaths that occurred were accidents entirely separable from his proposition. The Otis urethrotome was simply an infinity of sizes of urethrotomes in one instrument. It had the merit of holding the stricture still while the knife operated. Otis tried to make a urethrotome which would detect the stricture, and some old illustrations showed how he tried to put a finder or detector on it; but it had to be an extremely fine mechanism and his instruments were not fine enough.

Doctor FULLER said that the beautiful instruments presented by Doctor Fluhrer showed what could be done by careful manipulation of the urethra, and that one should not absolutely condemn internal urethrotomy. There was one interesting point in the extreme cases referred to by Doctor Fluhrer where such excellent results were obtained, namely, perineal drainage. It was a question, in some of these very bad cases, whether the drainage had not accomplished more than the cutting. Many years ago, Moulin, of London, took a number of bad cases of penile stricture, and without any instrumentation, opened the perineum, drained for two weeks or more, and then allowed the opening to close. At the end of a month, he examined the cases, and in a large number he could find no anterior stricture at all; in all the other cases, the stricture had subsided to a very marked degree. It was a question, therefore, whether this was not a very valuable adjunct in many of these cases Doctor Fluhrer had reported as internal urethrotomy. It would seem that where the perineum was drained in that way (by buttonholing the perineum), that the operation should really be classed as an external, instead of an internal urethrotomy. About the time he started practice in New York, they had just passed through the craze for the Otis internal urethrotomy, and in consequence, a great many bad results were in evidence, which led to a prejudice against the procedure to a greater extent than perhaps was warranted. He himself had always felt a great deal of hesitation in cutting a stricture of the deep urethra internally, and had been mindful that even though careful in so doing, bad results might ensue. In most instances, therefore, he preferred to open the perineum and drain, and then cut the penile urethra, with, as it were, a feeling of impunity.

In regard to the external urethrotomy which Doctor Swinburne said he used to condemn, if one employed the technic which he and others now used, one might obtain extremely good results, in fact, bad results were very much in the way of exceptions. Doctor Ware had spoken of a condition to which he, himself, had directed attention a good many years ago. These were the bad cases where perineal fistulæ and urinary infiltration were present. No one could procure a good result by the primary performance in these cases of either internal or external urethrotomy. Everything was disorganized, and it was in such cases that he had advised as an initial procedure a suprapubic operation, thereby diverting for a month or so, the flow of urine from the perineum, after which plastic repair would afford excellent results.

Doctor MICHEL stated that in the past seven years in his service he had been able successfully to dilate all the strictures coming under his observation, and that the worst cases encountered were those which had been severely handled with instruments or cut. He had seen some cases treated by Doctor Swinburne and Doctor Warren, in which by means of resection good results had been obtained.

Doctor SINCLAIR presented an ingenious instrument which he called a retrourethral cystoscopic guide, a communication concerning which will be found on page 677.

Letters to the Editors.

FURTHER EXPERIMENTATION WITH IMPLANTATION OF SEX GLANDS TAKEN FROM THE DEAD BODY.

CHICAGO, March 31, 1914.

To the Editors:

Referring to the matter presented in the editorial article in the NEW YORK MEDICAL JOURNAL, issue for March 21, 1914, I take the liberty of stating that my experimental work, since demonstrating in two apparently successful cases the feasibility and apparent safety of the method, comprises fifteen implantations in the human subject, in both sexes, making in all seventeen. The series of cases comprised epileptics, paretics, senile dements, and subjects with dementia præcox. The results of the implantation *per se* will later be submitted to the profession, and the end results as soon as sufficient time has elapsed to determine them. The first two of the series were doing well at the end of two weeks.

There were four cases of cross transplantation, one ovary in a male, and three testes in women, and one implantation with anastomosis of the vas. All the cases operated in were of long standing and not at all the sort of material to give the method a fair therapeutic test. On the fifth day after operation six apparently were doing well. A small stitch abscess appeared in one case (male), with a temperature of 103° F. On freeing the pus the temperature fell to normal. In this case the implantation was intrapelvic, in the preperitoneal space. In another (female) a small superficial abscess formed at the end of a week, with an elevation of temperature of two degrees. The abscess was opened and drained and is rapidly healing. The ovary still is *in situ*. In none of the other cases has there been thus far a rise of temperature over 1.5° F. Seven of the cases are too recent for special comment; in all there appeared at the end of twenty-four hours, considerable induration about the implanted gland, as a natural sequence of trauma from the tissue "insult," and what must of necessity be, until circulation is established in the gland, a foreign body.

In regard to Carrel and Guthrie's transplantation experiments upon the kidneys of the cat, I would remark that the generative gland secretion, unlike the renal secretion, may be suppressed without danger to life. In implantations it is a matter of indifference to the end results, whether or not, the generative secretion escapes from the gland. Sterilization has proved this, time out of mind. It is a far cry from the physiology—especially the internal secretion physiology—of the cat to that of the gonad of the human being. Strictly speaking, the testis and ovary have no eliminative function. The discharge of spermatozoa and ovules is not essential to the life of the "producer," but to procreation only.

Theory aside, a good sized piece of implanted testis has been present since January 16th in my own person, and apparently has been, and still is, functioning so far as internal secretion is concerned, as the physiologic results have shown. How long it will persist, would be difficult

to say. The gland was decorticated, and complete atrophy would not be astonishing. The physiologic effects of my two first implantations will be later presented to the profession.

G. Frank Lydston, M. D.

CREDITABLE STATISTICS FROM THE BRONX.

New York, *March 25, 1914*

To the Editors:

It is a remarkable fact and one I believe not generally known, that the Borough of the Bronx which, with its population of 584,000, is virtually a city in itself, has an infant mortality rate lower than that of any city in the United States and probably lower than any city in the world. At my request, Dr. William Guilfoy, of the Department of Health, has kindly furnished me with the following figures for the year 1913:

Number of births in the Bronx, 14,679. Number of deaths under one year in the Bronx, 1,166. Of these deaths 410 were due to congenital debility, 246 to respiratory diseases, and 230 to diarrheal diseases.

The following table shows the number and rates in the entire city of New York and in the Borough of the Bronx:

1913

	Births.	Deaths under 1 year.	Rate per 1,000.	Congenital debility.	Rate per 1,000.	Resp. diseases.	Rate per 1,000.	Diarrh. diseases.	Rate per 1,000.
New York city	135,134	13,722	101.9	4,403	33.2	3,153	23.3	3,027	22.4
Bronx	14,679	1,166	79.5	410	27.9	246	16.7	230	15.6

The Borough of the Bronx has an infant mortality rate of 79.5 per 1,000, by far the lowest in the United States. The city of St. Louis is credited with 99.6; London, in 1912, had ninety-five per mille. Of the European countries, Norway has always had the lowest rate. The latest figures which I have at hand are 81 per 1,000 in the year 1905. I believe that the exceedingly low rate in the Bronx is due to the large proportion of mothers who nurse their infants. During the last five years, in the maternity ward of the Lebanon Hospital, ninety-eight per cent. of all mothers have nursed their babies during the first two weeks, and eighty per cent. have been able to give exclusive or partial breast feeding during the first five months.

Charles Herrman, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Influenza. Its History, Nature, Cause, and Treatment. By Arthur F. Hopkirk, M. D. (Jena). London: The Walter Scott Publishing Co., Ltd.; New York: Charles Scribner's Sons, 1914. Pp. xix-209.

We might have thought that this work was intended for the physician had we not, when first opening it, happened upon a glossary wherein are explained such words as angina, bradycardia, and diaphoresis. Yet the book seems to contain much material not thoroughly understandable by the average lay reader. Perhaps a highly educated chronic sufferer from la grippe would get most out of the book. A history of the disease is given and the diagnostic points are listed, while the commoner remedies are prescribed. For complications, however, the reader is referred to Quain's *Dictionary of Medicine* and to periodical literature of a kind not usually perused by nonmedical students. Some of our brethren will be horrified to note the prescription of champagne, frivolously referred to as "fiz," as the best of all pick-me-ups for the well known postinfluenzal depression. Homeopathic medication is spoken of as "rational," and we are glad to meet our old friend, antiphlogistic, once more, this time as an alternative to homeopathic, dietetic, climatic, palliative, or stimulating treatment, the patient being apparently invited to take his choice. Having received the admonition, however, to go to bed and to send for a doctor and a nurse, we do not see the necessity for so much more advice, covering many pages, concerning remedial measures except, perhaps, for the sake of completeness. Altogether the book is a puzzle, even if an interesting one.

A Manual of Medical Treatment, or Clinical Therapeutics. By I. Burney Yeo, M. D., F. R. C. P., Emeritus Professor of Medicine in King's College, London, Consulting Physician to King's College Hospital, Hon. Fellow of King's College. Fifth Edition, by Raymond Crawfurd, M. A., M. D. Oxon., F. R. C. P., Physician and Lecturer on Clinical Medicine to King's College Hospital, Fellow of King's College, London, etc., and E. Farquhar Buzzard, M. A., M. D. Oxon., F. R. C. P., Physician for Out-Patients to St. Thomas's Hospital and to the National Hospital for the Paralysed and Epileptic, Queen Square, etc. In Two Volumes, Vol. II. New York: William Wood & Co., 1913. Pp. vii-846. (Price, $6.)

It is a good omen that books like this continue to find favor. Since there are so many novelties—pseudo and others in therapeutics—it is difficult to preserve an entirely impartial attitude when writing on medicine, but in these volumes the authors strike the happy mean. They take the new and old points, it seems to us, equally well, and the book discloses a happy union of the mind of the writers to the whole matter of their subject. No one could doubt that such would be the character of any publication of Dr. Burney Yeo's. The various novelties relating to the treatment of disease are put in their proper place in a general scheme of practice and become easy to appreciate. Question begging propositions of pharmacologists and immunizators are thus pointed with an aphorism. We should learn to distinguish *"a prolonged series of consequences from a prolonged series of mere coincidences."* The observation is just. Such are the means by which the authors have endeavored to make a treatise which will enable the physician to obtain a knowledge at once comprehensive and new—a knowledge which will enable him to follow in an intelligent manner the practice of modern clinics, and study cases and use new remedies with readiness and ease. Among excellent chapters we may notice those on pneumonia, Bright's disease, hepatic cirrhosis, and phthisis. We have found few errors, but in the index, under Erysipelas, Volume I, p. 667, should be changed to II, p. 667.

Organic Chemistry. For Students of Medicine. By James Walker, LL. D., F. R. S., Professor of Chemistry, University of Edinburgh. London: Gurney and Jackson; Edinburgh: Oliver and Boyd, 1913. Pp. xi-328.

The increasing demands of the medical curriculum on the time of the student seem to necessitate a recasting of the instruction wherever that is possible so as to economize in time. Professor Walker has produced an excellent textbook on organic chemistry for students of medicine, and has cut down materially the amount of space ordinarily devoted to this topic by using substances of more or less medical interest to illustrate the various classes and groups of organic compounds. In this way the student will acquire a knowledge of substances of medical interest at the same time that he learns the modern theories of organic chemistry. The plan of the author is admirably carried out. The type forms collected for illustrating the various laws and theories are well chosen and the matter is set forth concisely, but clearly and intelligibly.

Sciatica. A Fresh Study. By William Bruce, M. A., LL. D., M. D. (Aber.). With Notes of Nearly 700 Cases. New York: William Wood & Co., 1913. Pp. x-175. (Price, $1.75.)

In this interesting little book the author gives his personal experience and close observation with full notes of 691 cases of "that group of associated symptoms known as sciatica," which, he demonstrates, "result from irritation originating from troubles in the hip joint." He gives his reasons for rejecting the common view that it is a neuritis, for which, he declares, there is no pathological evidence. He pleads for more careful, exact studies of cases, and his own observations are thorough and full of practical consideration of the factors, both immediate and remote, mechanistic and anatomic, including radiograms.

Arthritic involvement was found uniformly present, with usually cognate spasm in associated muscles. His method of treatment, which is most successful and thorough in re-

sults, is to fix the hip joint and relieve the pain, preferably by a few cautious doses of morphine; then to apply judicious massage (the details of method would be helpful, but are not elaborated). Full consideration is given to metabolism and to restricted feeding; meat is allowed; alcohol is forbidden. He speaks well also of hot baths, sulphur or mud spas, high frequency electricity, and radiant heat.

Interclinical Notes.

The book reviewer of the *Brooklyn Eagle* tells on March 29th how Edith Wharton "won her spurs" some fifteen years ago; so pleased is the writer with this metaphor that he cannot refrain from repeating how a new authoress, Katherine Fullerton Gerould, has just won *her* spurs. We suppose that as many women now ride astride, they wear a pair of spurs instead of one only, as was formerly the custom, yet that they are also knighted, even in this rapid age, we decline to believe. Not even when they get the vote shall we address these ladies as Sir Edith and Sir Katherine.

* * *

Persons interested in the adventures of their ancestors, Uk and O-o, frequently referred to in these notes, will be glad to learn that they finally set up housekeeping in a commodious cave, one room without bath, as narrated in the *Popular Magazine*, April month end number, raised a family, and tamed a wolf to serve as ancestor for our dogs. It is pleasant to know that their adventures are not yet terminated.

* * *

We think that no dermatologist or other medical authority is willing to go on record as having stated the exact etiology and nature of baldness; yet the newspaper reader will find baldness discussed in the most positive terms by writers of letters to the editor, the variety of theories advanced being equalled only by the earnestness of their backers. Particularly do we love the position taken by a large school of laymen that the hair is a vegetable growth. The latest remedy for baldness advanced by the extraprofessional therapeutists is "wriggling" of the scalp, an idea based apparently on the good results obtained by gardeners through care of the soil.

* * *

Once upon a time doctors used to collect postage stamps; do they still do so, or have the varieties outgrown the means of the average practitioner? There is a capital article on rare stamps in the *Strand Magazine* for April. It is a duty to announce that there is also a story by the author of Wee Macgregor, entitled The Auld Hoose, but we think Mr. J. J. Bell comes perilously near to sentimentality in this sketch. There are a number of other stories of inexplicably different type to those in American magazines, perhaps the more refreshing on that account.

* * *

Not even the beauty of the April *Century* is more important to us than the fact that there is a story by Rudyard Kipling, viz., The Dog Harvey. There are several interesting chapters on art and some of the illustrations reproduce the cubist horrors shown in New York last year. The Reverend P. Gavan Duffy discusses the Shavian Religion; we hope the article will be instructive to those who look upon Shaw rather as a sort of bright newspaper paragrapher than as one of the most brilliant of playwrights and essayists. In Lighter Vein is charming, and there is a hitherto unpublished poem by Browning, Gerousios Oinos.

Meetings of Local Medical Societies.

MONDAY, *April 6th.*—Clinical Society of New York Throat, Nose, and Lung Hospital; German Medical Society of the City of New York; Utica Medical Library Association; Niagara Falls Academy of Medicine; Brooklyn Hospital Club; Hornell Medical and Surgical Association (annual); Clinical Society of the New York Polyclinic Medical School and Hospital.

TUESDAY, *April 7th.* New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Amsterdam City, N. Y., Medical Society; Lockport Academy of Medicine; Society of Alumni of Lebanon Hospital, New York; Syracuse Academy of Medicine; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh Medical Association; Oswego Academy of Medicine; Medical Association of Troy and Vicinity; Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Broome County Medical Society; Medical Society of the County of Yates, N. Y.; Medical Society of the County of Ulster; Medical Society of the County of Orange; Medical Society of the County of Cattaraugus.

WEDNESDAY, *April 8th.*—New York Pathological Society; New York Surgical Society (annual); Alumni Association of Norwegian Hospital, Brooklyn; Schenectady Academy of Medicine; Medical Society of the Borough of the Bronx; Richmond County Medical Society; Dunkirk and Fredonia Medical Society; Rochester Academy of Medicine; Medical Society of the County of Montgomery; Medical Society of the County of Dutchess; Brooklyn Medical Association.

THURSDAY, *April 9th.*—New York Academy of Medicine (Section in Pediatrics); Gloversville and Johnstown Medical Association; Physicians' Club of Middletown; West Side Clinical Society, New York; Brooklyn Pathological Society; Blackwell Medical Society of Rochester; Jenkins Medical Association, Yonkers; Society of Sanitary and Moral Prophylaxis, New York; Buffalo Ophthalmological Club; Jamestown Medical Society; Society of Physicians of Village of Canandaigua; Medical Society of the County of Allegheny.

FRIDAY, *April 10th.*—New York Academy of Medicine (Section in Otology); Society of Ex-Internes of the German Hospital in Brooklyn; Flatbush Medical Society, Brooklyn; Eastern Medical Society of the City of New York; Society of Alumni of St. Luke's Hospital, New York (annual).

SATURDAY, *April 11th.*—New York Association of the Medical Reserve Corps of the United States Army.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending March 25, 1914.

Baughman, D. S., Assistant Surgeon. Relieved from duty at the Marine Hospital, Chicago, Ill., and directed to proceed to Seattle, Washington, and report to Surgeon B. J. Lloyd for duty. **Carter,** Henry R., Senior Surgeon. Directed to make necessary trips between Baltimore, Md., and Washington, D. C., for the purpose of giving lectures on malaria and yellow fever to student officers now taking a course of instruction at the Hygienic Laboratory. **Cofer,** L. E., Assistant Surgeon General. Directed to proceed to Boston, Mass., for a conference with the medical officer in charge of the Marine Hospital relative to rations issued to patients and attendants. **Corput,** G. M., Surgeon. Directed to proceed to New Orleans, La., on business connected with procuring supplies for the station when occasion demands, during the period from April 1 to June 30, 1914. **Eager,** J. M., Surgeon. Authorized to attend the meeting of the Permanent Committee of the International Office of Hygiene at Paris, France, beginning April 21, 1914. **Glanville,** W. E., Assistant Surgeon. Upon completion of present assignment to the Hygienic Laboratory for instruction, directed to report to the director for duty. **Goldberger,** Joseph, Surgeon. Directed to proceed to Richmond and other points in the State of Virginia, to visit the insane and other institutions for the purpose of inquiring into the prevalence and origin of pellagra. **Grimm,** R. M., Passed Assistant Surgeon. Relieved from duty at the Marine Hospital, Savannah, Ga., and directed to report to the director of the Hygienic Laboratory, Washington, D. C.,

for duty. **Hoskins,** J. K., Sanitary Engineer. Directed to proceed to Harrisburg, Pa., for consultation with the State health authorities in regard to securing sanitary data for use in investigations of pollution of Ohio River. **Lanza,** A. J., Passed Assistant Surgeon. Relieved from duty at the Fort Stanton Sanatorium, upon completion of present assignment to the Hygienic Laboratory for instruction, and directed to report to the director for duty; directed to undertake investigations of the influence of migration of tuberculous persons in interstate traffic in the stations of Arizona and Colorado. **Lumsden,** L. L., Surgeon. Directed to proceed to certain counties in West Virginia and Indiana for investigations of typhoid fever, with special reference to rural sanitation. **Nydegger,** J. A., Surgeon. Directed to proceed to the Immigration Station, Ellis Island, N. Y., for the purpose of witnessing the various tests there used for the determination of mental development. **Olesen,** Robert, Passed Assistant Surgeon. Upon the completion of present assignment to the Hygienic Laboratory, for instruction, directed to report to the director for duty. **Parcher,** George, Assistant Surgeon. Directed to report to the commanding officer of the United States Revenue Cutter *Miami* at Tompkinsville, N. Y., for duty in the ice patrol of the North Atlantic Ocean. **Shoub,** H. L., Sanitary Bacteriologist. Directed to proceed to Washington, D. C., and report to the director of the Hygienic Laboratory for duty in connection with field investigations of stream pollution. **Simpson,** Friench, Passed Assistant Surgeon. Relieved from duty at San Francisco, Cal., and special duty at Seattle, Wash., and directed to proceed to Washington, D. C., and report to the director of the Hygienic Laboratory for duty in investigations of occupational diseases. **Woodward,** R. M., Surgeon. Granted leave of absence for two months from February 3, 1914.

United States Army Intelligence:

Official list of changes in the station and duties of officers in the Medical Corps of the United States Army for the week ending March 28, 1914:

Burnside, Frederick R., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States under the requirement of section 5, act of Congress approved April 23, 1908. **Denton,** J. F., First Lieutenant, Medical Reserve Corps. Ordered to active duty effective on or about March 25, 1914; detailed on board appointed to meet at Fort McPherson, Ga., for the mental and physical examination of candidates for the United States Military Academy. **Divins,** George G., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States under the requirements of section 5, act of Congress approved April 23, 1908. **Huntington,** B. R., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States under the requirements of section 5, act of Congress approved April 23, 1908. **Kilbourne,** E. D., Captain, Medical Corps. Detailed on board appointed to meet at Fort McPherson, Ga., for the mental and physical examination of candidates for the United States Military Academy; on completion of this duty Captain Kilbourne will return to his proper station. **Lyster,** T. C., Major, Medical Corps. Ordered from Fort Monroe, Va., to Fort Oglethorpe, Ga., for temporary duty. **Phillips,** J. L., Colonel, Medical Corps. Granted leave for one month with permission to apply for an extension of two months, effective on his arrival in New York, N. Y. **Roberts,** E. E., First Lieutenant, Medical Reserve Corps. Ordered from Fort Caswell, N. C., to Fort Oglethorpe, Ga., for temporary duty.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Navy for the two weeks ending March 21, 1914:

Alfred, A. R., Surgeon. Detached from the Naval Proving Ground, Indian Head, Md., and ordered to the training station, San Francisco, Cal. **Baker,** M. C., Passed Assistant Surgeon. Detached from the *Pittsburgh* and ordered to the *Chattanooga.* **Dollard,** H. L., Passed Assistant Surgeon. Ordered to the Naval Proving Ground, Indian Head, Md. **Langhorne,** C. D., Surgeon. Detached from the Marine Barracks, Washington, D. C., and ordered to the *Vermont.* **Lynch,** C. P., Surgeon. Detached from the Naval Medical School, Washington, D. C., March 28, 1914, and ordered to the *Tacoma.* **Quinn,** J. M., Assistant Surgeon, Medical Reserve Corps. Commissioned an assistant surgeon from February 24, 1914. **Reeves,** I. S. K., Passed Assistant Surgeon. Detached from the *Tacoma* and ordered to the *North Carolina.* **Robbins,** I. W., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from March 28, 1913. **Short,** W. H., Passed Assistant Surgeon. Detached from the receiving ship at Mare Island, Cal., and ordered to the *Cleveland.* **Wood,** C. I., Assistant Surgeon, Medical Reserve Corps. Commissioned an assistant surgeon from February 24, 1914.

Births, Marriages, and Deaths.

Married.

Norman—Hoyt.—In New Orleans, La., on Wednesday, March 18th, Dr. Nicholas Norman, of Little Rock, Ark., and Miss Ida Hoyt. **O'Brien—Hartley.**—In Berkeley, Cal., on Tuesday, March 10th, Dr. E. S. O'Brien, of Merced, and Mrs. Frances L. Hartley. **Steinhilber—Miller.**—In Philadelphia, on Wednesday, March 18th, Dr. Edward A. Steinhilber and Dr. Mamie E. Miller. **Wayson—Ewing.**—In San Francisco, Cal., on Saturday, March 14th, Dr. Newton Wayson and Miss Anne C. Ewing.

Died.

Anderson.—In Lynchburg, Va., on Friday, March 13th, Dr. James Albert Anderson. **Brown.**—In Winnetka, Ill., on Friday, March 20th, Dr. Moreau R. Brown, aged sixty-one years. **Byrne.**—In Spokane, Wash., on Sunday, March 22d, Dr. Patrick Sheedy Byrne, aged fifty-eight years. **Carr.**—In New Market, Ind., on Wednesday, March 18th, Dr. Francis M. Carr, aged eighty-three years. **Eastman.**—In Kansas City, Mo., on Wednesday, March 18th, Dr. B. L. Eastman, aged forty-three years. **Fitzhugh.**—In Amesbury, Mass., on Saturday, March 21st, Dr. John A. Fitzhugh, aged sixty years. **Forbush.**—In Somerville, Mass., on Friday, March 20th, Dr. A. Waldo Forbush, aged sixty-three years. **Getzendanner.**—In Middletown, Md., on Wednesday, March 11th, Dr. J. W. Getzendanner, aged sixty-eight years. **Haller.**—In Baltimore, Md., on Thursday, March 12th, Dr. Alexander S. Haller, aged eighty-one years. **Hamil.**—In New York, on Wednesday, March 25th, Dr. Vincent Gilbert Hamil, aged fifty-one years. **Henley.**—In Asheboro, N. C., on Wednesday, March 11th, Dr. S. A. Henley, aged eighty-two years. **Hicks.**—In Bristol, N. Y., on Monday, March 16th, Dr. W. Scott Hicks, aged eighty-six years. **Hodgkins.**—In Park Falls, Wis., on Sunday, March 15th, Dr. Chester Lyman Hodgkins, aged forty-four years. **Johnson.**—In Kansas City, Mo., on Friday, March 13th, Dr. Frank D. Johnson, aged sixty-eight years. **Lee.**—In Camden, Pa., on Tuesday, March 24th, Dr. Thomas Lee, aged seventy years. **McLaren.**—In Point Edward, Ont., on Wednesday, March 18th, Dr. A. L. McLaren, aged sixty-six years. **Metcalf.**—In St. Louis, Mo., on Tuesday, March 17th, Dr. William A. Metcalf, of Steelville, Mo., aged sixty-three years. **Perry.**—In Marion, Ala., on Wednesday, March 18th, Dr. Samuel Perry, aged eighty-one years. **Shank.**—In Clearspring, Md., on Friday, March 13th, Dr. Abraham Shank, aged seventy-two years. **Sullivan.**—In Chatham, Ont., on Wednesday, March 18th, Dr. H. J. Sullivan, aged thirty-nine years. **Sykes.**—In Philadelphia, on Thursday, March 19th, Dr. Henry Sykes, aged fifty-two years. **Thornberry.**—In Barnesville, W. Va., on Friday, March 13th, Dr. E. M. Thornberry. **Utley.**—In Marion, S. C., on Monday, March 16th, Dr. E. B. Utley. **Waugh.**—In Burlington, Vermont, on Wednesday, March 18th, Dr. Theodore R. Waugh, aged sixty-seven years. **Weaver.**—In Oakland, Cal., on Friday, March 6th, Dr. Frank A. Weaver, of Charlotte, N. C. **West.**—In San Angelo, Texas, on Wednesday, March 18th, Dr. Acobi West, aged ninety-one years. **Willard.**—In Tiffin, Ohio, on Saturday, March 21st, Dr. George Parker Willard, aged sixty-eight years.

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PSYCHOPATHIC CHILDREN.*

What New York City is Doing for Them.

BY L. PIERCE CLARK, M. D.,
New York.

In order that one may understand the motives in the present movement to study and prevent the psychopathies of children, we should see clearly the reasons for such work. The psychiatrist has long realized that out of the earliest maladaptations of the precox and many allied states, much of the symptomatology and innate defects of the patient have flowed, and that more intensive study of child, and even infantile life is necessary to understand properly and gauge the psychiatric issues concerned. The trends in this direction are well shown in Meyer's precox studies, and Hoch's effort to elucidate the developmental facts in his personality studies. Those of us more immediately concerned with the interpretation and treatment of functional nervous disorders, such as the psychoneuroses, have realized the absolute necessity of a knowledge of the subsoil of habit, manners, and conduct in the neurotic makeup, as well as in the normal child. Nor have physicians alone awakened to this new task; indeed, many still do not recognize the enormous importance of the problem. Many educators, however, are awakening to the fact that modern education calls for a more individualized approach to child development and that it is one of the chief functions of an educational system to study the particular child and help him to adapt his innate powers to his environment and life work. In order to do this, it is essential that we take a better inventory of the child's native ability and temperament. Too much stress has been laid in the past upon purely intellectual traits; the whole emotional control of the mental faculties has been left to the parents and to society in general. The vitalizing power of initiative, interest, and attention, the essential moving qualities embraced in the affective side of the mind, the emotions, must form an integral part of future education. There can be no proper education against the stream or trends of interest. One may say fairly that educational needs have furnished the main incentive to the abstract though necessary studies of child psychology for the past two decades. The practical value from these studies in child psychology has not been so very great, inasmuch as the educators' real needs are to know the biogenetic causes or sources of developmental trends, the successive stages of their development rather than isolated laboratory facts. It is safe to predict that the new and more practical studies of the psychopathies of children will meet our ends, and will do so in a somewhat similar manner to that by which knowledge, thought, and action of everyday life have been enriched by the study of the wider type of behavior and conduct in the mental disorders of adult life, wherein we now know that the once considered senseless behavior of the insane has a real significance with acts and thoughts of everyday life.

The importance of study of the nervous child is felt even more keenly by society at large, independently of physician, educator, and psychologist. It is heralded by many interesting researches upon the nature and causes of vagrancy, crime, prostitution, and pauperism, the diseases of social life. We all meet, therefore, on a common ground in demanding enlightenment regarding normal and abnormal child life. The necessity for team work here is obvious. The alienist is not satisfied to look back upon and reconstruct the early youth of the patient whose mind in later years may have become irrevocably wrecked; the penologist and criminologist feel unable to set aright the innate trends of an adult criminal whose very foundations of perverted character, manner, and conduct were allowed to go unrecognized and uncorrected in earliest life, although many opportunities were in evidence.

The question is now pertinent, How are these needs to be met? How are these child studies to be made? Where can they be undertaken to best advantage? The large nerve clinics in the cities have not met our needs in the past, first, because physicians in charge are not trained to understand or get into sympathetic contact with child life. Then, too, proper facilities for the work are not at hand; we must know the family and environmental history, the setting in which the nervousness developed, and this requires the use of specially trained social workers, and investigators to go to the children's homes. Much time and patience are required to coordinate all these examinations. In time mental clinics which are now on the way will make this work one of the chief purposes of their existence. Means and efforts to promote human welfare and happiness are the functions of physician and educator alike, as well as of those engaged in government. It is the early prevention of the nervousness of our modern life that is desired.

*Read before the New York Psychiatrical Society, November [illegible], 1913, and, in abstract, before the New York County Medical Society, January 13, 1914.

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We are but following the lines now laid down all along the road of modern progress in social science.

I believe that the schools are the place for the psychopathic clinics to study abnormal child life, and although it is not my purpose to review in detail the many reasons for forming these clinics in the public schools, I shall give a short account of the one just established by the New York Board of Education.

For several years a group of us had urged the Department of Education to form a mental clinic for the intensive study of abnormal children, such clinic to be not alone for the backward and mentally defective child, but for all the nervous and mentally disordered children who are hampered or prevented from obtaining an education, the inherent birthright of every American child.

On October 20, 1913, the Board of Education established such a clinic in connection with and under the general direction of the division of ungraded classes, as this department is the natural rallying point for all the neurotic types of children. The consulting staff is made up of experienced alienists, neurologists, educators, sociologists, and psychologists. Aside from a complete consulting staff as just detailed, two specially trained physicians and four social workers are employed by the board in full time service to this department, and more physicians and social workers are soon to be added to this permanent force. The city schools are districted, and the physicians analyze carefully all nervously abnormal children. The very difficult cases are referred directly to the main clinic, now in the Board of Education Building, and here they are to be exhaustively studied by all the best methods known to medical science. One member of the special board of consultants is in charge of the school clinic every afternoon of the school week.

It is generally recognized that the point of first importance in making a clinic of this sort is getting a good method of case examination and proper record filing, in order that the accumulated material may in time be thoroughly studied. This task is primarily a medical one, and were there good studies of the psychopathies of children at hand, it would be easy. We have tentatively adopted, however, a system of examination and record which will be explained in detail at the end of this article.

Many may not know how rapidly and how far advanced the detection and the isolation of mentally abnormal children have advanced. There are today 175 classes for the special education of such children. About 2,700 pupils are now in these school classes. There are probably more than 4,000 more children of this type in greater New York yet to be provided for, making a total of 7,000 children for analysis and school training. More ambitious estimates place the number of such pupils at double this amount. To meet this demand, at least 400 classes of the special type are required. The whole work has been the growth of but nine years. It was the first comprehensive effort to differentiate the kind of education for school children upon a basis of the psychic difference in children. In time it will be not only the most carefully elaborated system of education for the mentally backward, but it will greatly influence the further progress in the individualizing of all teaching, for the normal as well as the abnormal child.

Certain schools are to be set aside as veritable experimental stations to determine the best ways of educating the variant types in the abnormal group. They will be equipped with mental nurses and teachers, and we hope soon to have a resident school for more prolonged training treatment and observation of the more difficult children. It must not be supposed, as many think, that these special schools and the clinic are choked with the obviously imbecile and idiotic class; it is freely admitted by the Board of Education that this latter class should be transferred to State institutional care as rapidly as possible. There are three fairly well marked groups of children in the special classes. The first are the morons, or highest types of imbecility, a group which includes the mentally backward, who are not infrequently classed as feeble minded, and who, after correction of special sense defects and some forced individual mental and physical training, are returned again to the normal grades. There are many more of this class than one is apt to think. By confounding this group with the actually feeble minded, not a few educators and physicians have raised false hopes in the minds of the public that feeble mindedness can be removed or cured, which is obviously absurd. I shall take occasion later to describe some children of this group and make some comment upon the type.

It will confound many to learn that the age long dictum that feeble mindedness may be detected on sight alone no longer holds true any more than that the insane can be recognized at sight. However true it may be that physicians long trained in institutional observation of the feeble minded are rarely ever misled in detecting the feeble minded, the same certainty of conclusion cannot be arrived at in many of the school cases. I will also cite a group of this type later.

The low grade imbeciles in the schools are easy to detect and will call for little study in the educational clinic. We shall, on the other hand, pay special attention to the borderline cases of mental defects and to the second great group of abnormal children, the *nervous* children, comprising those afflicted with hysteria, epilepsy, tics, obsessions, panics, and fears; the timid, shy, depressed, and excitable type. I may say in passing, that special conferences are held for discussing specific child studies and methods of training, and that a National Society for the Study of Normal and Abnormal Children is being founded, in which educators, physicians, and psychologists will be on equal footing in advancing this great work. One of the chief activities of the society will be to hold public meetings.

In many instances types of the mildest grades of feeble mindedness overlap the second group, the neurotics. This group of doubly handicapped children is, however, relatively small. The feeble minded child is looked upon as a defective individual, while the neurotic child is one in whom the mental state is disordered or deranged. I will soon give the history of a pure type of such a neurotic child. In the study of neurotic children we shall pay par-

ticular attention to the child's adaptations and adjustments in changing from the home to the school, which may be called the child's first great adaptation. The importance of this period is hardly to be overestimated; we believe that Spencer's designation that life is an inner adaptation to the outer world, makes the school adaptations a real test in child life, and counts much for its future usefulness in the world.

The third group we are to study, the delinquents, has in some instances a tinge of the color of feeble mindedness in its predominant makeup. It matters little to us whether one wishes to designate this group as the incipient criminal, or, in certain violent and assaultive cases, a form of masked epilepsy; as a body they form the antisocial borderland and inferiors of life—the liars, thieves, truants, and sex perverts. We shall strive as far as possible not to name and pigeonhole delinquent children, but study the developmental instincts, the personality and character defects as *traits* or *trends*, and see how far a specific and detailed training and environmental treatment may change such abnormal children for the better.

In ultimate disposal of the frankly feeble minded and the vicious and delinquent classes, we hope for team work with the charity department of the city and the juvenile courts in order that our work may not be duplicated and that the best interests of the child and society may be protected and safeguarded. In point of numbers the obviously mentally deficient greatly outrank the other two classes, yet the others are by no means a negligible group and seem the less negligible now that society is realizing its essential duty to the delinquent and dependent classes.

No one as yet may say where the borderline lies between the wholly benign trends in a child's development and the wholly irremediable or malignant traits. It must be our special province to work to this end and ever strive to narrow the developmental forces whose enduring presence may spell the incurable neuroses or precocious dements of later life. We should do this for economic reasons, even if no higher motive may appeal to us.

At present no one is able to fathom the depth and breadth of the child mind and soul; no one has an exact panacea for its various disorders, no one may even classify the subtypes and the large loose groupings just given. On the other hand, we are all willing to study the individual types and varieties, and some time, sooner or later, we shall amass sufficient data upon which we may found a better understanding and training treatment of the nervous child.

If it has taken painstaking researches for years, since the time of Sequin and Itard, to make possible a comprehensive training, care, and treatment of the submental child, the feeble minded and imbecile class, how much greater must be the time and work required to formulate the proper guide rules of treatment for the neurotic child, wherein there is a disordered mind and psychic life to be set right, and not simply a constant and fixed deficit as in the mental defective. The frank submentals may be best treated and cared for in groups, as we all know they are essentially gregarious and develop best by imitative habits, while the neurotic child's difficulties are individual and must be studied and treated as such.

While it calls for little skill and training to determine the disposal of the frankly feeble minded, not a few of the borderline cases, especially where marked neurotic trends are in evidence, will require more exact study, and to this end we hope to have some of the ungraded classes set aside for observation and special pedagogic training; furthermore, if necessary, residential schools will be provided to assist in determining the diagnosis and best methods of treatment of these children. Provisions of this latter sort are already serving a good purpose in many cities in Holland. Such schools can easily serve as stepping stones for pupils who must pass on to permanent custodial care in state institutions if their mental deficit proves irremediable. Further, the interrelationship of such residential schools and State institutions ought to be mutually helpful, for in the opinion of many keen observers the State institutions for the feeble minded have remained too long in isolation from the outside pedagogic world. Not that many of the principles of the ordinary training in the normal schools can be taken over by the State schools, for most of their inmates must lead an industrial life in shops or on farms, but inasmuch as an extensive try-out of manual and industrial training is being made in the public schools where financial support for such experimental pedagogics is readily supplied, the State institutions could profit much from a closer association than now obtains.

To summarize, then, all public schools in the large cities should have a department for clinical study of the frank psychopathies of school children, because the school is in close touch with the child and the parent, and enjoys the utmost confidence of the public. It has the training equipment, the personnel, and the financial support adequately to meet the issues concerned in understanding the nature and degree of retardation or perversion of mental development. The school should call for the cooperation of physicians, sociologists, and psychologists—specially trained pedagogues to unravel the difficulties of teaching psychopathic children. The whole scheme calls for our hearty support, as it is in line with the trend of the best thought today to study the beginnings of mental disorders in order that the best means may be forthcoming for preventing the nervous and mental disorders of adult life.

In order that one may understand our tentative plan of study of the individual child, a few notes will be given of the general routine inquiry of cases coming before the clinic.

First, the child's main difficulties are outlined, to find out whether these difficulties lie in the intellectual or the emotional field, such as backwardness in certain studies, or whether he exhibits antisocial traits in the home, or at school, among his comrades, on the street, etc. These facts are briefly stated as a text for inquiry. Then follows a statement, more or less detailed, of the reasons for excluding him from the normal grade in school, which practically amounts to a categorical list of his intellectual and emotional deficiencies. In addition thereto, note is made of the kind of school work the child is best fitted to do, and what he shows the most

liking for, it being recognized that the study in which indifference or disinclination is shown is the most hopeless. Miss Farrell, who is in charge of the ungraded classes, has planned to group delinquent children on the basis of their similarities of what they *can* or *like* to do, the *positive* characteristics, rather than upon the *negative* side of what they *cannot* do, as has obtained in many schools heretofore. The plan is a good one, and promises well in the constructive betterment of psychopathic children in general.

Next in the examination, a number of intellectual tests are employed, such as the Simon-Binet, the Healy puzzle board, etc. These are used only for more specific helps in detecting the more glaring defects, and to give the clue to finding the possible way to direct future plans of educational training, and although such tests are of great assistance, they have their definite limitations and often render one satisfied with but a superficial view of the case.

The examination then moves on to summarize the experimental and actual efforts of the child in the short period of study and observation in the ungraded classes. A family history follows, which is made up of data obtained from parents by the physician, and social workers who visit the children's homes. In dealing with functional nervous disorders in the clinic, it has been found best to inquire carefully into the character, temperament, adaptations, and adjustments of the individual members of the family, rather than to confine oneself to a mere detailing of definite disease entities, which latter procedure is insufficient in dealing with psychopathies of children, although the method may have been quite satisfactory in dealing with organic or structural diseases of the nervous system. Concerning some of the suspicious members of a family, a request for a brief account of their lives has been a help where dry questions have proved negative. There is no doubt in our minds that inquiries regarding the hereditary peculiarities of temperaments from which many of the psychoneuroses and antisocial trends of children flow, will be the better understood when we direct the family inquiry upon traits or trends of conduct, the habits and behavior, and learn to avoid disease entity labels—in other words, we should strive to handle the psychopathies on their own plane of perversion of instincts and conduct, which is also the trend of investigative methods in modern eugenic studies.



Fig. —An ungraded class from Public School 12, Manhattan.

The personal history is next taken up in chronological order, and is largely confined to data concerning the physical development of the child. It has been found best to take up the mental development under the subsequent heading of *mental examination.*

The physical and neurological examination is similar to that pursued in any good clinic, and does not warrant being detailed here. While the greater stress is, obviously, laid upon the examination of

the mental mechanisms concerned in the psychopathies, the bearing which physical conditions have in such disorders is always kept in mind, and careful note is made of them so that the investigation may be broad and comprehensive in future studies.

We now take up the mental examination. It is held that the first principle in the observation of psychic condition is to describe accurately, and to present the facts so they can be used in a reconstruction of the development of the disorder.

In speaking of the mental condition, we imply a very broad definition. We recognize by it the conditions of the functions of coordination and adaptation of the individual to the environment, with the help of the experience of the past, and the critical and imaginative use of this mental material. It concerns all the reactions which usually involve mental processes, not merely the abstract mental processes, but the entire biological reaction. In our description we endeavor to get unequivocal statements, learn to avoid all terms which are open to confusion, and wherever we are in any doubt about terms we strive to resort to a plain statement of events in simple, nontechnical language. This does not prevent the use, in our judgment, of all available knowledge, but keeps up from the effects of empty technical terms or phrases.

In order to get a clear picture of the condition, first, we endeavor to give each fact its proper value in the chain of cause and effect. While it is important to note that a patient does or says a certain thing, it is of more importance to state clearly the setting in which their utterances or acts occur; it is this which gives to their conduct the value of normality or abnormality. Hence, the important rule in the record is, whenever it appears necessary to do so, one should give conversations in question and answer, or detail an act in the situation, on the ground that a reaction cannot be judged without a knowledge of the provoking agent. The questions are simple, comparable, as uniform as possible, and to the point, and, at times when we wish to get a reaction almost spontaneous, a mere "eh" or interjection helps along the current of speech. Above all things, we strive to make the general situation in which reactions occur quite plain, so that there may be no doubt as to the patient's attitude and to what he reacts.

The mental development of infancy and childhood is inquired into, first by following the personality study of Hoch.[1] In addition to the guide, the following, particularly applicable to children, is especially thought of: The child's habits of eating, sleeping, play, and its reactions to parental discipline, Its affections toward parents, brothers, and sisters, and other little girls and boys, as well as its attitude toward adults, strangers, etc. We hold that the inquiry in infantile mentality is but the stepping stone leading up to the personality study of later child life.



Fig. 2.—Group of ungraded children from Public School 64, Brooklyn.

Particular attention is paid to the child's reaction at home in contrast to that at school, as well as its behavior with playmates on the street, compared with strangers and adults in civil authority. It is well known that there is a marked difference in the manner and conduct of children at home and in

[1] August Hoch and George S. Amsden: A Guide to a Descriptive Study of the Personality [illegible], Journal [illegible], November, 1913.

school. At home the child lives and acts on the stage of his ordinary life, which is a natural setting to him and is easily described by the parents and friends. On it every change and abnormality gains a fine relief. In school the child is placed on a common level with other children. While the experimental ground of the school may be strange, it is one where intellectual grasp and emotional control are easily compared with those of the average normal child. In the absence of any very stirring trends of events, the school record is apt to lose the fundamental connections and contain stereotyped accounts of cut and dried observations, instead of giving us a live, continued account of an individual type of maladaptations of a psychopathic child who

situation and of adequate self direction and adaptability, or it will bring out various morbid conditions —weakness, distraction (as shown in dress and personal appearance, or in the inability of appropriate adaptation to the situation), the dominating emotional tone, and general mental attitude. It also furnishes data concerning the orientation, and frequently a spontaneous account of the child's difficulties. But for a medical account, a more methodical inquiry into the points on which we can base a definite diagnosis, is quite essential.

For this more direct examination, the mode of approach is absolutely decisive of the result. The reserve of the child is usually very great, or if not reserve, at least there is an unwillingness to show a



Fig. 3.—Boys, ungraded, from Public School 64, Brooklyn.

struggles ineffectually against the normal school work.

The very first uniform experimental phase of a child's reaction to the entrance of a school is carefully inquired into. His willingness to surrender his isolated individuality to that of the group in school play and work, and his adaptations to new surroundings and a uniform homogeneous discipline are carefully noted. Ordinarily the child's adaptability to the school is much easier than the same change would be for the adult, for innate reasons.

An ordinary common sense description of how the child acted on the foregoing occasion brings out important points which a medically trained observer will not care to miss. It brings out the general condition of the child with regard to health, strength, general feeling, the ability to grasp the

clear picture of peculiar experiences. It has therefore been found necessary to gain the child's confidence by treating him or her "as a sensible boy or girl," to begin wherever the child does not speak freely, with questions about whether he has got on well with everybody at home and in the school, to pass to the least irritating topics, such as will most likely elicit a pleasant answer and create a congenial starting point. In perfect privacy, the statements can usually be obtained quite fully, often with a feeling of relief in the child, and a distinct gain in the relation between physician and child. Any chances of self humiliation must be eased with verbal suggestions and any appearance of obnoxious ridicule, dictation or correction, and unnecessary argument must be avoided; one should not have special insistence in professional dealings with children. It certainly requires a great deal of knowl-

edge and sympathy with children to choose the right moments, and it is to such an extent a matter of inborn tact that it is doubtful whether any written rules can do more than bring out that which one already possesses.

The feelings of the child, the general condition, and the special idiosyncrasies are kept in mind before all. We find that the utmost care is necessary to make the child feel that all is done to make a comfortable and wholesome relation to the physicians, teachers and parents, the keynote of all our efforts. Sometimes it is necessary to urge analysis of the situation a little more than is pleasant to the child, and sometimes it is found that all one has been able to accomplish at the first examination is to prepare the way for the next interview, and to dispel unpleasant impressions by counter suggestions. At times, a physician meets with idiosyncrasy in a child, and the cause is greatly served if he recognizes his limitations in being able to meet that attitude, and if he knows how to inform some one else of just what is wanted to complete the observation, so that the child need not be bored by the same questions over and over again or submit to a complete examination by another. Above all, we try to connect up all the child's abnormal reactions to their real genetic causes.

The leading question may be: How does the child behave in reaction to school or home work or discipline? In what way does it seem unusual?

One notes first the general attitude of the child in school work, the trend of mood, and activity and interest in his work. The degree of progress and the general retentiveness of memory as to school studies, discipline, and play is the natural inquiry.

The systematic investigations of the child's general mental trend, the existence of special moods not covered in the personality study, easily lead us to a constructive plan of training treatment. Special inquiry is made into the condition of the sensorium (the child's appreciation of sensory stimuli and the simple responsiveness to impressions constituting a psychosensory examination), including tests for orientation of home and school life, memory of recent and remote events, retention, fund of general information, counting, calculation, reading, enunciation, and writing. Finally, there follows a concise verbatim account of the child's own story of his difficulties, and how he thinks they may be set right, with notes in parentheses of the changes in moods, manner, appearance, and conduct while such accounts are being detailed. All is followed by a physical and mental summary of the entire case.



FIG. 4.—Three girls, ungraded, from Public School 4, Brooklyn. The same [illegible]

The foregoing mental examination gives some idea of the manner we have outlined for our scheme of approach in elucidating the psychopathic state. Many of the principles have been taken over bodily from other approved methods of study of the psychoneuroses, especially from Meyer's well known scheme which is now used in a modified form in many mental clinics.

Not the least valuable part of the further record of the child is the embodiment of the social report

on the environmental, social and economic conditions of the child's home. Such often modifies our view of the psychopathy to a great extent, and especially do we find it invaluable in outlining a recommendation of constructive correctional and training treatment for the child in the school.

We may now summarize our tentative scheme for examination of psychopathic children as follows:

NAME, AGE, FATHER'S AND MOTHER'S NAME, ADDRESS.
The Child's Main Difficulties.
School Record in Normal Classes.
Intellectual Tests: *Simon-Binet and its modifications.*
Family History. *Data obtained from parents by physician and social worker.*
Personal History. *Chronological physical development of the patient from birth, made up of facts obtained by physician, social worker, and from parents.*
Physical and Neurological Examination.
Mental Examination. *Inquiries and observations regarding general appearance, manner, conduct, etc. Mental development of infancy and childhood. Personality study. Patient's own story in regard to his difficulties and how he thinks they may best be set right. Social report on environmental, social, and economic conditions.*
Other Facts Concerning the Child
Summary of the Case.
Treatment and Correctional Methods Recommended.
Observation in Ungraded Class.
Results of Reexamination.

It can readily be surmised from the foregoing method of examination, that the main or central clinic is not concerned with any mere enumeration of the types, or simply sorting out different manifestations of psychopathies in children, but is making a genuine attempt to study intensively the few rather typical abnormal reactions in psychopathic children. From the comments upon the three cases to follow, it will be seen that while the children thus studied are unique in many respects, the great problem pressing for solution is to know just what to do to extricate them from their difficulties. It is manifest that the clinic physicians must be more specific and detailed in their recommendations in training treatments than heretofore; it is equally obvious that a group of special tryout schools in the ungraded classes, properly officered and equipped, must be available to put in operation the specific prescriptions worked out. This middle ground is now being approached in a satisfactory way. Many practical ways of filling this gap are now being used, and no doubt they will be interesting studies for teachers and physicians dealing with psychopathic children.

As an appendix to this preliminary announcement of the establishment of this clinic in the ungraded class division of the Board of Education, I wish to give in brief three interesting case histories as a sample of the cases that have appeared before us for examination. The following case is given because it is generally held that most of the main incentives to physical and intellectual development receive their impetus from the emotional faculties of mind and that in the absence of, or marked diminution of the emotional factors, the individual child will remain an idiot or a feeble minded child without incentive or trends of interest by which we may influence his development. When we remember how very important the emotional faculties of the child are for taking up any educational method and especially in those children considered as mentally defective, we see how essential it is for us carefully to analyze the emotional life. It is particularly important to study its alteration for a basic understanding of the normal and abnormal development of behavior and conduct in children. In brief, the affective side of the mind is the uppermost point of attack in the new understanding and interpretation of nervous disorders, of many of the insanities of the more acute and curable sort, as well as of the various states of the mentally defective group.

To those of us who have already given considerable attention to the inner promptings to action of the emotional life, some of the issues involved seem already on the way to solution, but the correctional measures needed to overcome these affective faults require the widest cooperation of the parent, teacher, and physician. With this latter view in mind I shall report here upon a personality study in a boy whose greatest fault lies in the apparent absence of any marked emotional reactions, at least so far as the ordinary ones of everyday life are concerned.

CASE I. This boy, aged twelve years, was referred to the clinic for mental examination as he was thought to be an incipient "shut-in" type who might possibly develop dementia præcox in later life. His school record showed that up to 1911 he was irregular in attendance, due to various slight illnesses incidental to childhood. His teacher reported he had passive attention, a sort of indifference which affected all his work. His memory was not good and his oral work was poor. His handicraft in the school shop was poor and insufficient, although he showed fair ability in reading and writing. He has shown some special taste and aptitude for music, although no marked proficiency in the art. His teachers designated his disposition in the characteristic phrase of "being colorless." It is confirmed by his mother and teacher that he seemed in a dazed state, was afraid to play with other boys, and was slow and indifferent to any motor work or play. The Binet scale shows him of normal rank. His father, of German descent, is an opener and packer at appraisers' stores. He is considered a little irritable and quick tempered. The mother is of Irish descent, and in robust health. The boy was her first child. She has another son, eight years old, who is in marked contrast to our patient in being bright, quick, and alert in all things, and in the mother's words, is a "typical boy."

Our patient was of normal birth. At home he never has been noisy or troublesome, has a good disposition and helps some when he is directed. He never offers his services nor takes any initiative. The family lives in a good physical and mental environment. The boy has no physical infirmity so far as can be judged.

The mental examination brings out the following facts: The boy was bright from infancy beyond the ordinary child (mother's statement); has always been interested in music and could hum tunes before he could talk. He picked up the playing of the harmonica and a toy piano independent of instruction. He has taken music lessons during the past two years until he was stopped by the school principal, who thought the boy was not getting out enough in the fresh air, which he thought accounted for his indifference. Although he has gone out more of late, he is still somewhat anemic in appearance and is still listless and unusually quiet for a boy of his age. He has never liked boy friends and prefers the society of older people. He never has had any peculiarity of eating, sleeping, playing, or any of the automatic processes of developmental life. In school he has never cared for arithmetic, and is three years in arrears in this subject now. At present he does little home work, but is always self contained and largely indifferent to any prompting in play or work, or in teamwork of baseball, hockey, etc. He is always slow in forming his judgments; never shows any constructive imagination nor any liveliness of fancy in any direction. He has never been able to decide what occupation he wants to engage in in after life, although he has been frequently asked about it and different occupations have been suggested to him. He is of no practical turn of mind

nor can he use tools well. He quickly surrenders all such chances to make things to his younger brother, who takes the lead in any plan requiring constructive knowledge or activity. Neither can he recall any kind of games he has cared to play, nor any he would like to try. While fairly talkative at home he is very silent in the street and in strange places. He is not self depreciatory, but depends much upon others for proving his opinions, especially upon his mother, who is a rather forceful character. He is not especially attached to his mother, however, as she may be away for long periods without causing him anxiety, alarm, or depression. He is neither conceited, egotistical, nor proud nor vain. While he is not fond of dress, he always keeps himself clean and presentable. He is inclined to be conscientious in doing things when once they are turned over to him. He selects by preference the associations of older people of either sex and has nothing in common, interest or curiosity, with boys or girls of his own age. He shows at times a rather keen desire to hold off the friendly advances of other boys, singly or in group contact. On the whole, he prefers to be alone, and at such times he does little but look about or walk idly about the house, with correct deportment, whether watched or not. He is rather shy and diffident with strangers. He is naturally sympathetic and kind hearted toward animals and playmates when urged to associate with them. His mother calls him "the tender minded boy," and praises his orderly and systematic habits of keeping his room and personal belongings in order. He has never been assertive toward other boys and was never in a boy fight in his life. If struck, he never retaliates, but walks away from his assailant. While the boys frequently engage in a free-for-all fight when school is dismissed, he never joins in nor rushes to see a fight where others are engaged, but says: "Such things don't interest me. I just take my books and walk home. No, I am not afraid, but I don't care about what other boys do." His rather studied aloofness from ordinary human boyish interests has won for him the epithets of "Judge" and "Professor." He has never been known to react to any news favorably or with enthusiasm, nor is he depressed. He is very constantly unperturbed and of one mood always. He is never irritable nor irritated. He has a few friends, but makes little effort to attach them closely to him. At the examination he remained in an unconstrained attitude, was little interested, responded easily and readily to all questions, and made all statements in a normal manner. His features were dull and masklike. He seemed a bit dazed, in a sort of brown study. At other times he had a slightly perplexed attitude as to what the inquiry might be about, but evinced no special curiosity to inquiries put to his mother. If urged rather warmly, to reply to pointed questions whether he were ill or what was the matter with him, he would reply in a slightly animated manner for a short time (three or four minutes), but at the first opportunity would quickly sink back into his former uninterested, self contained manner. His deportment during the examination bore no evidence of any peculiarity of manner, speech, or expression, except of complete indifference and lack of interest. At one time, in efforts to arouse him, his mother invited gay companions, boys and girls, to the house; the former left him severely alone with derisive remarks regarding his personality, and the latter called him a stick. He was not disturbed by any of these remarks.

The boy resembles his mother closely in physical makeup and in temperament.

An uncle took him in charge for a yacht sail for a day or so to "stir him up." While his manner and deportment were quite correct and inofficious, he never altered this attitude during the entire trip. At the end of the trial the uncle turned him over to his mother in disgust.

A few years ago, he often inquired in a mild manner about the origin and meaning of life. His mother explained some things he inquired about in a simple way, but after listening for a time he said he couldn't comprehend or understand it, it was all so different from what he felt. He has never shown any sexual curiosity nor to have taken any means to find out about it. Physically he is apparently a normal boy, a little small in stature for his age.

After many inquiries the boy says, in answer to definite questions: "I have no difficulty in school; I stand about average in the grades. I like to go to school as well as anything. I just as soon go if I have to. I do and like whatever is given me to do. I just follow what others say for me to do."

In brief, we have a boy of twelve years, slightly retarded in mental growth in the intellectual field, with practically no emotional reaction whatever, who has no push or tension, curiosity or interest—the mainsprings to proper and normal development. A point of equal interest to that already determined, an absence of emotional life, may be called attention to by the query, What will be the after development of such a boy? If there is a process of unfolding of the emotions, How may they be brought out? Apparently the personality study does not reveal this boy to be a shut in type, but rather as one in whom the emotions were shut out or off in very earliest infancy. What may be done for such characters in the home and school to intensify or open up the emotions? Undoubtedly the appeal must be on the ground of the emotivity of the boy. It may be just possible that the musical faculty should be the beginning point. One often sees the musical instinct the chief or main appeal in the frankly mentally defective child, and all know how much is made of this form of developmental training in institutional schools for the feeble minded; even intellectual games and gymnastic dances may be profitably employed and utilized.

It is commonly believed by many that the mentally defective child is uniformly deficient in all his faculties. It is often held that when some one or two of the defective child's mental traits are not completely submerged in the general deficit, that such less marked defects do not warrant us in greatly changing the general routine plan of education. It requires no lengthy argument for us to see that if a boy, twelve or fourteen years of age, cannot do the intellectual work of a boy of eight, but may be unusually clever in the use of his hands in shop or office, that a useful education means to such a boy either the best development of these motor faculties or he must do without an education. It may be we have too long insisted upon pure erudition as an educational standard. In spite of all that has been said, we do not fully realize that the real work to be done in the world requires motor coordination training as the part of any complete system of public education. The vocational and industrial schools throughout the country indicate the tendency of the times to meet the situation just alluded to. I wish to drive home this educational principle by citing an excellent yet pitiable example of the foregoing truth, that to some children an offer of book education means no education; the boy's case is, in fact, a detailed study at our clinic of a lad of fourteen years who has the visualized memory of a child of but three or four years.

Case II. The study is based upon a boy, aged fourteen years, who is totally unable to make any progress in the ordinary book work of his school. He cannot spell the simplest words such as "girl" or "desk," and does not know the three times table in multiplication. His sense training in the school is but fair. He was especially quick to respond at command in imitation of all physical training. His handwriting was shaky and much of his industrial training was accompanied by trembling movements. He speaks well. His reading and arithmetic are equal to a boy's of seven years. The amount of general information was fair. His power of attention and memory were good. In the ungraded class work he did good manual labor.

The family history was negative, and threw no light on

the causes of his mental defect. An inquiry into the personal history is negative aside from an attack of scarlet fever at three years of age. A year after the fever, which was moderately severe, he had two or three peculiar faint turns which pointed to a certain type of epileptic fits, but nothing similar to them has occurred since. He is a robust, fine looking, bright boy, with no apparent physical or nervous disorder.

Careful test shows his intellectual development to be that of a boy of seven years. He stands in great terror of his father and the teachers, who think he is lazy and unwilling to learn. At home, he reads his lessons over and over again before the father comes home at night so the father will not hear his mistakes and scold him, but he continues to make mistakes in spite of all efforts. The main examination shows that he has a good disposition. He went through all the manual and motor tests easily and well. It was found that ever since the attack of scarlet fever at three years, he has been sluggish and indifferent to any kind of work requiring visual memory. He has always been poorest in spelling. His motor cleverness and ability to handle and understand mechanical work is well shown in an incident of last summer, while in the country on a vacation He wanted to take two broken bicycles apart and make one good one out of the remnants; after days of labor and much constructive adaptations he succeeded in accomplishing the task, in spite of receiving advice that it could not be done. It is found that he has gradually become a timid type of boy who never plays freely or naturally with other children and always prefers to be alone. He is interested in electrical work and attends to the electric bells in his home, and in fact does all the repair jobs about the house. He is employed by the teachers in his school at all sorts of work. His very lack of getting on at school seems to have engendered a shyness, timidity, and feeling of inadequacy and doubt, which in turn are slowly shutting him out of daily friendly contact with the outside world. He is becoming morose and solitary in habits. What the boy himself has to say is as follows:

"I don't know why I can't get on at school; I can't spell nor write nor do arithmetic. I can do any sort of hand work; I seem to understand that by nature, but I can't carry anything in my mind. I mean I can't see a thing in the shop window and go home and make any part of the toy or machine by having just seen it in the shop. I want to be an electrician, but realize I must know more about books if I am to do any good work in life. If I could get an education through my hands it would be easy."

We see here a boy of fourteen years, who is unable to make any progress in school work beyond the fifth year, owing to the fact that he has a rather poor auditory memory and practically no visual memory. On the other hand, he is able to do any sort of manual labor, even that of difficult technic, in advance of a boy of his age. He is a bright, intelligent, and neat appearing boy. Intellectually he is not feeble minded, as he has a fairly well elaborated mind in many if not all of the essentials of rational use of his faculties.

Undoubtedly the scarlet fever at three years had something to do with the signal cutting out of the visual memory. Just what happened at that period we cannot say at this time. The plain duty before us is to recognize that modern civilization places heavier visual memory demands upon us as life grows more complex. In the great contests of mental workers the best prizes go to the visualists. The audists are more or less doomed or set apart for the handworkers of life. Even in the arts we find the audist taking a musical career; the musical arts are said to be the least intellectual of them all. Frankly and in brief, What are we to do for the poor visual memorists as shown in this boy, for the problem passes beyond the welfare of this individual boy to that of a large group? First, we must know more definitely what the audist and visualist types mean as regards mental development and useful work in the world. We must know what specific appeals may be made to help forward the weakened avenues of the sense impulses in development. Until these studies are made up, on which some of our group are now at work, we have recommended that this boy be given special motor and trade training with which ordinary school studies may be concretely added as a part of such motor work. Working under this plan, he is now more satisfied and is advancing in the acquirement of mental knowledge.

I shall now call attention to an entirely different type of boy. He is neither emotionally defective nor intellectually backward or deficient. He is the antisocial type, that type which I am told is often designated by some as afflicted with original sin, in large though as yet embryonic measure. He is a nonconformist to society at large, at home, and in the school, an intensive individualist and egotist in miniature. Let us see what the specific analysis shows.

Case III. H. H. is a boy, aged eight years physically, but many more than this in worldly wisdom. In the school he was classed as a nervous and inattentive pupil. He liked drawing and was also good in arithmetic, writing, and spelling. The teacher thought that on the whole this boy was bright and quick in his work; in other things he was very dull and slow, and these were the things that he did not care to do. The teacher reports that the boy is very nervous, and the boy thinks the teacher is.

In the family history we find that the mother died of tuberculosis when the boy was two and one half years old, and that all three children suffered from marasmus. The father is temperate, and the grandmother, with whom the boy now lives, thinks that the father's disposition is rather bad and stubborn, and she is therefore taking charge of the child.

The boy was normal in development after one year of age, when he recovered from his marasmus. He learned easily, always kept up with his classes, and went as far as 2 A. After acquiring this grade, which was about a year ago, he became inattentive. He has very good sense in regard to ordinary duties, uses tools well, chops wood, and is very active in running errands. He is naturally talkative; likes animals; is not especially obedient at home and resents being scolded and corrected. He seems naturally to pick out bad boys as being more interesting, and sets them up as his ideal. His grandmother thinks he is sly, and that he confides in his boy associates and not in her. He is not particularly truthful and is likely to find some way to secure his ends and do what he likes. On this superficial background of bad deportment and conduct, we will now see what the boy's own story is:

"I don't like school as it is run; it is not as interesting as many other things. There is not enough to do. There are lots of other boys who do not like school any better than I do. I just go there and behave as I see fit. When they correct me, I tell them to mind their own business, and then if they punish me, I play truant. I like the boys very much and they like me. I do not like my home; it is so dull; they keep saying 'don't' to me all the time. My special friend is Tony, the boy across the street; he is the head of the Ninetieth Street gang; we have a den and we get things from the 'ginny' at the corner. Some boy goes in and buys things in the shop and we take things off the stand outside. We only take things to eat; we get bananas, candy, and onions. We take bread and cakes from the little boys and girls who are sent to get things at the baker's. We take all these things to the den and there have a good time. (With righteous indignation) No, we never steal money; of course we take pennies from the small boys who are sent on errands. When the cops chase us, we run out on the rafts and if necessary we go in the river. We also go on the roofs; we know lots of places to hide away from the cops. I am second to the leader in the gang; they call me Henny Penny. We have had some

good fights with other gangs, the Eighty-eighth Street gang in particular. We get bruised up considerably, but we come out best on the whole. The boys who do not get any money at home and not allowed to do errands to earn it, always steal it from their parents—how else are we to have any fun? Granny doesn't like me to be with these boys and she thinks they are bad company for me. I have belonged to the gang about six months now. I hope to be leader some day."

We see here a boy who is difficult to manage, both at school and at home, who has easily passed beyond the ordinary conventional ways of discipline for boys of his age. He has a very keen desire to take up some manual occupation at the earliest possible date in order to make money and engage in sports and other amusements. He particularly wants to do work, like other boy apprentices older than himself. It was recommended that he be sent to an institutional school where he could have a two years' vocational training and discipline, and where life would be freer in the sense of physical activities, sports, games, etc.; that he be placed under the mass government rule, such as holds in the George Junior Republic, and that a masculine system of discipline be outlined for him. His grandmother suggested that he be sent to his father, who is superintendent of a farm in the country, as the boy looks up to his father and is very fond of him. The father is very quick tempered and has very little patience with boyish pranks; having somewhat the same temper and probably having passed through the same kind of boyhood, it would probably be difficult for him to be fair to his son in the matter of correctional treatment.

While we recognize that the juvenile delinquent is a proper study for the courts established for this purpose, we all know, as in this case, that the beginnings are worthy of study in the home and school, and many a habit of waywardness and bad trends of conduct can be best handled early. We must modify the school for the difficult boy and establish boy clubs as interesting as the gangs, and mould the abnormal trends of character and deportment to a proper upbuilding of future usefulness for the individual and society.

Finally, I wish to express on behalf of my colleagues and myself our best thanks to the Board of Education for its wise and progressive advancement of our work in the clinic, and to Miss Farrell in particular for staunch support of the new work and hearty cooperation in making it thorough, efficient, and practical.

The pictures show that the needs of the psychopathic children for many materials, differing in quality and quantity, are fully met in the ungraded class school equipment. While it is true that the purely educational value in any material is lost in a great measure after the child has learned to manipulate it, technic and skill, the essential commercial value of the artisan, may be developed by the use of such materials after the educational value has been exhausted.

In addition to a variety of material for expression, the children need to have their experiences associated and correlated to develop a well stored memory, and it is one of the basic principles in these special schools to arrange the work to that end. The appeal in the school activities is to the core of interests which touches the child's activities in the most intimate manner. For instance, at one season of the year the pupils are all Indians, at another, Eskimos; again, the boys are farmers, busy planting and cultivating the soil, while the girls are busied about housewifely duties, making butter and cheese, sewing, baking, cleaning, and making beds. Some of these school training duties are shown in the pictures, and other photographs illustrating further the work carried on in these ungraded classes are omitted on account of lack of illustration space.

It will be seen that everything is planned in such a manner that the pupil's core of interests shall be so sharpened and enhanced that he may be the more easily led from the concrete education to that of the abstract, as in the ordinary school curriculum, which is without an appeal to these psychopathic children. For instance, abstract and formal letter writing, as in the ordinary school, is replaced by writing lists of goods and store orders; a real store and real money are used. Composition work is developed by the pupil writing a full description of the article wanted. The same idea persists in extending the child's knowledge of reading. (The whole ungraded class system was pictorially lectured upon by Miss Farrell following the author's paper before the New York County Medical Society.)

Particular attention is called to the group of three girls shown in one of the photographs, as this group illustrates a type of psychopathies with special mental defects which make it difficult to class them with the usual institutional types of mental defectives. It will be seen that their appearance is not that of feeblemindedness, and it is for the careful study of just such children that the psychopathic clinic is established. Lest one may think that these girls shown here are not backward in the normal grades, it may be interesting to point out the degree of backwardness shown in these children (Fig. 4).

No. 1 (beginning at the left). This girl was proposed for an ungraded class when she was seven and one half years of age. She was born in the United States of Bohemian parents. She entered school when she was six years old. She required twice as long to finish the first half of the work of the first school year; she was in the second half of the first year's work at the time of this report. Her motor coordinations were good. Her physical training and manual training were above the average. She took great pleasure in folk dancing and in the rhythmic games. The finer coordinations were good, as was evidenced in the sewing, etc. Notwithstanding these facts her oral expression was defective. Her intellectual progress was unsatisfactory, and the teacher complained that the child "does not listen." This was said to be a defect of attention. The child is amiable, pleasant, and tries very hard to succeed in her school work.

No. 2 (centre). This girl was proposed for an ungraded class when she was twelve years old. She was born in America of American parents. She entered school when she was seven and a half years of age. She did not attend the kindergarten. She required four times the time allowed for the completion of the first half of the work for the second school year. She seemed to improve, and fin-

ished the second half of the second school year in twice the time usually allowed. The first half of the third school year she completed in three times the amount of time usually allowed. Her motor coordinations were poor. The physical training showed that this child was unable to take or hold the correct posture; manual training was fair; her oral expression poor; her intellectual acquisitions were far from satisfactory. She could read simple sentences and do the simplest examples in addition and subtraction. She was a good child, had a nice disposition, and did the best she could to conform to the regulations of the school. Her attendance was uncertain; she had been absent about one fourth of the time during the school year preceding the date of this report.

No. 3. This girl was proposed for an ungraded class when she was eleven years old. She was born in Russia, and came to the United States when she was three years old. She entered school when six years of age. She did not attend kindergarten. She required six times the amount of time allowed for the completion of the first year's work; and four times the amount allowed for the first half of the second year's work. Her motor coordinations were very poor, as was evidenced in her physical training, manual training, writing, and oral expression. Her intellectual acquisitions were meagre. Her ability to read seemed to be periodic. Her number work was very poor always. She was troublesome and disagreeable, and showed no ability to cooperate in the work of the school. Notwithstanding her lack of progress, she liked to attend school.

84 EAST FIFTY-SIXTH STREET.

INTERNAL PACHYMENINGITIS IN YOUNG CHILDREN.*

BY ALFRED GORDON, M. D.,
Philadelphia.

Pachymeningitis in children, while not frequent, is not rare. Data are accumulating with regard to its etiology, diagnosis, and therapeutics. Although the literature is getting large, nevertheless the subject is far from being elucidated. The clinical picture does not present sufficiently characteristic features to enable one to make a diagnosis of pachymeningitis.

The well known form of internal hemorrhagic pachymeningitis of adults is not infrequently found at autopsies of the insane. In mentally normal individuals it is observed in advanced age, but during life the diagnosis presents frequently insurmountable difficulties. In children the same diagnostic difficulties are encountered. In the latter case it may present the picture of hydrocephalus or leptomeningitis.

Pachymeningitis may occur in the external or in the internal layer of the dura. It may be acute or chronic. It may be serofibrinous or hemorrhagic. The hemorrhagic form is better known than the serofibrinous form. Some authors believe with Göppert that the serofibrinous pachymeningitis is rare, that if observed sometimes at autopsy, it is because it is overtaken in its stage of development and that, if the patient lives long enough, it terminates with the hemorrhagic variety. This, I believe, explains why some cases observed as serous meningitis or as hydrocephalus, are finally found to be hemorrhagic pachymeningitis. The cases of Göppert, Finkelstein, Freund, and Rössle prove this contention.

Etiologically, internal pachymeningitis in young children may be traumatic or spontaneous. In the first case the injury usually occurs at birth. In the second case a dyscrasic condition is the direct cause, on the basis of syphilis, tuberculosis, rhachitis, or scurvy. In a certain number of cases a bacterial origin might be taken into consideration, as pachymeningitis has been observed in the course of whooping cough and other infectious diseases. Here an infectious venous thrombosis was the direct cause of the disease.

As to the nature of the affection; it is still debatable. Two principal elements are to be considered, hemorrhage and inflammation. According to some, the hemorrhage occurs first and inflammation follows. But the accumulated data speak strongly in favor of the opinion held originally by Heschl, Cruveilhier, and Virchow, viz., that meningitis is the first phenomenon and the hemorrhage is a secondary manifestation due to rupture of newly formed bloodvessels. The pathological findings usually consist of a vascular membrane strongly adherent to the inner surface of the dura. The bloodvessel walls, which are delicate, are easily ruptured. At first the membrane is soft, but later it becomes thicker on account of the proliferated connective tissue. Frequently it consists of several layers, which are variably organized and between which hemorrhagic accumulations are found.

The most frequent seat of internal pachymeningitis is the convexity of the brain over one or both hemispheres. No adequate explanation could be presented for this localization. In the two cases described here, the condition occurred over the upper parietooccipital cortex.

Clinically, the affection usually develops in young children insidiously, and the symptoms are primarily those of hydrocephalus, viz., enlargement of the head, increased reflexes, spasticity of the limbs and sometimes convulsions, bulging of the anterior fontanelle, strabismus, hypertonia of the musculature, frequent vomiting, finally high pressure of the cerebrospinal fluid, which is seen on lumbar puncture. In the hemorrhagic variety the lumbar puncture will reveal the presence of blood cells in the cerebrospinal fluid, except in cases of encapsulated hematomas of the dura. Another very important diagnostic phenomenon is the occurrence of hemorrhages into the retina.

When an attempt is made to ascertain what are the characteristic clinical features of pachymeningitis interna which could be of differential diagnostic value, difficulties are encountered. The retinal hemorrhages just mentioned are not pathognomonic of hemorrhagic pachymeningitis, as they may be en-

* Read before the Section on Pediatrics of the New [illegible]

countered in cerebral tumors, in primary hydrocephalus, in tuberculous meningitis. The blood in the cerebrospinal fluid may be absent if the hemorrhagic focus in the dura is encapsulated. Consequently these two symptoms, upon which some authors insist as being, so to speak, pathognomonic of hemorrhages in the dura, are not of diagnostic value in every case. Moreover, in the cases in which the serofibrinous phase alone is present for the time being, viz., before the effusion of blood occurs, there may be no retinal hemorrhage found, neither is there a trace of blood in the cerebrospinal fluid upon lumbar puncture. The diagnosis therefore will be still more difficult.

R. Rössle has recently called attention (*Centralblatt für allgemeine Pathologie und pathologische Anatomie*, v, 20, p. 1,043, 1909) to the fact that our classical views on pachymeningitis require correction. In view of the predominant frequency of pachymeningitis with hemorrhage, all other inflammatory conditions of the dura are not sufficiently considered and are not recognized as independent pathological types.

That a serofibrinous form may exist and run a chronic course without a hemorrhage is mentioned for the first time by Jores and Laurent (*Ziegler's Beiträge*, XXIX, 1901), but they have not laid special emphasis on the occurrence. Orth speaks of pachymeningitis vasculosa, which was found in a case of trauma; there was hyperostosis and the inner layer of the dura showed newly formed capillaries, but there was no hemorrhage. It is true that in the majority of cases the mixed forms are observed, viz., foci of hemorrhage with areas of serofibrinous condition. Rössle insists upon the existence of acute serous pachymeningitis in a pure form, but this form is frequently overlooked, as often, in addition to the inflammatory condition of the inner layer of the dura, the pia arachnoid participates, and an edematous state is present. The same author observed a chronic internal pachymeningitis in adults, without hemorrhages. In his case there was a remarkable poverty of capillaries, but there were deeply seated cellular groups (*Knötchen*), which probably originated from large lymphcells, and a pronounced proliferation of connective tissue.

As to the occurrence of internal nonhemorrhagic pachymeningitis in young children, no record could be found in the literature at my disposal. The second of the two cases reported here presents such an occurrence. During the entire illness, which lasted a whole year, the little boy presented frequent convulsive seizures, rigidity of the neck, a stuporous condition, elevated temperature, strabismus; in other words, there was a clinical picture of meningitis. The cerebrospinal fluid was clear and free from microorganisms throughout the entire course of the disease. A slight lymphocytosis (10 to 15) was observed at the first examination. Autopsy revealed an internal pachymeningitis without a hemorrhage. The first case is an example of the classical hemorrhagic pachymeningitis from a pathological standpoint. The interesting peculiarity about this case is the persistent absence of blood elements in the cerebrospinal fluid obtained repeatedly from lumbar punctures.

In discussing the pathogenesis of hemorrhages in pachymeningitis, reference was made to the views held by some authors, viz., that the absence of blood in the cerebrospinal fluid in some cases indicates an early stage of the pachymeningitis, and if the patient lives long enough, blood will eventually penetrate the cerebrospinal canal; also, if the hemorrhagic focus is encapsulated, no blood will be detected upon spinal puncture.

In my first case the patient died a long time after the onset of the disease, and no encapsulation of the blood clot was found. This peculiarity renders the case somewhat exceptional. Before drawing conclusions as to special diagnostic features of pachymeningitis interna in children, let us consider the histories of the two cases in detail.

CASE I. Child, H. S., male, aged thirteen months, born normally and at term, breast fed, showed signs of poor development shortly after birth. At the age of six months, he was nervous, restless, cried continuously. Some convulsions developed. During the first week the seizures occurred daily, almost every hour. Gradually they decreased in frequency. At the age of nine months they became again very frequent. At that time he came under my observation in the hospital. The convulsions at times would involve all the limbs simultaneously, but most frequently the left arm, left leg, and left side of the face. They occurred during the first month of observation several times a day, and some days as often as ten or fifteen times.

The child's head was drawn backward and rigid. The head was not very large; the anterior fontanelle was open, but not bulging. The child was entirely listless; his attention could not be attracted by any noise. The eyes rolled continuously from side to side. The legs and arms were almost always in a state of spasticity with markedly increased tendon reflexes. Ankle clonus was present on the left side, but not on the right. Both great toes were constantly in a state of dorsal overextension. The eyes showed internal strabismus on the right side; their movements were limited. Ophthalmoscopically they showed multiple retinal hemorrhages irregularly distributed. The child took very little milk and frequently vomited. He voided urine every fifteen minutes. A continuous groaning and moaning could be heard.

On the third day of his admission to the hospital a rise of temperature was observed. From that time until the fifth day before he died the temperature oscillated between 101° and 105° F. Under treatment it would sometimes go down to 98° F., but not always.

The blood serum and the cerebrospinal fluid were tested for Wassermann reaction. The result was negative. Noguchi test was equally negative. Uranalysis was also negative. The cerebrospinal fluid, which on lumbar puncture ran out under very high pressure, was clear, transparent, and presented no sediment on centrifugation. Microscopical examination showed a slight lymphocytosis (8 to 10); no microorganism could be detected by direct examination or cultures; the latter were totally negative.

Several lumbar punctures were performed at various intervals for two purposes; first, for repeated serological tests and bacteriological examinations; next for therapeutic reasons. Improvement in the general condition invariably followed after each evacuation of some fluid; the convulsive seizures diminished considerably in frequency and intensity and sometimes would disappear for a week at a time. The child would then take nourishment and show decided improvement in the general condition. But soon the favorable effect of the lumbar punctures would disappear. Convulsions returned, rigidity reappeared, stuporous state would set in. As the convulsions invariably occurred on the left side, operation over the right motor area was directly indicated. Dr. Edward Martin accordingly removed a flap of bone. The following condition was found: The bone was somewhat thick. The dura was decidedly thickened and somewhat difficult to

separate from the underlying tissue. A large cystic formation filled with cerebrospinal fluid was found beneath the exposed area, gelatinous in appearance. The veins close to the Sylvian fissure were found engorged. The cyst was opened, evacuated, and the dura not sewed up. Wax paper was placed over the dura and skin loosely sewed up.

The child recovered from the immediate effect of the operation. Four hours later, a convulsion appeared on the left side. During the following week two or three convulsive attacks occurred daily. Gradually they subsided and finally disappeared for a period of three weeks. During that time the rigidity of the neck decreased considerably, the temperature went down to normal or even subnormal. The child began to perceive objects and take nourishment.

Gradually the former symptoms returned. The temperature went up. The rigidity of the neck and convulsions reappeared. The seizures became less and less confined



Fig. 1.—Internal hemorrhagic pachymeningitis. Dura over the left parietooccipital region much thickened. Blood clots seen on the inner surface between two layers of dura.

to the left side; they varied as to the localization, but most frequently they were generalized. They became exceedingly frequent. As considerable relief was obtained before the cranial operation from lumbar punctures, the latter were now indicated.

During the last six weeks of the patient's life ten lumbar punctures were performed. Each time the cerebrospinal fluid ran out under very high pressure. Decided relief with regard to convulsions and to the mental condition as well as the rigidity of the neck followed each puncture. It seemed that continuous drainage of the cerebrospinal fluid was directly indicated. A cisterna magna drainage of Haynes was proposed to the child's parents, but they declined further operative procedure. The child gradually grew weaker, status epilepticus developed, and the patient expired. It should be mentioned that the fluid extracted after each lumbar puncture up to the time of death was examined, chemically, cytologically, bacteriologically, and for Wassermann and Noguchi reactions. During the entire illness the results were negative from any standpoint except the slight lymphocylosis mentioned above.

At autopsy the brain was found wet; coagulated blood was seen on the inner surface of the dura at the level of the upper parietooccipital region on the left side. The blood clot was separated from the pia arachnoid by a membrane, which together with the dura above was very thick (see Fig. 1). The ventricles were somewhat distended and filled with a transparent serous fluid. It was therefore a case of a mild degree of hydrocephalus. There was no flattening of the convolutions, no special changes in cortical cells nor in the tracts from the brain down to the spinal cord.

The convulsive seizures, which prior to the operation were confined to the left side of the body, are readily explained by the cystic formation or rather by the circumscribed serous meningitis situated over the right motor area. The localized convulsions disappeared with the removal of the cyst.

The other interesting feature of the case is found in the repeatedly negative results of the many examinations of the cerebrospinal fluid. While clinically the patient, through the entire course of the disease, presented an unquestionable picture of meningitis, nevertheless it was remarkable that at no time microorganisms had been found, either directly or from cultures. Moreover, no cause could be elicited for the meningeal condition. There was no indication for an intracranial or extracranial focus. No fracture of the skull, no involvement of the cranial cavities was present which could explain the invasion of the meninges. Briefly speaking, no point of departure of the meningitis could be detected. A striking feature of the case was the absence of blood in the cerebrospinal fluid at each puncture of the spinal canal, in spite of the fact that a hemorrhage was present in the meninges. The rapid reaccumulation of cerebrospinal fluid, in spite of the removal of sixty to eighty c. c. each time, spoke in favor of hydrocephalus. Nevertheless the shape of the head of the child whose anterior fontanelle had not closed, also the condition of the latter, viz., absence of protrusion, all militated against a primary hydrocephalus. On the other hand, the constantly negative results of the examinations of the cerebrospinal fluid, and particularly the total absence of microorganisms in the latter, both by direct examination and by cultures, excluded the possibility of a primary leptomeningitis. A cerebral malformation of a neoplasm was thought of in spite of the absence of special changes in the papillæ. The findings at autopsy of a pachymeningitis and its location, render the case interesting and instructive. Outside of the hemorrhage, which could not be suspected because of absence of blood in the cerebrospinal fluid, the entire clinical picture could be interpreted on the basis of a pachymeningitis.

Case II. Colored boy, aged five years, about a year ago had convulsions after a period of headache and general malaise. During the first week the seizures occurred every two or three hours. Gradually they became less frequent. The headache continued, and when two months later he came under my observation, he presented the following symptoms: Stuporous appearance, neck rigid, spine rigid, some degree of spasticity of the lower extremities with increased knee jerks, but no other abnormal reflex. The eyegrounds presented nothing abnormal. The sphincters of the bladder and rectum were relaxed. Child had convulsive seizures of a generalized character two or three times a week. The temperature was 100° F. Wassermann and Noguchi tests of the blood serum and the cerebrospinal fluid gave negative reactions. The latter was also examined for microorganisms, but with negative results. Cultures also proved to be fruitless. There was, however, a slight lymphocytosis (10 to 15 cells) at the first examination, but this condition disappeared upon subsequent examinations. During the following three weeks the temperature oscillated from 90° to 103° F. The convulsions became more frequent. The Wassermann reaction

was negative, and no microorganisms could be detected in the cerebrospinal fluid at several examinations. Each tapping of the spinal canal was followed by a considerable spurting of the cerebrospinal fluid, showing that the latter was under a very high pressure. The negative serological and bacteriological findings, also the clinical picture in this case, made it almost identical with the first case reported above. The diagnosis was therefore serous meningitis, and in view of the pathological findings in the first case, pachymeningitis was also thought of. The patient's condition gradually grew worse, status epilepticus set in, and he finally died.

Autopsy, performed six hours later, revealed a pachymeningitis of the superior parietooccipital region over the left hemisphere. The dura was here unusually thick. A newly formed membrane was seen in the inner surface of the latter. A considerable amount of serous fluid was found on the surface of the brain and in its ventricles. Microscopical examination revealed no changes in the tracts through the entire cerebrospinal axis.

The two cases here reported present the following common symptoms: Convulsive seizures, elevated temperature, hypertonicity of the musculature, rigidity of the neck and dorsum, a profound mental hebetude, finally the absence of microorganisms in the cerebrospinal fluid, which at all times remained clear and transparent and which was under very high pressure. The clinical difference consisted of hemorrhage in the retinas in the first case, but not in the second. In both cases internal pachymeningitis was present, but in the first case there was also a hemorrhage. Apart from the state of the cerebrospinal fluid, all the other symptoms may be also those of meningitis of all varieties.

In an attempt to find some phenomenon which, during life, could be considered pathognomonic or at least indicative of internal pachymeningitis, hemorrhagic or nonhemorrhagic, our attention must naturally be directed toward the condition of the cerebrospinal fluid. Blood may be found in this fluid, not only in the disease in question, but also in hemorrhages occurring in the substance of the brain tissue. The peculiar persistence of transparence and clearness of the fluid, particularly the total absence of microorganisms by direct examinations and by culture methods, these are the special phenomena on which a diagnosis of pachymeningitis perhaps could rest. The presence of blood alongside of the pachymeningitis may perhaps be determined from the retinal hemorrhages, which have been found by the majority of observers in adults and in children. It is evident that all the other symptoms must be taken into consideration, but if, in addition, the foregoing conditions of the cerebrospinal fluid are found, the presumption is in favor of internal pachymeningitis.

The early detection of this form of meningitis will lead to early intervention, either by frequent lumbar punctures, which gave considerable relief to my first patient, or to more radical operations, of which Haynes's drainage of the cisterna magna appeals most strongly.

The two cases reported form an additional document to the meagre literature on pachymeningitis interna in young children. The second case is an example of a nonhemorrhagic chronic pachymeningitis, which to my knowledge has not hitherto been reported. Finally, in my judgment, the cases bring forward a certain state of cerebrospinal fluid which may be considered of some diagnostic value.

1812 SPRUCE STREET.

HYPERTROPHIC PYLORIC STENOSIS IN AN INFANT: RAMMSTEDT'S OPERATION.

A Case Report,

BY HOWARD LILIENTHAL, M. D.,
New York,
Attending Surgeon, Mount Sinai and Beth-El Hospitals.

Gastroenterostomy, in spite of its dangers and difficulties in young babies, has been the favorite procedure of surgeons in cases of obstruction from congenital thickening of the pyloric walls. Scudder (6) collected 135 cases with a mortality of forty-nine per cent., even with very early operation. In a later communication (*Annals of Surgery,* February, 1914) he gives the statistics of seventeen of his own cases with three deaths, an excellent record. Pyloroplasty has also been followed by extremely high mortality. Finally, Weber, of Dresden (3), hit upon the idea of a pyloroplasty without actually entering the canal. It is not necessary here to follow up the developments of the operation which was performed in the case to be reported, but for those who are interested, reference to the bibliography at the end of the communication will suffice.

Rammstedt has reported two cases operated in by his method with recovery. He makes a longitudinal incision through the indurated tissue down



Fig. 1.—The patient, Joseph L., [illegible] after operation.

to the mucosa, but not through it. There is an immediate separation of the divided structures and the pylorus at once becomes patent. Without visceral suture or plastic of any kind the abdomen is completely closed. The operation is short and easy. The wound of entrance through the abdominal wall need not be large. The handling of the viscera is minimal. The contrast to the delicate and difficult posterior gastroenterostomy, with its accompanying evisceration and handling of the parts, is striking, and, perhaps, most important of all, Rammstedt's operation preserves the normal relations of the gastrointestinal tract which is obviously impossible in gastroenterostomy.

Case.—My case was that of a little boy [illegible] old Joseph L., who was admitted to Mt. Sinai Hospital, December [illegible], in the service of Doctor [illegible], to whom I am indebted for the privilege of observing and operating upon this interesting patient.

The child had been [illegible] and a half months. The birth was normal and breast feeding was begun; but ever since birth the child vomited, sometimes immediately after feeding and always before a half hour had elapsed. He is said to have weighed eight pounds when he was born, but on admission to the hospital his weight was but four.



[illegible] Joseph L. [illegible] 4, 1914, forty days after the operation.

Except for the passage of meconium it was stated that the bowels had not moved since birth.

On examination, violent gastric peristalsis was easily seen. There was swelling of both mammary glands. There was a maculopapular eruption upon the buttocks and limbs. The child was fearfully emaciated. In spite of the most painstaking work it became evident that the child could not be nourished by stomach feeding.

I operated, January 5, 1914, with the patient in general anesthesia. Ether was used, then chloroform. Through a right paramedian incision between the fibres of the rectus, the hard, densely infiltrated pylorus was easily found and drawn from the abdomen. The tumor, about two and a half cm. long, was very sharply defined at the gastric and duodenal limits. The stomach was apparently normal, though very tense. A longitudinal incision was made just beyond the visible limits of the pyloric vein, so as to avoid unnecessary hemorrhage. This incision was carried down carefully to the mucous membrane of the pylorus and it was just a little longer than the indurated mass itself. With a little freeing by means of blunt pointed dissecting scissors, there was a sudden separation of the lips of the pyloric wound and the tense stomach immediately became flaccid. The relief was most striking. The gap through the indurated tissue was nearly one cm. in width at its central part. The stomach was dropped back into the abdomen and the wound was closed with interrupted chromicized catgut sutures passing through all the structures except the skin. A silk cutaneous suture completed the operation, which had consumed nine minutes. There was an immediate improvement in the patient's condition, although some vomiting continued for a number of days. The bowels began to move normally.



[illegible] pyloric wall; *b*, mucosa; *c*, duodenum; *d*, pyloric veins; *e*, stomach.

In three days the child was retransferred to Doctor Koplik's department, where, under good nursing and careful feeding, there was a gratifying convalescence. The accompanying figures with dates speak for themselves. The diagrammatic figure indicates the character of the operation.

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48 East Seventy-fourth Street.

TOXEMIAS IN THE GENESIS OF HYPERTHYROIDISM AND THEIR TREATMENT.*

By Charles E. de M. Sajous, M. D., LL. D.,
Philadelphia.

In a paper on the pathological relationships of exophthalmic goitre and simple goitre, based on the histological examination of morbid thyroid tissue obtained from the vast array of cases operated in by the Mayos and their assistants, Dr. Louis B. Wilson has emphasized the fact that "all early acute cases of Graves's disease of whatsoever degree of severity, show unmistakable evidence of increased secretion by the gland and of increased absorption from it." In other words—and my own clinical experience serves only to sustain this view—we should not, as some writers would have us do, depart from the idea that exophthalmic goitre, during its active stage, is due to excessive activity of the thyroid gland. Again, Wilson also states, "in considering the relationships of the pathology of exophthalmic and simple goitre, we are apt to be blinded by our old teachings that the two are always distinct entities." Limiting ourselves strictly to the domain of pathology, we should first of all be penetrated with the fact that goitre and exophthalmic goitre are but the expressions of a single fundamental morbid process, viz., exaggerated functional activity of the thyroid gland.

In response to the kind invitation of your chairman to address you on the subject of hyperthyroidism, it has seemed to me that I might submit a phase of the genesis of goitre and exophthalmic goitre which, at least, might afford opportunity for fruitful thought. While it introduces what we might term the newer physiology of the thyroid gland, it enables us better to understand the pathogenesis of the morbid process itself, and thus increases our opportunities for rational prophylaxis and treatment. Unfortunately, I will have to refer to some of my own labors. Still, I will be as brief as possible, leaving to others all final estimates as to the actual value of the work done in the development of the question.

Fourteen years ago when I took up the study of the thyroid gland, this organ was thought by some authors, in addition to its action on general metabolism, to destroy toxic products of metabol-

*Read by invitation before the Philadelphia County Medical Society, January 14, 1914.

ism, either brought to it by the blood or in the blood itself; but the evidence was so conflicting and speculative that it failed to gain support. My own researches showed, however, that any function of the kind could be carried out only in conjunction with the adrenals—a fact since proved true by others. I urged, moreover, that it was as a participant in the processes of immunity, and specifically as a sensitizing substance similar to Wright's opsonin, that the thyroid secretion, including that of the parathyroids to which I attach major importance in the process, took part in the antitoxic and bactericidal functions of the body at large. This view also has been sustained. Thus among others, Léopold-Lévi and H. de Rothschild, of Paris, state in the second volume of their *Physiopathology of the Thyroid Gland:* "Sajous has attributed, among the functions of the thyroid body, a role to the latter which he assimilates to that of opsonins and autoantitoxins. More recently Miss Fassin (of the Bacteriological Institute of Liége, Belgium), M. Stepanoff and M. Marbé (working in the Pasteur Institute, Paris) have confirmed on their side the influence of the thyroid on the blood's asset in alexins and opsonins." Additional confirmatory evidence, I might add, could be adduced.

Bearing directly upon the pathogenesis of goitre, however, is the summary of the question recently presented by Major Robert McCarrison, of the Indian Medical Service (*Lancet*, February 8, 1913), who has done much to elucidate our knowledge of the disease. Major McCarrison writes as follows:

> The fact that the antitoxic and bactericidal resources of the body are largely dependent on the functional perfection of the thyroparathyroid mechanism is, I believe, as clearly established as is the influence of this mechanism on metabolism. Sajous showed, in 1902, that the injection of various bacterial toxins into man and the lower animals excited, more or less actively, according to their virulence, the thyroid gland's functional activity, while Bayon's researches show that the injection of bacterial toxins into the gland may lead to the actual formation of goitre. Farrant also has lately induced marked thyroid hyperplasia by the injection of diphtheria toxin into guineapigs; he demonstrated that the hyperplasia so induced could be controlled and greatly mitigated by the administration of thyroid extract at the same time as the toxin. Fassin found that the germicidal power of the blood was diminished by thyroidectomy. Charrin, Vincent, and Jolly drew attention to the fact that animals deprived of their thyroid glands are rendered very susceptible to infectious diseases, to which they readily succumb. Hürthle observed that by ligaturing the bile ducts in dogs the thyroid secretion was increased; he attributed this change to the passage of certain constituents of the bile into the blood. . . . Turrô has found that the juice of swine's and sheep's thyroids dissolved almost entirely the comma, typhoid, and anthrax bacilli, as well as Bacillus coli communis and Streptococcus. Gley showed that the blood serum of thyroidectomized dogs is more toxic than normal serum and gives rise to convulsions when injected into animals, while de Luca and d'Angerio have found that the urine of these animals contains a higher percentage of toxic substances than is normal, and that thyroid extract administered to them counteracted this toxicity.
>
> While making every allowance for errors of observation, these and other findings of a like nature justify the belief that the thyroid gland contributes largely to the body's antitoxic and bactericidal resources.

While I would hesitate to accept as evidence of glandular antitoxic activity the goitre produced by injections of toxins, as practised by Bayon and Farrant, since the enlargement produced by them could also be due to the thyreodin-mediated fact remains that no one today could, in the face of the evidence on record, well justify a doubt that the thyroid apparatus—I mean thereby the thyroid and parathyroids—takes an active part in the autoprotective mechanism of the body. But it is not *in* the gland proper that its antitoxic or bactericidal functions are carried out; it is in the blood and tissues at large. From my viewpoint, any one of the *many* poisons, including toxins, that are capable of stimulating sufficiently the thyroid apparatus through excitation of the centre or centres governing it, is also capable of producing both goitre and exophthalmic goitre by awakening the process, which means abnormal work on the part of that apparatus to assist in destroying the pathogenic poison whatever that may be.

What is known of the etiology of goitre shows clearly that we should not seek a specific agent as a common cause. Among the many that have been incriminated have been waters containing calcium, magnesia, alumina, manganese, iron, copper, and other minerals, organic matter and organisms of various kinds. Indeed, so eminent an authority on goitre as Kocher states that "goitre-water differs from goitre-free water in containing many more microorganisms." Amebalike cells resembling the hematozoon of malaria, others communicated by various biting insects, or ingested with the food, have all been recorded as etiological factors. McCarrison's *contagium vivum* ingested with food may remain in the intestinal tract, "there producing," as he states, "poisonous substances which, on absorption, initiate the changes in the thyroid gland." Water and food polluted with feces have been found to cause goitre by Suzuki and by McCarrison. The influence of a flesh diet, i. e., an excess of nucleins, has been emphasized by Waters, Baumann, and others. Reid Hunt, and more recently Marine, observed that liver fed white mice and trout manifested goitre.

All this shows plainly that a great variety of poisons are capable of causing goitre, or, in other words, of evoking sufficiently violent and prolonged hyperthyroidism, to cause hyperplasia of the gland. Now, I would again call your attention to the fact that this coincides with the pathogenesis of exophthalmic goitre. We find among its causes: Infections, including tonsillitis, acute rheumatism, typhoid, tuberculosis, influenza, and syphilis; an excess of intermediate waste products such as those of autointoxication (W. H. Thomson); menopause, physiological or postoperative; pregnancy and parturition. Indeed, were we to trace back to their original source many cases of the disease, we would probably find that all toxic substances capable of causing goitre can also provoke exophthalmic goitre. This would account for the relative frequency of the latter disease in goitrous districts where water-borne toxic substances—organic or inorganic—are known to be the pathogenic agents.

All this fully coincides with the recently published conclusion of Wilson (*Journal A. M. A.*, December 13, 1913), based on the histology of 1,703 thyroids derived from as many cases of goitre and exophthalmic goitre, in the Mayo clinics, that the relationship of goitre, that is to say primary

hyperplasia and hypertrophy of the parenchyma of the gland, to true exophthalmic goitre, is as direct and as constant as is primary inflammation of the kidney to the symptoms of Bright's disease. But, I would urge that the fog which has surrounded the pathogenesis of both diseases will be dispelled when a more or less violent defensive reaction of the thyroparathyroid apparatus is made the foundation of all cases in which a toxemia, endogenous or exogenous, can be elicited through careful analysis. I specify "a toxemia" because exophthalmic goitre may also, as is well known, be due to violent emotions, shock, etc.

Turning to treatment, we should find the same parallelism between goitre and exophthalmic goitre that was shown to exist between the etiology and pathology of these disorders. But, as we shall see, this obtains up to a certain limit only—a limit which in truth establishes a line of demarcation between the two diseases.

Beginning with measures that are capable of opposing intoxication in *goitre,* we know that when a patient is removed sufficiently early from a goitrous district, or supplied with water from a nongoitrous district, recovery is apt to occur. Intestinal antiseptics will also prove effective where a pathogenic organism in the alimentary canal is the cause of the struma. McCarrison, for example, found thymol, in ten grain doses three times a day, either curative or highly beneficial in sixty-eight out of the eighty-two cases the final result of which he was able to trace. Practically all were of less than one year's standing; all were of the parenchymatous type, some showing marked pulsation and engorgement of the cervical vessels. All were ascribed to a *contagium vivum* existing in the valleys near Gilgit, India. Now, literature contains here and there reports of cases which have been cured by the salicylates, betanaphthol or sodium phosphate—all tending to promote intestinal antisepsis. In these cases, the autointoxication of intestinal origin was inhibited, and the thyroid apparatus, no longer stimulated inordinately, gradually resumed its normal size.

Exophthalmic goitre shows a corresponding list of measures calculated to oppose autointoxication. Kocher found sodium phosphate effective, a result he ascribes to its action on the intestines. Epstein, in fact, had shown that coprostasis was a frequent accompaniment of the disease. W. H. Thomson banishes all meats, and administers intestinal antiseptics. In addition to washing out the colon frequently or giving purgatives, Solomon Solis-Cohen administers the salicylic compounds, betanaphthol, benzonaphthol, hexamethylenamine or guaiacol carbonate. Menthol was found very beneficial. These and other intestinal antiseptics have been used by various authors. Here again, the source of intoxication is controlled and the thyroid apparatus as a defensive mechanism is stimulated to a correspondingly less degree.

What measures intended to counteract the toxemia in the blood itself have been employed have also produced their effects by reducing the need of defensive activity on the part of the organism. Thus in *exophthalmic goitre,* the absolute rest which proves so beneficial, acts by reducing to a minimum the production of tissue wastes. Rogers and Beebe's serum, antithyroidin, thyroidectin, and similar agents are, in their effects, antitoxins. The neutral hydrobromide of quinine was also believed by Forchheimer to oppose the toxemia, the ergotin given with it serving, in addition, to constrict the arterioles and thus to limit the volume of arterial blood admitted into the gland. In pure *goitre,* but only in its early stages, iodine, which is the active agent in the defensive secretion of the thyroid, and desiccated thyroid, itself a direct addition to the antitoxic resources of the blood beside supplying the thyroid with its pabulum—though not as efficient as the iodides—have also proved effectual.

Important in connection with this, however, is the fact that while iodine, the iodides, and thyroid gland prove curative in appropriate cases of goitre, they are harmful in cases of true exophthalmic goitre. There is doubtless some feature which causes the diseased glands to react differently in the two disorders. What is this feature? The solution of this problem seems to be one which has not so far been thought of. It is submitted, therefore, only as a working theory.

Not all thyroid glands (including their parathyroids) are functionally equal. A perfectly normal gland is able to fulfill its protective function in any kind of infection or intoxication without undergoing perceptible enlargement. But we know that morbid hereditary influences weaken this organ as they do all others; we know also that various infantile diseases, diphtheria, for instance, tend to produce focal hemorrhages in the thyroid and parathyroids and to inhibit, seriously sometimes, their functional efficiency. Now let one of the various causes of goitre, the many forms of intoxication, infections, etc., that I have enumerated, occur in an individual possessed of such a debilitated gland, the organ reacts, but insufficiently so to meet the needs of the moment. It is spurred on through the action of the poison on its centres, its vessels are dilated, and its glandular elements are activated to their utmost. Yet it is still unable to meet the issue; it swells as a result of the extraordinary congestion to which it is subjected and goitre is initiated. Now, iodine, the iodides, or desiccated thyroid, given to counteract the toxemia while measures calculated to remove the cause are being instituted, soon arrest this violent pathogenic stimulation, and the goitre recedes. It is so true that we are dealing primarily with deficient glands in these goitrous subjects, that many cases show distinct evidence of hypothyroidism while the organ is violently, though insufficiently, active. It is because of this that the pathologist sees nothing but evidences of excessive secretory activity and hyperplasia.

In exophthalmic goitre, on the other hand, we are not dealing with a debilitated gland, but with one capable of reacting with undue violence, probably as a result of hypersensitive centres, rendered so by shock, violent emotions, or inherent in the individual. An intoxication here starts the gland on a rampage, as it were; it secretes in marked excess, which sooner or later brings on the symptoms peculiar to the disease. It is only a thyrotoxicosis in the sense that the organism is poisoned by this excess of secretion; indeed, Kocher (*Deutsche*

Gesellschaft für Chirurgie, XI, 1911), in 537 cases of exophthalmic goitre operated in, always found histological changes in the gland denoting hypersecretion with increase of iodine content. Now, if we add more iodine or thyroid to the blood under these conditions, we obtain only what is invariably observed—an aggravation of symptoms. But remove the cause and arrest the toxemia, and improvement begins, because the hypersensitive centre is no longer irritated.

Yet why should a goitre lapse into an exophthalmic goitre under these conditions? Compensative effort doubtless causes a gland on the threshold of normal activity easily to overstep the mark. Again, centres that are stimulated during a prolonged period become hypersensitive, thus introducing the predominating factor of Graves's disease.

Summarizing all these facts, I would urge: 1. That much light would be thrown on the pathogenesis of goitre and exophthalmic goitre if the antitoxic and bactericidal functions of the thyroparathyroid apparatus were taken into account; 2, that the best results are attained in the treatment of these two disorders when a toxemia due to any one or more of many endogenous or exogenous factors is regarded as the cause of goitre and also of exophthalmic goitre when this condition is not due to violent emotions, shock, and kindred agencies; 3, that inasmuch as any case of goitre may become one of exophthalmic goitre, the appearance of any enlargement of the thyroid not ascribable to an ephemeral cause, pregnancy, an acute febrile process, etc., should at once be placed under a treatment having for its purpose the elimination of the toxemia and its cause.

As to the relations of the question to pathology, I would submit, 4, that while a goitre is the result of exaggerated functional activity of a *defective* gland, an exophthalmic goitre is the result of exaggerated activity of a functionally *normal* gland which, as such, is able to produce an excess of secretion sufficient to cause thyrotoxicosis.

TREATMENT.

The treatment of hyperthyroidism, with or without exophthalmos, in the light of the foregoing facts, can be brought within the field of rational therapeutics. One of two pathogenic factors prevails in practically every case; 1, a toxemia of some sort, and, 2, a neurosis. Both, by producing central excitation, cause exaggerated functional activity of the thyroid gland.

In the *toxemic series* the majority of the cases are traceable to coprostasis, or to some other form of intestinal autointoxication, the remaining cases being traceable to some infection, especially tonsillitis, rheumatism, typhoid, influenza, tuberculosis, and syphilis. Pregnancy and parturition are not infrequent causes, owing mainly to the increase of toxic wastes formed. When coprostasis prevails, daily doses of sodium phosphate, or olive oil injections on retiring, six ounces being retained till morning, or large solution enemas, are of great aid. Pancreatic atony is frequently present; here dilute hydrochloric acid is necessary to excite the duodenal cells and, secondarily, the pancreas. This may be aided by giving, two hours later, pancreatin. In some cases, direct antiseptics are necessary: thymol, menthol, or sodium salicylate; if these are not well borne, buttermilk, kumyss, i. e., some preparation containing lactic acid germs or their products, to inhibit putrefactive bacteria, may be used. Important in connection with this is the avoidance of meats. Some cases require a milk diet at least a short time to rid the system at large of accumulated toxic substances, thus checking promptly the cause of the excessive functional activity of the thyroid apparatus.

In all forms of intoxication, whether of intestinal or infectious origin, one of the best antitoxic agents is the neutral hydrobromide of quinine, recommended by Forchheimer; five grains thrice daily. Beebe's serum and the various antithyroid serums also act as antitoxics. Absolute rest is imperative to restrain as much as possible the formation of wastes.

A feature which requires attention in all cases is the vascular dilatation, through which the thyroid is allowed to receive an excess of arterial blood and thus caused to secrete abnormally. This requires powerful constrictors such as ergotin or pituitary gland, supplemented by cold applications over the gland, whether goitrous or not. Galvanism and faradism produce their good effects by exciting the muscles of the glandular arteries.

In the *neurotic series*, first identified by Charcot, central erethism (the word "instability" usually employed I deem misleading) is also produced, with overactivity of the gland as result. Fright, shock, sorrow, etc., produce it emotionally; uterine, ovarian, nasal, ocular, etc., disorders produce it reflexly. Here treatment of any organic disorder that may be present, the bromides or valerian to reduce the undue sensitiveness of the centres, and the vasoconstrictors enumerated above, including the neutral hydrobromide of quinine with ergotin, to control the glandular hyperemia, are very efficient. The secretion of the gland itself may be inhibited as shown by Mabille, Ewald, and others, by means of arsenic, preferably in Fowler's solution. Rest and a meat free diet are as useful in these as in the toxemic cases, to reduce to a minimum the antitoxic functions of the thyroid apparatus.

On the whole, it is apparent that the intimate relationship between the thyroid and the autoprotective processes of the body should no longer be ignored.

2043 WALNUT STREET.

A SIXTEENTH CENTURY PARANOIAC.*

His Story and His Autobiography.

BY GEORGE E. PRICE, M. D.,
Philadelphia,

Gabriele D'Annunzio, the Italian dramatist, when asked recently to name his three favorite books, replied: "*The Odyssey*, which is the book of my race and instinct; *The Divine Comedy*, which is the book of my nature and discipline; *The Autobiog-*

*President's address, read January 23, 1914, before the Philadelphia Neurological Society.

raphy of Benvenuto Cellini, which is the book of my freedom and pleasure."

Cellini's life was written when the autobiographer was fifty-eight years of age, and interesting as the book may be to the lover of art, the student of literature, or the average reader, it possesses an added fascination for the alienist who sees in it a delightfully frank record of the work and play of a man mentally abnormal, who reviews his life with all the egotism and exaggeration of the paranoid mind and colors it with delusive beliefs characteristic of his disease. In the following brief sketch of Cellini's life, the quotations, unless otherwise indicated, are taken from Symond's excellent translation of the autobiography.

Cellini's parents were citizens of Florence, his father being both talented and versatile, as he was architect and engineer, a maker of musical instruments, and an excellent musician. To his mother, Cellini attributes the possession of remarkable beauty. Our autobiographer, the second of five children, was born on the night of All Saints' Day in the year 1500, and received the name of Benvenuto (welcome) as an evidence of his father's pleasure in the possession of a son.

It was his father's ambition that Benvenuto should become a great musician, but at the age of fifteen years, against his father's will, he apprenticed himself to the goldsmith's trade and soon after was forced to leave Florence because of an assault upon some men who had attacked his younger brother, and spent the period of his exile in Siena. Later he visited Bologna and Pisa. That young Cellini did not take kindly to the flute practice enforced upon him by his father may be inferred from two references to "that accursed music" and the statement, "I felt as though of a truth I were in Paradise the whole year I stayed in Pisa, where I never played the flute."

When eighteen years old, Benvenuto returned to Florence, but left home again a year later to visit Rome, because of a quarrel with his father over the flute playing. All this time he was advancing in the practice of his profession, and after working and studying under various masters for two years, he again returned to Florence only to engage in another brawl, in consequence of which he was obliged to escape to Rome in the disguise of a monk.

This incident in Cellini's early life can hardly be passed over without special mention, as indicating even when he was comparatively a youth, his fiery temper, impetuosity, physical courage, and restlessness at restraint or rebuke. He had been summoned before the magistrates because of a quarrel, and after being reprimanded, fined, and held pending bail he escaped from the unwatchful officers, secured a dagger, rushed to the house of his recent adversary and attempted to stab him while at the table in the midst of his relatives and friends. Thinking himself successful in his homicidal attempt, Cellini ran down the stairs only to find himself confronted by more than twelve persons, members of the enemy's household, armed with cudgels, hammers, one with an iron shovel, another with an iron pipe, and still another with an anvil. Cellini's account of what occurred is as follows: "When I got among them, raging like a mad bull, I flung four or five to the earth and fell down with them myself, continually aiming my dagger now at one and now at another. Those who remained upright, plied both hands with all their force, giving it to me with hammers, cudgels, and anvil; but inasmuch as God does sometimes mercifully intervene, He so ordained that neither they nor I did any harm to one another."

In Rome, he engaged in his old occupation, making a vase for the Bishop of Salamanca, which he tells us (with becoming modesty) was "as beautiful as one could hope to see." He also, among other commissions, did some work for a certain surgeon of renown, whose specialty seems to have been the French disease, which Cellini informs us was an illness very partial to the priests, especially to the richest of them.

Events now followed in rapid and bewildering succession; he had innumerable love adventures, contracted the plague, was attacked by bandits, fought duels, engaged in warfare, had the quartan fever, did much work in gold and silver, and finally deserted his friends to take service under Pope Clement in Rome, the latter having declared war against Florence.

That Cellini did not lightly value his prowess as an artilleryman, may be gathered from the following passages: "Let it suffice that it was I who saved the castle that morning," etc. "And if I were to relate in detail all the splendid things I did in that infernal work of cruelty, I should make the world stand by and wonder," "By that one blast, I slaughtered more than thirty men."

In the service of Pope Clement, he incurred the envy and jealousy of his fellow workmen by his wonderful achievement and success, producing among other things a piece of gold work, which he tells us, was "held to be the first masterpiece which had ever been seen in Rome." He assassinated a guardsman, escaped from the inundation which flooded Rome in 1530, contracted the French disease, fell desperately in love with a beautiful Sicilian girl, wounded a notary in a quarrel, and killed his enemy Pompeo in the midst of the latter's friends, but escaped punishment through the protection of his patron. In consequence of this incident, however, the autobiography was like not to have been written, as the friends of Pompeo twice attempted to assassinate Cellini, who escaped, once through his own courage, and once by means of flight.

Feeling that he was being persecuted in Rome, Cellini left for France in 1537, only remaining a short time, however, because of ill health and the fact that "the French and their Court were both grown irksome." His lack of fortune in Paris he blamed on the jealousy and plotting against him of one of his former friends.

In Rome once more he received many commissions, but being accused by a fellow workman of sequestering certain jewels belonging to the church, he was sent to prison by order of Pope Paul III. Cellini made a daring escape, but in so doing, fell and broke a leg, being found by a servant of Cardinal Cornaro and protected for a time by the latter, only to be again imprisoned. It is of this

second incarceration that many interesting things are recorded. About to commit suicide, he was seized by an invisible power and flung four cubits from the spot. Later, the invisible being who prevented Cellini's attempt at self destruction manifested himself, still invisible, but now speaking in a clear voice. Again the "being" becomes manifest, this time in the form of a young man with a face of indescribable beauty. Next Christ appears, not in a dream, Cellini takes pains to inform us, but while he is awake; then the Madonna and Child with two angels and a figure robed like a priest. All these he beheld "actual, clear and vivid," remaining before him little more than "half a quarter of an hour." Following these carefully recorded hallucinations is an account of the delusion, beautifully systematized, that his enemies conspired to kill him by placing powdered diamond in his food. Cellini discovered some glittering splinters which he believed to be diamond, but finding that he could crumble them against the prison bars with his knife, he evolved the idea that his arch enemy had sent a diamond to be crushed, but that an associate in the conspiracy substituted a harmless beryl, thinking it would have the same effect, and keeping for himself the more valuable stone. All of this is presented as an assured fact, without a shred of actual evidence beyond the finding of harmless crystals in his food.

It was also while he was in prison that Cellini had a dream in which he felt that "words of the greatest consequence" were written upon his forehead, and upon awakening, he realized that his forehead had been meddled with. He further tells us that ever since his great vision in the prison and up to the time of the writing of the autobiography, an aureole of glory had rested upon his head.

Finally, released from prison through the intercession of Cardinal Ferrara, Cellini remained in Italy for a time, then at the age of forty years visited France and entered the service of King Francis.

This marked a new era in Cellini's life; from being ill and depressed, he became expansive, busying himself with much work and manifesting such physical and mental endurance as to wear out his assistants, who were unable to keep pace with him. It is during these years in France that some of his best work was done. He rose high in the favor of King Francis, but ignoring the role that women play in the world's affairs, failed to ingratiate himself with the king's mistress, thereby subjecting himself to much humiliation.

Being angered at not having been consulted with reference to proposed decorations, Madame used her influence with King Francis to exploit a rival sculptor, one Primaticcio, or Bologna, so called from his being a native of that city, to whom the king transferred commissions formerly held by Cellini. The latter met this complication with his usual promptness and thoroughness. He visited his rival and threatened to kill him like a dog should he continue to interfere in his affairs, and as Bologna soon suggested to the king that he be sent to Rome to make copies of certain antiques, we may infer that Cellini's method of argument carried some weight.

It is interesting to note that Cellini at this point in his autobiography digresses long enough to pay tribute to one of our profession, Messer Guido Guidi, a nobleman of Florence and physician to the king, whom he describes as the most cultivated, the most affectionate, and the most companionable man of worth he ever knew in this world.

While at the court of King Francis, Cellini became involved in a law suit, and finding that the court's decisions were going against him, he sought out one of the plaintiffs and wounded him in the arms and legs so as to deprive him of the power to move about, but without endangering his life. The second plaintiff he also served in such a manner that he withdrew the suit, upon which our autobiographer returned thanks to God "for this and every other dispensation." Again summoned to court (this represents what we may term Cellini's litigious period), he was pondering over his numerous difficulties, when he heard a voice which cried loudly: "Benvenuto, do as thou art wont, and fear not." Thus encouraged by what he believed to be a manifestation of Divine favor, he, with ten of his followers, all armed, attended and literally dominated and browbeat the court.

Much of the latter part of the autobiography is devoted to a detailed account of the author's work, with its accompanying successes and discouragements. In 1545, Cellini returned to Florence and entered the service of Cosimo de Medici, Grand Duke of Tuscany, for whom, among other commissions, he engaged to make a bronze statue of Perseus, succeeding after many years and after surmounting innumerable difficulties. He suspected, at one time, two of his enemies of having caked the metal for his statue, and complained repeatedly of being hampered by the jealousy and envy of Bandinello, a fellow sculptor, whom he selected as his chief persecutor. Not having profited by his experiences with Madame d'Estampes, Cellini incurred the animosity of the Duchess of Cosimo, which added greatly to his difficulties and discomfort. The statue of Perseus was completed in 1554 and represents what is probably the greatest of Cellini's achievements.

Toward the end of the autobiography, Cellini describes what he believed was an attempt to take his life by the use of sublimate. He had stopped at Viccho, while on a visit to his country house in the village of Trespiano, northeast of Florence. After leaving, he was seized with a bowel complaint and at once recalls how the wife of his host had urged him repeatedly to partake heartily of the food, and that the dishes from which he had eaten were different from the others, being of finer quality. To furnish the motive, he recalled that Sbietta, his host, had sold him the farm for his (Cellini's) life time. Moreover, he placed a special significance upon the remarks of the people he met during the journey, and observes that all the inhabitants had fixed their eyes upon him, as on something strange.

The autobiography records no event after 1562, although not completed until four years later. In 1565, Cellini took unto himself a wife, by whom he had two legitimate children. His stormy and eventful life was finally brought to a close by an attack of pleurisy on February 13, 1570.

Cellini lived in stirring times, and upon the world's stage played many, and by no means inconspicuous parts. Europe was emerging from the darkness of the Middle Ages, and Italy, especially Florence, led in the new movement. But whether we find Cellini a participant in the horrors of war, in the devastating epidemic of the plague, the inundation of Rome, among the brilliant court of King Francis, or in the midst of the intrigues of his patrons, he gives us no account of events except as they affected him; his interest is in nothing but himself and his work.

That the insane may produce works of great artistic value, is well known, this being especially true of hypomania and paranoia. According to Hollander, the art of the insane is confined chiefly to pictorial and literary expressions, creative music being rare. Cellini seems to have been a victim of hallucinatory paranoia. He was delusional, and his delusions were systematized. Hallucinations occurred apparently when he was laboring under great excitement, but it is not so much the recording of the hallucinations, but the way the autobiographer calmly accepts them as a matter of course and weaves them into his delusions, that characterizes the paranoid mind.

Cellini was unquestionably a genius, although not an artist of the first rank. That his work is highly valued we may judge from the fact that his famous Rospigliosi cup, bequeathed by Benjamin Altman to the Metropolitan Museum, was purchased by Altman from Charles Wertheimer for the sum of £50,000. Cellini possessed originality, insight, and remarkable technical ability, and his energy and capacity for work were abnormal. Beautiful as was his work, however, it lacked that indefinable something, which for the want of a better term we call "soul," and his chief claim to greatness lies in his writing rather than his art. His autobiography, which is said by Horace Walpole to be more amusing than any novel, and which was translated into German by Goethe, is unstilted in language and, one may truthfully say, unexpurgated. The style is natural and delightful and the characters are depicted so vividly that one seems almost to know them. His wit is keen, his humor spontaneous, and his writing not unmixed with philosophy.

Beside the *Autobiography,* Cellini wrote a treatise upon the goldsmith's art and one upon sculpture. He wrote somewhat upon architecture, was the author of an article defending sculpture against painting, and contributed some very indifferent poetry. There is no record, however, of Cellini having attempted any musical composition.

Among existing examples of Cellini's work are the bronze Perseus and a bronze bust of Duke Cosimo at Florence, the gold salt cellar at Vienna, the medallions of Clement VII and Alessandro de Medici, the Nymph of Fontainebleau at the Louvre, a marble crucifix, and the cup in the Metropolitan Museum.

When in these days we see the relatives, friends, and intimates of paranoiacs not only firm believers in their sanity, but often accepting and defending their delusions, it is not surprising that, although long considered a paranoiac by alienists, Cellini's critics and translators should seek to explain the unusual in his narrative. His halo becomes "a mere piece of audacious mendacity meant to glorify himself" or is ascribed to natural physical causes. His hallucinations are the wanderings of a delirium and his delusions are accepted as realities.

Séglas summarizes the paranoid anomalies of character as arrogance and mistrust, and surely no one ever more fully illustrated these traits than Benvenuto Cellini. His egotism was colossal, and although a just and accurate critic of the work of others, he grossly overestimated the value of his own handicraft. His faith in his infallibility was unbounded—never was he in the wrong and in every quarrel always was the aggrieved party. As Reilly says, "in him conscience was seldom awakened—if he ever felt remorse, he has carefully concealed its memory." When he brutally beat, kicked, and dragged about by the hair of her head his model, Catarina, his only expression of regret was the fear that he may have rendered unfit for copying, her beautiful arms and legs.

He believed that he was constantly the object of envy, jealousy, and persecution because of his greatness, although an intimate of such artists as Michael Angelo and Titian. He considered himself above the law and indeed took the law into his own hands. As Symonds writes: "He makes himself accuser, judge, and executioner and is quite satisfied with the goodness of his cause, the justice of his sentence, and the equity of his administration."

Cellini was a Catholic in religion, but relied upon himself until a situation became intolerable, then looked to his God to extricate him. What he considered as Divine manifestations in his favor, he accepted as evidence of the Divine approval of his acts. While in prison for the second time, he turned toward things religious. "Meditating upon God and on our human frailty," he read his Bible, compared himself to the saints and martyrs, sang hymns, prayed, and composed verses. Upon being released, he immediately returned to his old life, which reminds us that "when the devil was ill, the devil a monk would be; when the devil was well, the devil a monk was he."

As to Cellini's amours, the least said the better. Symonds tactfully disposes of the subject by saying that they "were numerous, but volatile and indiscriminate." Cellini, however, had his good qualities. He was ever ready to espouse the cause of relatives or friends, even to the extent of incurring physical danger. During his earlier years, he repeatedly sent money home to his father and later took upon himself the care of his sister and her fatherless children. Passionately devoted to his art, he was, as already mentioned, fair in the estimate of the work of his rivals and had sincere admiration for Michael Angelo, to whom he refers as "that divinest painter." He also speaks of "that great master, Raffaello."

If he had no conscience, at least he had no fear, and surely there could be no more striking picture of indomitable will and dauntless courage than Cellini presented when, bruised and bleeding, and with his leg broken, he crawled under the city gate and

through the streets of Rome after his escape from prison.

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1830 SOUTH RITTENHOUSE SQUARE.

PLASTIC OPERATION FOR THE RESTORATION OF SEVERED VOCAL CORDS; PERMANENT THYROID FISTULA FOLLOWING ATTEMPTED SUICIDE WITH A RAZOR.*

BY HARMON SMITH, M. D.,
New York.

CASE. Mr. X. came to the Manhattan Eye, Ear, and Throat Hospital in June, 1913, with the following history. In November, 1912, during a fit of depression, he had attempted suicide by cutting his throat with a razor. The razor was held in the right hand and the slash made from left to right, across the larynx, severing in its course the left wing of the thyroid cartilage, the left recurrent laryngeal nerve, also the outer third of the right wing of the thyroid cartilage. The cut on the left side was much the deeper, and the cartilage was severed from above downward, cutting away the anterior attachment of the left true and false cords. The wound had healed, but had left an abundance of scar tissue, and a permanent opening in the thyroid cartilage. The severed anterior third of the true and false cords had never become reattached. The voice was unintelligible, being of a very low whispering sibilant character. The examination of the larynx by means of the laryngeal mirror disclosed paralysis of the left arytenoid, and the extremities of the two cords could be seen flapping in the effort of vocalization.

As the patient seemed to feel keenly his loss of voice and appeared to be merging into another fit of despondency, I deemed it advisable to make an effort toward the restoration of the vocal apparatus by a plastic operation, little expecting any other than a psychological result. Seven months after the injury a plastic operation was performed under general anesthesia. I first performed a preliminary tracheotomy so that anesthetization would not interfere with the plastic work necessary within the laryngeal box. The usual incision for thyrotomy was made, and the thyroid cartilage divided in the median line and laid wide open so that free access could be obtained to the inside of the left side of the thyroid cartilage. The ends of the true and false cords were then freshened and stitched into place, the remains of the perichondrium over the interior of the thyroid cartilage being utilized for their anterior attachment. The two wings of the thyroid were then brought into close apposition, the cicatricial tissue surrounding the permanent fistula removed, and the soft tissues brought together by sutures over the cartilages. No sutures were taken in the cartilage itself. The tracheotomy tube was left in place for two weeks to avoid strain upon the vocal apparatus, rather than to insure against edema, which was not evident at any time during convalescence. After removing the tracheotomy tube, two sutures were taken in the wound and a tight compress was applied with a bandage. Recovery from the operation was uneventful. The patient has continued to return to the clinic for observation, at which times an occasional electrical stimulation of the larynx has been given. In the past few months there has been perceptible motion in the left side of the larynx; the cords are more closely approximated during phonation. The voice has now become hoarse and guttural in character, but shows a marked improvement over the original condition. The movement of the arytenoid and cord would tend to demonstrate that there has been some restoration of the nerve fibres to that part of the larynx, irrespective of the fact that the recurrent laryngeal was severed in the traumatic act. Whether the condition will continue to improve until ultimately the voice is entirely restored, is problematical, but even with what has already been obtained the patient has been elevated from a condition of extreme depression to one of delightful optimism.

44 WEST FORTY-NINTH STREET.

*Patient presented with history to the Section in Laryngology, New York Academy of Medicine, January 28, 1914.

THE "WHY" OF OBESITY.*

BY F. MCKELVEY BELL, M. D.,
Ottawa, Canada,
Attending Surgeon, St. Luke's Hospital.

It is not without a feeling of trepidation that I enter upon a discussion of what is essentially a medical topic, and yet, as the ideas I am about to express are based partly upon surgical data, I feel that I may make this my *apologia*. Fat, the barometer of infancy and the *bête noire* of middle age, has for so many centuries been the unsolved puzzle of the physician that a consideration of its origin would carry us back to prehistoric days. Over it, too, Hippocrates and Celsus scratched their learned heads in vain perplexity and searched the herbal cellars of antiquity.

There is indeed more than a modicum of truth in the unwelcome accusations of more modern writers that this symptom of some metabolic disorder found in the gouty and irascible heavyweight, is due to gluttony and bibulous indiscretions. I believe they might have gone a step further and included one other form of intemperance—but of that more later. We of the present day have advanced a trifle in regard to diagnosis and treatment, for we recognize at least two distinct varieties of obesity, the plethoric and anemic, with their several modifications. Some writers include the obesity of myxedema, but this can hardly be termed a true variety.

Bound by the chain of tradition, occasionally forging a new link, we are still marching round and round the same treadmill. We admit the well recognized predisposing causes. Why not? We must, like Mark Antony, admit something in order to get a sympathetic hearing. There are heredity and age—infancy and mid age. Obesity is of more common occurrence in the female, in those of sedentary habits, and in those of southern climes. We are reasonably certain, too, that the obesity of anemia is due to a low percentage of hemoglobin; that is, de-

*Read before the Ottawa Medical Society, February 5, 1914.

ficient oxidizing power in the blood. But is there not another form of obesity more widespread and more obstinate than any of these?

Here is our patient. A fat, ruddy, apparently otherwise healthy man of middle age enters our office. He beseeches us to stem the tide of corpulency which threatens to overwhelm him. In spite of exercise, massage, Turkish baths, sea bathing, great moderation in eating and drinking; in spite of salines enough to salt forever the limpid waters of the White Loon Lake, he has been thrust steadily, insidiously, resistlessly onward toward the Dead Sea of fat and inefficiency. *Why?*

What underlying cause, intangible, inexplicable, but ever active, is at work? Why should heredity, why age, young or middle, be a cause? Why should Southerners, or any race for that matter, be fat—inordinately, distressingly fat? Why, too, should men and women who by natural instinct and necessity are active, choose a sedentary or frankly lazy life? What stirring or activating element is missing or depleted from the system. On this we do not speculate—it is not polite!

We have been taught that adiposity is, as a rule, dependent upon three factors which we call exciting causes: 1. Deficient oxidation; i. e., a low fire in the furnace of life; 2, deficient elimination; i. e., some blockage in the human ashgrate; 3, excess of food (including alcohol), i. e., too much fuel. But, when we reduce the quantity of fuel ingested and empty the ashgrate, why will not the excess stored in the system burn? Or, to alter the form of the question, what element in the human system prepares the overplus of fat for resorption? Can we adduce any circumstantial evidence to assist us in our dilemma?

Let us glance for a moment at the types of individuals, other than gourmands and those of Bacchanalian habits, who acquire an excess of adipose tissue. Granting that every rule has its exceptions, let us consider the following phenomena:

1. Babies are generally fat.

2. Youths and unmarried girls are usually moderately lean.

3. Men and women generally increase in weight after marriage, even before middle age.

4. Women between thirty and forty and men between forty and fifty years show a tendency toward *embonpoint*, if not actual obesity. The menopause, in other words, is coincident with increased weight, but the climacteric in men is at least ten years later than in women. The leanness of old age, however, we must attribute to catabolic changes—a retrograde metabolism.

5. In three cases where I have been obliged to remove one testicle for tuberculous epididymitis the patients gained from fifteen to thirty pounds in weight. This coincides with the experiments of others, also of Cecca and Zappi, who found that castrated rabbits gained in weight and in dimensions of the thyroid and suprarenals.

6. Eunuchs are almost invariably obese and pot bellied.

7. Women with cystic or atrophic ovaries are often fat; and after double oophorectomy obesity with dyspepsia is common. I would call special attention to this extraordinary combination, dyspepsia and obesity, as a proof that fat is not dependent so much upon good assimilation as upon faulty oxidation. As a further proof, these patients show less carbon dioxide in the expired air and less phosphates in the urine than before operation. I have recently been able to trace six double ovariotomies in my own experience. One patient, in spite of a very irregular life, has retained her original weight, and the other five have gained from twenty to sixty pounds.

8. During pregnancy, when there is no ovulation and the ovaries are quiescent, the subcutaneous fat accumulates to such extent that the body weight increases one thirteenth (Gasener).

9. Female keepers of brothels and the older prostitutes, who it is not uncharitable to suppose have been guilty of excessive venery, are almost always very fat. Nero, Henry VIII, and Napoleon are historical examples of obesity due to sexual intemperance.

10. In the southern, or more passionate, races such as Italians, Orientals, and Ethiopians, obesity is common.

11. In exceedingly obese individuals sexual desire is generally lowered and, according to Anders, azoospermia is common.

To summarize: It is apparent that any disease, surgical operation, or natural decay which destroys the ovary or testicle, disturbs the normal balance between fat and lean. In addition, any excessive loss of ovarian or testicular secretion tends in a lesser degree to the same end. It follows as a natural inference that some secretion from these glands increases oxidation, stimulates cellular function, and thus has a powerful influence in preserving the normal body weight.

In fact, without being too iconoclastic, may we not go a step farther? When we remember that azoospermia occurs commonly in the very obese, and that in pregnant women, who for the time being are deprived of the advantages of ovulation, the subcutaneous fat increases so markedly; it is not unreasonable to suppose that the normal body weight is not preserved so much by the glands proper as by their products, viz., the corpora lutea and the seminal fluid. According to W. E. Dixon (*Lancet*, July 7, 1900) the composition of orchitic extract of all animals is practically identical, (a) a toxic nucleoalbumin which causes cardiac inhibition, and (b) the part important for our purpose, spermin, found in the semen, which causes congestion of the abdominal viscera, ovaries, and testicles.

I would suggest for the form of obesity with which we are dealing the name, asexual obesity; and for the reasons already given.

TREATMENT.

The treatment of asexual obesity may be outlined as follows:

Prophylactic. Conservation of ovaries and testicles wherever possible. Fewer double ovariotomies and more conservative operations when dealing with these important structures. Restriction of sexual intercourse within certain limits.

Dietetic. No special dietary, but moderation in eating and drinking and not more than three meals daily.

Hygienic. All the usual outdoor sports and exercises, including swimming and sea bathing. Walking is not energetic enough, when used alone, but is a good adjuvant. In fact, we should take advantage of every aid to oxidation and elimination—even saline catharsis where indicated. Sexual intercourse must be interdicted or greatly restricted. I would lay especial emphasis upon this point, for the reason that if our patient does not conserve his natural stimulant, he will be unable to enjoy active exercise and will not profit by it when taken.

Medicinal. As our greatest aids to oxidation are evidently the products of the ovaries and testicles, we must assist nature by feeding the patient extracts or the substance of these glands. Until more scientific preparations are available, male patients may be given forty-five grains of orchic extract daily, fifteen grains before each meal. Larger doses sometimes cause nausea or vomiting. In addition to this, every second day one c. c. of some suitable testicular extract should be given hypodermically.[1] For female patients, ovarian extract may be used in five grain doses thrice daily, and the hypodermic extract already mentioned, every second day. There are many other preparations of these glands on the market and possibly they are just as good, or as poor, for our purpose as those I use. I believe none of the preparations are as efficient as can be made. When glandular extracts have to pass through the processes of digestion and assimilation with the inevitable chemical and physiological changes incident to these processes, we cannot help but get erratic results. We are working metaphorically and practically in the dark. When some reliable firm manufactures for us a hypodermic extract of the corpora lutea or seminal fluid as potent and as well standardized as the present preparations of the suprarenals and pituitary gland, then we shall have made a real advance in the treatment of asexual obesity.

Let us suppose that our patient has returned to a normal condition. How is he to remain so? May he sit down in slothful ease, or gorge himself with fattening food, or may he wallow in the trough of his desires and still, by means of orchic extract, retain his dapper figure? There can be only one answer. *No!*

All that we, as physicians, can do is to place our patients in a position where by conserving their "vitalizer" they will be physically capable of carrying out the necessary exercise without undue fatigue or heart strain. In youth, boating, swimming, gymnasium and outdoor games cover the pill of exercise with a sugar coat and we swallow it gleefully. In later years, we sit in the grand stand and lick the sugar coating, while the other fellow swallows the pill. In fact, the whole problem may be condensed into one sentence, *eternal energy is the price of leanness!*

There is one other point which, in our enthusiasm, we must not overlook; it is this: Nature seldom makes a mistake, and a moderate amount of fat for a man or woman of middle age may be, like the immortal fleas of David Harum, "a good thing for the dog." When Nature endowed the gravid woman with increased fat during her pregnancy, it was no doubt with the intention that the primitive female, if left unattended during her lying-in period, might draw on her reserve supply. Perhaps this is an indication to us that the fat of middle age is intended for slow consumption in later years when the fires of life burn low.

In conclusion, permit me to reiterate that when we can eliminate other exciting causes for obesity, we must regulate, or correct where possible, the sexual habits, diseases, or surgical misfortunes of our patient. We, as a profession, should recognize that the secretions of the ovary and testicle must be conserved for the maintenance or reestablishment of the normal body weight.

176 MacLaren Street.

[1] I use an extract of testicle for hypodermic use, put up in sterile ampoules of one c.c. each, which the makers state to contain proteids, lecithin, cholesterin, guanine, nucleine, creatinine, etc.

DREAM INTERPRETATION.

By Hansell Crenshaw, M. D.,
Atlanta, Georgia.
Neurologist, Crawford Long Memorial Hospital; Associate in Neurology, Atlanta Medical College.

The dream is not a prophecy, but a retrospect. Yet from the days of Joseph to the present time, men have clung to the superstition that dreams foretell the future. The first book dealing with the dream as a psychological problem was Aristotle's *Dreams and Their Interpretation.* But perhaps the most trustworthy idea to be gleaned from this work is that Aristotle was probably partial to late suppers, inasmuch as he contends that dreams are of demoniac origin. Since the time when this philosopher undertook to account for his nightmares and the dreams of others, no less than seventy-five metaphysicians, psychologists, and psychiatrists have attempted, in books and papers, to solve the problem of the dream. Among these were Kant, Schopenhauer, and Maudsley. So conflicting and unconvincing, however, were these several efforts, that the late Herbert Spencer, in his fascinating autobiography, says that to him the dream has ever been an inscrutable enigma.

It was not until Professor Sigmund Freud, of Vienna, in 1900, published his remarkable work, *The Interpretation of Dreams,* that anything approaching a tenable theory of the causation and nature of dreams was advanced. After standing the test of a decade, an avalanche of criticism, and a wealth of further investigation, the Freudian conception of the dream has proved acceptable to such eminent and conservative students of mental matters as Dr. William A. White, chief of the Government Hospital for the Insane at Washington; Professor Earnest Jones, of the University of Toronto, and Dr. A. A. Brill, of Columbia University, New York, not to mention scores of other leading psychiatrists and alienists in this and other countries.

Freud was led to investigate the dream problem in a way most interesting. He was engaged at the time in treating obstinate cases of those near insanities called hysteria and the compulsion neuroses. His treatment was, and is based upon the discovery made by himself and Bleuler, that these particular maladies are due to repression on the part of the

patients of certain mental conflicts which occurred years before the psychic disturbances had manifested themselves. According to Freud, painful experiences, especially those of a sexual nature (disappointment in love, for example), become repressed and forgotten as a means of escape from the torturing memory of such occurrences. These buried experiences in persons of neurotic predisposition are prone to generate a sort of psychic tension, which expresses itself in the form of obsessions, hysterical behavior, or morbid impulses of divers kinds. Freud and Bleuler discovered that if the repressed painful ideas could be fished up from the subconscious regions of the minds of their patients and brought back into the field of consciousness—brought back into association with that body of ideas constituting the conscious mind—if this were done, then the nervous and mental disturbances ceased to exist.

Two or three methods of exploring the unconscious mental territory for fugitive ideas that had been repressed, were used by Freud. One was the free association method. This consists of getting the patient into a state of rest and quietude and instructing him to permit his thoughts to drift with absolute abandon and freedom. After a few minutes of this free flow of ideas, the patient is requested to tell what passed through his mind. And often, a clue is obtained as to the nature of the disturbing buried thoughts. Another method is to hypnotize those patients who are susceptible of hypnotism, and to ask questions of them during the hypnosis. A later method is the word association test of Jung, which has been adapted by Munsterberg and others to the exploration of the minds of criminals. But as before stated, during the application of these remedial measures, Freud was led to study the dreams of his patients; and he was so led because many of his patients insisted upon relating their dreams in connection with the association tests and so on. Realizing that the dream might turn out to be an avenue leading to the subconscious provinces of his patients' minds, Freud collected many dreams, including some of his own, and began a systematic study of the similarities, distinguishing features, etc., of dreams.

Here follows a brief outline of the conclusions reached by him: Every dream is a wish fulfillment. Usually the wish is one not easily attainable in reality, and generally, though not always, the wish which the dream fulfills is a sexual desire. The dreams of young children are frequently clear wish fulfillments. For example, the writer's little son recently begged to be allowed to quit school and to accompany his aunt to New York on a pleasure trip. He was denied this wish for good reasons, but dreamed the following night that he was on board the train with his aunt bound Manhattanward. Children often dream of feasting upon sweetmeats that have been denied them, and of prohibited sexual pleasures as they grow older.

The dreams of adults, however, are seldom such simple, undisguised indulgences in forbidden fruit. As a rule, the dreams of grown persons are disguised and distorted so as to obscure their real wish fulfilling purpose. Not realizing this fact, most people are apt to reject the theory that dreams are wish fulfillments upon the ground that they have had dreams which were distressing, horrible, and anything but desirable. For instance, one of Freud's patients dreamed that her dear little nephew was dead and that she stood looking down upon the child in a coffin. And one of the writer's patients, a vigorous young lady, dreamt that a ferocious lion chased her up one side of a mountain and down the other. How could either of these dreams be the fulfillment of a wish? The wish was a sexual one in each instance.

Take the case of Freud's young woman, first. Upon investigation, it turned out that she was deeply enamored of a certain young man and had quarreled hopelessly with him two or three years before the dream. Shortly after the quarrel, a child died in the household of the patient, and as a mark of respect for the family, the patient's former lover came to the funeral, stood by the young woman, and looked with her down upon the dead child. When she afterward dreamed of seeing her small nephew dead in a casket, she fulfilled a wish to be again in position to see her lover and have him near her.

Concerning the dream of the young lady and the lion, the following data are interesting. The lady was engaged to marry an elderly gentleman of considerable wealth. Her family encouraged the match, and while the young woman herself thought well of the alliance, nevertheless she postponed it once or twice. Deep down in her heart she desired to be courted, pursued, by a more virile, more animal lover than the lamblike old millionaire to whom she was betrothed. In a word, she wished something more leonine. Hence the dream in which the lion personated the lacking attributes of her aged fiancé. The mountain in this dream, too, has a sexual significance, if we are to believe with Freud that a wooded mountain is symbolic of the mons Veneris and that climbing in dreams symbolizes sexual activity.

Doubtless dreams so often have a sexual basis because no other impulse is so constantly repressed as the sexual impulse, and because no other impulse is so important to the race and to the health of the individual. Self preservation ranks second to race preservation; yet such is our cultural status that we are impelled and compelled to war against lust, regardless of personal or racial welfare. It is tolerably certain, however, that if the sexual energy is denied its normal expression, it will find an abnormal expression.

Thus the dream is an effort on the part of Nature to compensate and defend the mind. It is a protector instead of a disturber of sleep. Certain forms of insanity, wherein persons imagine that they are kings, emperors, or even gods, are, like dreams, compensatory mechanisms for those whose burdens have been too galling and too hard to bear. Similarly the seeming fault of forgetting is generally a defense mechanism without which the average mortal would have to endure the tortures of the damned here on earth. Moreover, the day dream, or fantasy, is a wonderful compensation to many a soul.

Another characteristic of the dream is that it consists of two parts, the manifest dream and the latent

dream. The manifest dream is the part we remember, and is a much condensed and highly dramatic representation of the latent dream thoughts. Each person, action, and scene of the manifest dream may represent more than one person, action, or scene in the latent thoughts of the dreamer. The latent dream thoughts are the stored up experiences of the patient's whole life, especially those that were painful or significant. In most dreams, childhood experiences are involved. As Freud says, "the child lives on in the dream."

Furthermore, the manifest dream is generally symbolic. Freud and his follower, Stekel, give lists of certain common symbols. Thus elongated objects of any sort, such as snakes, sticks, etc., are said to symbolize the male organ of generation. One of the writer's patients, a young widow, who had five possible chances of marriage, dreamed of coming upon five snake holes, from each of which protruded the head of a snake. One of the serpents came out and pursued the lady. The lock and key is also considered to have obvious sexual significance. Further examples of dream symbolism would consume more space than is at the writer's disposal; and those interested in the subject are referred to Brill's translation of Freud's work, *The Interpretation of Dreams.*

Let us consider now Freud's method of analyzing, or interpreting dreams. The dreamer tells or writes his dream, and the interpreter takes the scenes and persons of the dream, one at a time, and observes whether or not they are obviously symbolic of anything. This recognition of symbols is not practicable to any great extent, unless the interpreter is familiar with the life history of the dreamer. Accordingly, the physician undertaking to study the dreams of his patients, must first draw from the patient a complete story of his life, especially the inner mental life. The next step in the interpretation is to have the dreamer think over successively each scene and character of the dream, freely and without self criticism. The train of thought thus started in each instance should be followed, as far as practicable, by suitable questions on the part of the physician, or interpreter. In this way, a remarkable awakening of memory is obtained, and it is veritably possible to live a person's life over with him in the process of exhaustive dream interpretation.

An interesting question relative to Freud's conception of the dream is, Why and how are the latent dream thoughts disguised in the manifest, or remembered dream? The answer is, that even in dream activity there is some degree of conscious self criticism, which seeks to disguise, if not suppress inadmissable thoughts and realizations. Freud calls this guardian activity the psychic censor.

What shall we say of the practical value of Freud's method of dream analysis. Its chief value is that it furnishes the physician an avenue of approach to the hidden regions of the subconscious mind wherein are lurking those painful, repressed, and forgotten but disturbing memories, or complexes as they are called, which cause the neuroses. By reaching these forgotten mental conflicts, the physician enables the patient to bring them back into the normal field of consciousness, where they can be reviewed philosophically, calmly, and adequately. Thus the deeper recesses of the mind are purged, and the psychic equilibrium is restored. Hundreds of conservative physicians interested in nervous and mental disorders are making use of dream analysis in their work today.

To the question, What will be the permanent influence of Freud's psychanalytic principles and discoveries? the answer is difficult; because those who have faithfully followed out these doctrines are enthusiasts, while those who oppose Freud are generally either ignorant of his teachings or else so conservative in their ideas as to be incapable of accepting anything so novel. When, however, we consider Freud's ingenious analysis of dreams; the interpretation by similar analysis of the myths and legends of the nation; and the flood of light which the psychanalytic method has shed upon the ground springs of every day life; when the originality, the scope, and the depth of the Freudian conceptions are realized; we are impelled to believe that a new psychology is at hand, and that a new interpretation of mind, of conduct, and of life itself is in the making.

425-426 Candler Building.

GUM CAMPHOR AS A PRESERVATIVE FOR URINE.

By Jacob Rosenbloom, M. D., Ph. D.,
Pittsburgh.

On account of the fact that urine undergoes decomposition very readily, it is customary to add some preservative to prevent such change. This is especially necessary, when one works with twenty-four hour specimens of urine, or when some time elapses between the voiding of the urine and its examination. Many substances have been used for this purpose. Chloroform acts well, but it has a strong reducing action, thereby interfering with tests for carbohydrate; it also interferes with the estimation of creatinine. It may be removed from the urine by applying heat, but this causes considerable trouble when working with many samples, and no doubt produces chemical changes in the urine, beside concentrating it. Four drops of formaldehyde solution added to 500 c. c. of urine is an efficient preservative, but it may give rise to reactions resembling those due to carbohydrate reductions and those due to protein It also forms a crystalline compound with urea,[1] which is then present in the sediment and also interferes with tests for bile and for indican. Jaffé[2] has shown that formaldehyde solution vitiates the results obtained in the estimation of urea, uric acid, protein, indican, bile pigments, diacetic acid, and pentose. Hausmann[3] has lately shown that the presence of formaldehyde solution in urine interferes with the detection of urobilin.

Borax, boric acid, sodium or potassium fluoride, toluene, and many other substances have been advocated as useful urinary preservatives, but with little said to their advantage for that purpose.

[1] Smith: *Practitioner*, [illegible], 1913.
[2] *Therapie der Gegenwart*, 1912.
[3] *Deutsche medizinische Wochenschrift*, 1888, 1913, 39.

Powdered thymol, about one gram to a twenty-four hour specimen of urine, is widely used as a preservative for urine, and until recently it was thought that this substance did not interfere with any of the tests applied to the urine. However, Welker[4] has found that urines preserved with powdered thymol yield a distillate which gives a pink or red color when Lieben's test for acetone is used. He found that this color was due to an iodothymol compound, which had previously been prepared synthetically by Messinger and Vortmann. Weinberger[5] has recently shown that a ring closely resembling the protein ring obtained in Heller's test for protein is often given by urine preserved with thymol. This ring is due to the formation of nitrosothymol and possibly nitrothymol. The thymol may be removed from the urine by gently agitating equal volumes of petroleum ether and the urine for two minutes, and decanting the ether extract. The ring does not form after the thymol is extracted by this method.

The writer[6] has recently found that the presence of thymol in urine gives rise to a violet color in the chloroform extract of Obermeyer's test for indican. Hattrem and Hawk[7] found that the presence of thymol interfered with the quantitative estimation of indican by Ellinger's method. I have also noted that urine preserved with thymol will give a positive reaction for protein when Millon's reagent is used. I have found that this reaction is due to the thymol present, and this fact must be remembered when testing urine for tyrosin by means of Millon's reagent. From these observations, it may readily be noted that thymol is not the harmless urinary preservative that it was thought to be.

Powdered camphor is much superior to thymol for this purpose. About one gram for a twenty-four hour specimen is used. The excess, if desired, may be removed from the urine by filtration, and I have found that any small amount of this substance, which may go into solution in the urine, does not have any appreciable influence upon the estimation of any of the urinary constituents and does not interfere in any way in the following tests: Protein, carbohydrates, Obermeyer's test for indican, Frommer's test for acetone, Gerhardt and Arnold-Lipliawsky tests for diacetic acid, Gmelin's or Nakayama's tests for bile pigments.

5737 FORBES STREET.

Vaccine Therapy in Typhoid Fever.—Josué, in *Bulletins et memoires de la société médicale des hôpitaux de Paris* for July 10, 1913, gives a preliminary report of results obtained in typhoid fever by the administration of an autogenous vaccine. A blood culture is made, then a second culture, which is sterilized by heating for six hours at 58° C. The bacilli are then counted by the customary procedure and diluted with salt solution to give doses each containing 200 million of the organisms. Each patient is given three such doses subcutaneously at twelve hour intervals. Although the cases thus far treated number only three, the results were so good as to prove highly encouraging.

[4] New York Medical Journal, lxxxvi, 552, 1907.
[5] Journal of Medical Research, xxviii, 84, 1913.
[6] Archives of Internal Medicine, vii, p. 646, 1911.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXLIV.—How do you treat diphtheria? (Closed.)

CXLV.—How do you treat alcoholic cirrhosis of the liver? (Answers due not later than April 15th.)

CXLVI.—How do you treat scarlet fever? (Answers due not later than May 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The Prize of $25 for the best essay submitted in answer to Question CXLIII was awarded to Dr. S. J. Essenson, of New York, whose article appeared on page 686.

PRIZE QUESTION NO. CXLIII.

THE TREATMENT OF GALLSTONE COLIC.

(*Continued from page* 688.)

Dr. Henry D. White, of Lancaster, N. Y., states that:

The treatment of gallstone colic consists in the hypodermic administration of morphine sulphate, grain one quarter to one half, depending upon the physical condition of the patient and the severity of the pain. If the patient is robust one half grain may be given, but if he is not, it is much safer to begin with the smaller dose. The initial dose can be repeated in fifteen or twenty minutes and, if necessary, a third dose may be given. In case it is necessary to give more than one or two doses, it is better to combine with it atropine sulphate, grain 1/150, so as to counteract the poisoning effect of the morphine in case of sudden termination of the pain.

Inhalations of chloroform may be given if the pain is unusually severe while waiting for the morphine to take effect. This, however, is very rarely necessary.

If for any reason it is impossible to use morphine hypodermically, then you can give a teaspoonful of paregoric or ten or fifteen drops of laudanum or deodorized tincture of opium. This, however, is not very satisfactory, as the stomach is usually in such a condition that absorption does not readily take place, if at all.

The application of moist heat to the hepatic region is often of great benefit in relieving the rigidity of the abdominal muscles and the bile ducts. Care must be observed in its use in not having the heat so intense as to scald or burn the patient. During the entire attack the physician should remain with the patient so as to observe the effect of the morphine when the pain subsides.

After the attack has passed off the patient should be kept very quiet, as there is usually considerable

soreness that will have to be controlled by an occasional dose of one quarter grain of morphine for several hours.

The aftertreatment consists in abstaining from food and drink for twenty-four hours and the application of moist heat to allay the inflammation that may have arisen in the gallbladder or ducts. No attention need be given to the bowels for thirty-six hours after an attack, and then a simple soapsuds enema may be given. The diet should be very light, consisting of gruels, toast, and hot tea and milk diluted with lime water. This diet should be continued for several days and then gradually increased. Eggs should at no time be given. All coarse foods and vegetables should be forbidden for several weeks.

As a preventive of further attacks the patient should be encouraged to drink water, especially Carlsbad water. Sodium salicylate or sodium carbonate may be given in small doses for a considerable length of time, provided there is no derangement of the stomach. Olive oil in tablespoonful doses three times a day often acts as a preventive and in some cases seems to cause the gallstones to become dissolved.

Dr. V. A. Lapenta, of Indianapolis, writes:

The first indication presenting itself is the unbearable pain in the epigastric region. In many cases we are confronted by marked nausea and profuse vomiting. The hypodermic injection of one eighth grain of morphine, repeated in about one hour, is about the only thing that will have much effect. A hot water bottle applied to the region of the gallbladder will greatly aid in securing comfort.

In some cases the vomiting and nausea will not abate until you have washed the stomach with warm water. This is particularly true in cases where there exists extensive adhesions from the gallbladder to the duodenum and pylorus, the attack being complicated by pylorospasm and gastric hyperacidity. The diet should be, for a day or two, strictly liquid, and a good dose of effervescent sodium phosphate should be given and repeated for several mornings. I like the employment of castor oil in these cases, but most patients will not take it.

Our next step in the treatment should be toward encouraging biliary antisepsis, if such a thing is possible. Sodium succinate, sodium salicylate, sodium oleate, and the various bile salts, sodium taurocholate, and sodium glycholate are useful drugs when judiciously employed. Hexamethylenamine has been lately asserted to possess antiseptic properties on the biliary tract.

If the evidence submitted to support this view is true, this drug should prove a valuable adjunct in the treatment. I also regard as a very valuable adjunct to the treatment a little education by the physician of the patient. The patient should be impressed that there is no cure for gallstones but good surgery. In unmistakable terms we should assure the patient that any one asserting ability to cure gallstone disease is a quack.

Delayed operation means probable gangrene of the gallbladder, cancer, chronic pancreatitis, danger of fatal jaundice by occlusion of the common duct, and, the perpetuation of chronic dyspepsia and gastritis; a valuable source of wealth for the patent medicine quack, and a very good means of support for the many incompetents who burden the medical profession.

Dr. Charles Henry Phillips, Jr., of St. Louis, recalls that:

A large majority of the profession, and with them we agree in part, resort at once to the hypodermic injection of morphine, or the inhalation of chloroform. Only when the paroxysm is severe and agonizing, when the patient is weak and exhausted, or restless and worn from the attack, do we use these drugs. Experience has taught that instead of employing morphine at the very start, it should be withheld as long as possible, for, while relieving the pain, it adds to the discomfort by tightening the secretions and modifying the vomiting. Its indiscriminate use is further harmful, not only because of the idiosyncrasies sometime encountered, but because of the possibility of establishing a habit in the patient. We have never used chloroform, but want to emphasize that almost invariably the pain is controlled by the application of a hot salt pack to the right hypochondrium. At other times gratifying results have been obtained from an ice bag.

The following formula not only stimulates the liver cells and peristalsis, but by emptying the entire intestinal tract, reduces fever, and liberates the intestinal bacteria and sometimes the stones themselves:

℞ Hydrargyri chloridi mitis, ...grs. iii;
Resinæ podophylli, } .....aā gr. i;
Extracti hyocyami, }
Salol, ...grs. vi;
Sodii bicarbonatis, ...grs. ix.

M. fiant capsulæ No. 6. One every hour until the bowels move freely; to be followed the next morning by four drams of Epsom salts, with the addition of a few drops of turpentine.

Thus, we expel the flatus, do away with any meteorism present, and soothe and asepticize the intestinal tract.

With the paroxysm relieved, the next step is the prevention of the attacks, control of the pain, expulsion of the stones, and the inhibition of new formations. The following serves admirably and guards the heart as well:

℞ Codeini sulphatis, ...grs. iii;
Strychnini, ...gr. ¼;
Aspirin, ...grs. lx;
Sacchari lactis, ...grs. xxx.

M. fiant chartulæ No. 12. One every three hours, if necessary.

Olive oil by lubricating and oiling the stomach and intestines, or by osmosis, or by backing up into the ducts, makes the stones easy of expulsion, and doses from two to four ounces three times a day generally suffice. Brilliant results attend the administration of glycerin, four drams every three hours. We add to both a few drops of lemon juice to insure palatability. The nausea and vomiting which are often troublesome and annoying, yield readily to cracked ice over brandy.

The stones are aided in their passage by the high rectal enema of cold water. To one quart of the latter, one tablespoonful of common soda is added, which makes it alkaline, and it is used night and morning. Further to aid the bowels, we occasionally use one dram of glycerin to a pint of warm water and both measures work charmingly. These pro-

cedures are almost specific and seldom fail to bring the stones, which have varied from a grain of sand in size to a small marble.

The urine is generally acid in reaction and as this condition probably enhances the formation of calculi, we render it alkaline and stimulate the kidneys by the administration of Carlsbad, lithia, or some other alkaline water. Lithia tablets have been used with satisfaction by allowing two in a glass of water every three or four hours. Believing as we do that the potency of the antacids, alkalines, and antiseptics cannot be overrated in gallstone colic, we use them constantly in such affections.

When the patient is convalescing, the following formula, stimulating mildly the flow of bile, asepticizing the tract and antagonizing acid formations, will be serviceable:

℞ Fellis bovis, ...grs. vi;
Pepsini, ...grs. xii;
Salol, ...grs. xxiv;
Sodii bicarbonatis, ...grs. xxx.
M. fiant capsulæ No. 12; one three times a day.

The alkaline waters or lithia tablets are indefinitely continued, together with one dram of effervescent sodium phosphate every morning.

Leaving now the medicinal treatment, with the attacks subdued, we direct our attention to the dietetic end of the treatment. During the colic nothing but a liquid diet is permitted. Later the patient is advised to eat regularly and either to abstain from the fats and starchy foods or indulge in them moderately. Green vegetables, lean meats, except pork, soft boiled eggs, sweet milk and buttermilk are allowed. Pastries, sugars, etc., are interdicted and tea and coffee, alcohol and tobacco allowed but sparingly, if at all.

In our hygienic treatment, nicely ventilated living and sleeping apartments are required, also regular sleep, plenty of fresh air and water, moderate and systematic exercise, not to the point of fatigue. Tight lacing is warned against, and clean, comfortable clothing insisted upon.

Finally, the patient is instructed to keep the bowels open, and if tumors and the like, by their mechanical action, enter into the etiology, and if the given attack or obstruction is so great, or the inflammation so severe as to bring about threatening and dangerous complications, we advise immediate surgical intervention.

Dr. Estill D. Holland, of Hot Springs, Ark., points out that:

The treatment of gallstone colic is usually divided into two parts—treatment during the attack and treatment between the attacks. It should rather be divided into treatment during the *first one or two* attacks and between the *first two* attacks. If one treats a patient for gallstone colic and then in several weeks he has another acute attack, it is time to call a surgeon.

In gallstone colic you have one or more stones of various dimensions trying to pass through a small duct. If you wish to assist labor, or if you wish to dilate the rectum, you first totally or partially anesthetize the patient, not only to diminish the pain, but also to cause a diminished tonicity of the muscles which will allow of greater dilatation. In gallstone colic one encounters the same necessity, only here we have to keep this relaxed condition up for an unknown length of time and it is better to use morphine. I do not think it best in this condition to use atropine as we want all the lubrication that we can get.

The first thing to do is to be sure of your diagnosis and then give the patient a fourth to a third of a grain of morphine hypodermically and repeat the dose if necessary. There is no use in wasting time on bromides and salicylates, for they may irritate the stomach and, if your diagnosis is correct and the pain intense, they will never be sufficient and will only allow the stones more time to irritate and cause congestion.

The patient will be sick at the stomach and either vomiting or inclined to do so, so he should drink several glasses of water with a teaspoonful of sodium bicarbonate to the glass. This serves to wash out the stomach and to neutralize the gastric acidity which is almost sure to be high. By the time that the stomach is thoroughly cleansed your patient should begin to feel the sedative effects of the morphine. Allow him to lie in the most comfortable position and place a hot water bag, which contains only a small amount of water since he will not be able to stand any great pressure, over the region of the gallbladder. This has a soothing effect on the patient and tends to quiet pain, also to draw the blood from the gallduct and diminish inflammation. If he can retain a large amount of water by mouth, give him all he will drink, if not, give it by rectum. I think that hypodermoclysis is always justifiable in these cases, but it is not always practical.

After the crisis has passed give patient a large dose of castor oil and watch for the stone. The treatment after the attack should consist of a thorough examination of the patient, including the blood, even to a Wassermann, urine, stools, and gastric juice. Try to correct any abnormality and give some mixed infection vaccine containing staphylococci, streptococci, pneumococci, bacillus coli, and any other organisms that you have reason to think might cause infection of the gallbladder and duct.

If your patient has not passed a stone, you should have an operation performed as soon as he has recuperated sufficiently from the colic; you should insist on an operation as soon as the second crisis has passed.

To summarize:

1. Give morphine hypodermically.
2. Clean out stomach with sodium bicarbonate.
3. Hot water bag over gallbladder.
4. Give all the water he can take.
5. Give castor oil and watch the stool for stone.
6. If stone passes, start intermediate treatment, and if stone does not pass, have operation performed as soon as possible.

Convalescent and prophylactic treatment:

1. Thorough examination.
2. Try to correct any abnormalities.
3. Give mixed infection vaccine.
4. Have patient drink large amounts of water.

(*To be concluded.*)

Therapeutic Notes.

Treatment of Acne.—A. C. Geyser, in *American Medicine* for November, 1913, states that to empty the bowels in this affection, and keep them so for a time at least, administration of a solution of Rochelle salts once daily is indicated. The mere emptying of the bowel, however, is only an incidentally useful effect, the essential desideratum being the prevention of intestinal fermentation. The diet should therefore be reduced to the simplest terms, coarse bread containing bran, vegetables, and raw fruit being chiefly used. The constitutional treatment should include the taking of a hot immersion bath—hot enough to cause perspiration to run down the face—each night, followed by a sponging with cool water and a rubbing of the entire body with a coarse towel. Fresh air, especially in the bedroom at night, is indispensable.

Locally, the parts should be thoroughly cleansed with tincture of green soap, which is then removed by washing, first in very hot, and after this in very cold water. Some minutes should be spent every night and morning in this cleansing process. Several changes of hot and cold water are necessary. After the cleansing the parts should be bathed a few minutes with a one in 2,000 solution of mercury bichloride, which should then be allowed to dry on. Serum injections or autogenous vaccines may be used, but the x ray is probably never indicated except as a last resort. Individual suppurating lesions should be opened, evacuated, and treated as would be any other local septic area.

Treatment of Vulvovaginitis in Young Children.—Nathaniel Barnett, in the *Archives of Pediatrics* for September, 1913, advises treatment through a Kelly endoscope in these cases. The child is placed on the bedpan in the dorsal position, the foot of the table being raised 30°. This permits of bringing the cervix in line with the endoscope, which, after the external genitals have been sponged off, is inserted as far as possible. The size of endoscope used depends on the size of the opening in the hymen and not on the age of the child. An endoscope of the proper size will cause no pain, and after one or two sittings the little patient will allow the procedure very easily. After insertion of the endoscope the obdurator is withdrawn and the light inserted. With no other manipulation than withdrawing the tube one quarter to one half inch the cervix will present at its distal end. Any secretion present is then removed with the applicator, and Lugol's solution applied directly to the cervix and vaginal walls as the endoscope is slowly withdrawn.

The endoscope treatments are carried out three times a week. In addition, the mother should be instructed in the method of giving the child vaginal douches and in preparing a one in 10,000 potassium permanganate solution for this purpose. In administering a douche a soft rubber catheter is introduced as far as possible, and about a quart of the solution used is allowed to flow in slowly and escape. Such an irrigation is to be given daily. The patient is also placed on small daily doses of hexamethylenamine.

Cases may be considered cured if smears taken weekly are negative for three consecutive weeks. Of seven cases in which irrigations alone had failed to cure, even after six months, five were cured in one month by the combined treatment.

Treatment of Trachoma with Carbon Dioxide Snow.—Galetti, in *Revue de thérapeutique médico-chirurgicale* for January 15, 1914, is stated to have found carbon dioxide snow more rapid in action and less annoying to the patient than copper sulphate and other salts customarily used. The applications of snow are made after local analgesia has been instituted by instillation of a 3 per cent. solution of cocaine. At each sitting five or six applications can be made to different points on the everted upper lid and three or four to the lower lid, spaces being left between the several points. When the snow is removed the area touched shows a pale depression slightly broader than the diameter of the snow pencil. A few seconds later, the pallor gives way, beginning at the edges, to a marked hyperemia of the conjunctiva, with small hemorrhages. Large trachoma granulations collapse when the snow is brought in contact with them, their contents escaping to the exterior. The method is advantageous in being practically painless, and in not obliging the patient to remain idle on the day of treatment. As the freezing action extends somewhat beyond the precise area of contact, it seems probable that a favorable effect may be exerted, even upon disease of the tarsus itself.

Treatment of Tetany and Laryngeal Spasm.—B. Grünfelder, in *Semaine médicale* for June 25, 1913, is credited with the assertion that calcium bromide is much superior to other bromides in these conditions. He treated eight cases of the "spasmophilic diathesis" with sodium bromide followed by calcium bromide, while in nine other cases the calcium salt was administered from the beginning. The following solution was used:

℞ Calcii bromidi, ...3v (20 grams);
Aquæ destillatæ . . . . . 3x [illegible]

M. Sig.: Two and a half teaspoonfuls three times daily with the meals.

In six of the cases under sodium bromide, arrest of the spasmodic attacks took place only after ten to sixteen days, and in the two other cases not until the calcium had been substituted for the sodium salt. In the nine cases exclusively under calcium bromide, on the other hand, the spasmodic manifestations disappeared in three to six days.

Treatment of Bronchitis in Asthmatic Cases.—Babcock, in the *Journal of the Michigan State Medical Society* for August, 1913, emphasizes the efficiency of apomorphine hydrochloride in doses of one fourth to one half grain (0.015 to 0.03 gram), by mouth, in syrup of hydriodic acid as an expectorant in cases of asthma with chronic bronchial catarrh. These, and even larger doses of apomorphine, can be tolerated by mouth without producing nausea. A combination which is likewise often useful is the following:

℞ Tincturæ lobeliæ, ...3v (20 c. c.);
Fluidextracti grindeliæ, ...3i (30 c. c.);
Syrupi acidi hydriodici, q. s. ad.....3iv (130 c. c.).

M. Sig.: One teaspoonful in water three or four times a day

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CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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THE PATHOGENESIS AND TREATMENT OF STAMMERING.

Although the treatment of stammering is usually left to specialists, this applies only to sufferers who either live in, or in close proximity to large centres, or who are sufficiently endowed with this world's goods to disregard expense. A large proportion of the stammerers throughout the country thus depend upon what advice the local physicians are able to supply. Hence the value of authoritative information on the subject, particularly when it is furnished by a member of the profession who has given special attention to it during many years, Dr. G. Hudson Makuen. A report of 1,035 cases studied at the Philadelphia Polyclinic Hospital, which this author read last week before the Philadelphia Laryngological Society, brought out many interesting facts.

The age of the patients ranged from two and one half to fifty-three years, and thirty-eight per cent. asserted that they had stammered as long as they could remember. It is rare for the affection to develop after puberty, although one patient began to stammer at twenty-three years of age. Seventy-seven per cent. of the total number were males and twenty-three per cent. females, the proportion of females being much greater than previous percentages have given. Aphasia also occurs less frequently in the female than in the male, and stammering is itself a form of aphasia, both being of cerebral origin. The cerebral speech centres appear to be far more unstable and variable in the male than in the female, which accords with the view that there is a greater general variability of function in the male than in the female.

Stammering usually occurs in those having a characteristic temperament, which in some respects is the result as well as the cause of the affection. Fear is probably the most dominant characteristic, but it has its origin largely in the dread or anticipation of not being able to talk. A certain degree of intellectuality is necessary for the full development of stammering. Eighty-five per cent. of the total number of cases were of average mentality; fourteen per cent. were slightly below the average; and only eight per cent. were of distinctly feeble mentality. Speech is a semivolitional act, but scientific training tends to bring it more and more under the domain of the will; it should be employed, therefore, as a prophylactic measure in children showing a tendency toward faulty speech development. The general health of stammerers is usually somewhat below par, and they are generally nervous and excitable, exhibiting marked neurotic tendencies.

Heredity is the most important factor in the etiology of stammering, thirty-nine per cent. of the patients having relatives who stammered; but the true percentage is probably much higher than this. Stammering is an acquired affection in the sense that the faculty of speech itself is largely acquired, and it is the physical anomalies in the central mechanisms of speech that are transmitted from parent to offspring and that give rise to the affection under suitable environmental influences. About three per cent. of the total were the offspring of consanguineous marriages.

Thirty-two per cent. of the patients confessed to having associated with others similarly afflicted, but inasmuch as this association was largely with those in their own family, it was quite impossible to determine which of the two factors, inheritance or association, was etiologically paramount. Twenty-eight per cent. of the patients dated the origin of the affection from the instant of having received a nervous shock, from fright or injury, but the nervous shock, like so many other of the presumable causes of stammering, must be regarded etiologically as a secondary factor, the primary one being a weakness or an instability of the cerebral speech areas, resulting from a general neurotic or neuropathic condition.

Twenty-six per cent. had faulty vision, owing chiefly to defective action of the ocular muscles. Only three per cent. had subnormal hearing, and

none of the patients was deaf. Stammering occurs chiefly in those receiving their speech cues from the auditory and kinesthetic areas of the brain, and therefore it must be due primarily to a weakness or instability in this region of the brain, or in other words, to a kind of auditory amnesia. Ninety-seven per cent. of the patients had some nose or throat trouble, and in about half of them operations were performed for their relief. Peripheral obstructions to speech, however, are in the majority of instances only secondary causes of stammering, the primary cause being in the cerebral cortex.

The treatment of stammering is rather more psychological than physiological, and it has for its purpose primarily the reeducation of the cerebral speech centres through the accurate physiological use of the peripheral mechanisms of speech. The patient must practise suitable exercises with close attention and with purposeful intent, and the chief purpose of the practice should be the establishment of normal mental imagery, for upon accuracy of the mental imagery depends accuracy of speech.

BANTI'S HEMOLYTIC SPLENOMEGALY.

As restated to us in a recent conversation with the distinguished pathological anatomist of Florence, the fundamental characters of the interesting pathological process termed by Banti, hemolytic splenomegaly, are: 1. Progressive anemia, due to a pathological growth of the hemolytic processes, this origin being peremptorily demonstrated by various changes, e. g. (a) a diminution of the resistance of the red cells, which is made evident by the isotonia of the blood; (b) the phenomena of active destruction of the red cells, demonstrated by the presence of numerous erythrophages and deposits of hematic pigment in the spleen, liver, and lymph nodes; (c) the icterus without decolorization of the feces, usually accompanied by a simple urobilinuria, rarely by a slight bilirubinuria, thus consequently having all the hemolytic characters; (d) a diminution of the red cells and hemoglobin in the blood, this decrease coinciding with an increase of the icterus and urobilinuria during the periods of aggravation of the anemia. 2. A special hemopoietic reaction of the bone marrow, indicated by the presence in the blood of normoblasts, myelocytes, polychromatophilous erythrocytes, erythrocytes with basophile granulations, and a granulofilamentous substance. 3. A splenomegaly too considerable to be exclusively accounted for by the deposit in the spleen of the elements of the blood undergoing destruction (spodogenous splenic tumor), nor to be attributed to an increase of connective tissue, because microscopically there is none. Banti is therefore of the opinion that the splenomegaly depends largely upon the congestion and above all on a hyperplasia of the splenic tissue produced by an increase of the destructive function of the organ on the red blood corpuscles.

It is evident that the clinical and pathological manifestations of hemolytic splenomegaly have the greatest similarity to those obtained in animals by the administration of certain hemolytic poisons, such as pyridine or toluylendiamine. The hemopoietic reaction of the bone marrow undoubtedly depends on the anemia and certain special causes which provoke it.

It may properly be asked, since the anemia is a consequence of an exaggerated hemolysis, what relationship exists between the splenomegaly and the pathological hemolysis? It has been known for a long time that the spleen destroys the red blood corpuscles, and Banti and others have shown that in dogs on which splenectomy has been done, a resistance of the red blood corpuscles to certain hemolytic poisons is increased, and a dose at least three times as great as for dogs in which the spleen is not removed, is necessary to produce icterus. Charrin and Mousser, and Glauckler more recently, have shown that in animals deprived of the spleen, there is a marked diminution of the biliary secretion. We may thus conclude that the spleen exercises a great influence over the hemolytic and biligenic processes, either because it diminishes the resistance of the red blood cells and thus prepares them for destruction in other organs, or because it directly destroys them and prepares the necessary materials for the biliary secretion.

Medical treatment is of no avail, save to procure a temporary improvement, which does not prevent the fatal progress of the disease; splenectomy alone can assure a cure. Of the four cases operated in to date all have ended absolutely favorably, and shortly after the operation the anemia, icterus, and urobilinuria disappear. The cure is permanent and the first patient operated on, now nine years ago, is still in perfect health. Consequently, removal of the spleen should be advised without hesitation.

HOSPITAL NURSING FROM THE BUSINESS STANDPOINT.

In a recent issue of a medical journal a gentleman of wide business experience gave some plain facts with regard to the management, from the standpoint of modern business, of some of our general hospitals. There was one matter which he touched upon but lightly, and that was the management of the nursing staff. While there is much machinery about our large hospitals to get out of

order and cause trouble, the vast majority of complaints have their origin in some mishap, real or fancied, in the department of nursing; and it is to be expected that complaints should arise from this quarter, for with the exception, if it is an exception, that hospitals can best cope with emergency cases, the prime reason for sending a patient to the hospital is that he may have good nursing. Drugs can be given and operations done at home, and there are doctors enough and to spare, but the cost of home nursing is considerable. We might say in the phrase of the French sovereign, the nurse, she is the hospital.

Now, though everything depends on the ability and faithfulness of the nurse, there are, as Artemus Ward would have said, so many of her that her importance is not recognized. It used to be that the workman in a factory was not considered as much more than a machine which would turn out the same amount and character of work, no matter how many hours a day it was driven. The business world, in a businesslike manner, has been weighing man more carefully, and has discovered that to get the most for the money, they must not work him over a certain number of hours a day. It has learned that the human mechanism differs from ordinary machines in that the quantity and quality of its work are greatly impaired by fatigue and long hours. By actual measurement it was found that more money could be made from him on short than on long shifts.

To return to our hospital. Even supposing her abundantly fed and comfortably housed, which is not always the case, the nurse must work from ten to thirteen hours a day with none too much time for meals, and that at work which is not only fatiguing, since she must be on her feet all day, but which is also wearing on the nerves. At night she is often in charge of twenty or more patients for ten or eleven hours at a stretch. She usually survives the "training," but does she afford the best results to the hospital? Her schooling is a trying ordeal and this seems to have leaked out, since many hospitals are having difficulty in finding suitable material for their schools of nursing, and if the probationer had always a taste of what she was entering, we fancy there would be still less material. How the nurse ever gets anything out of her theoretical courses is a mystery, for she is so fatigued that she finds it almost impossible to pay attention or even to keep awake in the lecture room or over her books.

While it might be difficult to prove the matter by figures, we believe that an eight hour day would tend to give a maximum of excellence in work to the hospital, and at the same time afford a maximum of benefit for the nurse herself. The Public Health Service, which does not usually waste its funds, works its nurses, at all events its women nurses, on eight hour shifts, although they have already had their special training, and it must do so with the expectation of getting the most out of them. A few general hospitals have within a short time adopted this eight hour schedule. We look for other hospitals to follow this example and believe that, if not in money saving, it will, in good accomplished to the patients and also to the nurses, be well worth while.

ECONOMIC ASPECTS OF DISPENSARY ABUSES.

In an address delivered recently in Philadelphia, Dr. Joseph D. Farrar, chairman of the committee of the American Medical Association on hospital and dispensary abuse, said that in their efforts to prevent the hospitals and free dispensaries from ruining their practice, ninety per cent. of the physicians of Philadelphia dispense their own medicines; fifty per cent. are getting only fifty cent fees for office consultation, twenty-five per cent. are charging only twenty-five cents, while about three per cent. receive only ten cents. According to Doctor Farrar, this condition is due primarily to the lack of discrimination on the part of hospitals and dispensaries, which treat patients free of charge, whether they are able to pay or not. He said that this practice was not only detrimental to the financial interests of the physician, but imposed an undue burden on the State, and he advocated the enactment of a law forbidding persons, who are able to pay, to receive treatment free. The figures given are startling, but Doctor Farrar occupies a position which should enable him to speak with authority in the matter. Every physician engaged in an effort to build up a private practice learns to his sorrow something of the evils resulting from indiscriminate free treatment by hospitals, and the various medical societies would do well to give this subject a thorough study with a view to devising means for checking this abuse of charity.

A SATISFACTORY SENTENCE.

Physicians will be satisfied with the sentence of the planners and backers of a certain debenture corporation to six years' imprisonment, and will be at a loss to understand how any one could have appealed for mercy for any of these particularly mean and conscienceless swindlers on account of their alleged respectability. Many practitioners gave up their hard earned savings to these sharks, seduced by the handsomely printed and convincing circulars, most ingeniously worded to woo the confidence of those unable to make careful investigation. It is a particularly base and cowardly business to swindle professional men, and we hope this sentence, even with its remissions for good conduct, will prove a deterrent to the lower grade crooks.

Obituary.

JOSEPH DECATUR BRYANT, M. D., LL. D.,
of New York.

Doctor Bryant died, on April 7th, at St. Vincent's Hospital, whither he was removed from his home, 48 West Fifty-ninth Street, on March 11th, suffering from diabetes. He was born at East Troy, Wis., in 1845, was educated at Norwich, N. Y., Academy, and at Bellevue Hospital Medical College, where he graduated in 1868; New York University gave him the honorary degree of LL. D. in 1908. His surgical career in New York was one uninterrupted series of successes and promotions from the start, beginning with his internship at Bellevue from 1869 to 1871, his subsequent appointment as assistant to the chair of anatomy, his succession to the chair of descriptive and surgical anatomy in 1877. He was professor of anatomy and clinical surgery and associate professor of orthopedic surgery in 1883, and in 1898 became professor of the principles and practice of surgery and of operative and clinical surgery in the united University and Bellevue Hospital Medical College. At various times he was also attending, visiting, or consulting surgeon to the West Side Dispensary, Bureau for Medical and Surgical Relief, Charity Hospital, Bellevue Hospital, New York City Insane Asylum, St. Vincent's Hospital, Northwestern Dispensary, Hospital for Ruptured and Crippled, Woman's Hospital, and St. Joseph's Hospital, Yonkers. He was president of the American Medical Association, 1907, 1908, after having presided over the New York Academy of Medicine in 1895, the New York State Medical Association in 1898, and the New York State Medical Society in 1906.



Joseph D. Bryant

Doctor Bryant was a factor in public life, serving as sanitary inspector for the New York health department for six years from 1873. From 1887 to 1893 he was both City and State Commissioner of Health. He was surgeon to the Seventy-first Regiment for nine years and later Surgeon General of the National Guard of the State of New York.

Doctor Bryant was a warm personal friend of President Cleveland and accompanied the latter on many of his yachting trips, both as companion and adviser, and is said to have performed, during one of these, a major operation for a growth in the President's mouth. He was the author of a standard work on operative surgery and senior editor of *Bryant and Buck's American System of Surgery*, as well as a frequent contributor to the NEW YORK MEDICAL JOURNAL and other leading scientific periodicals. He was a man of unusual firmness of character, a fine disciplinarian, of straightforward and compelling demeanor, and was greatly respected by his colleagues and students. He is survived by a widow and one daughter.

News Items.

American Posture League.—Announcement is made of the incorporation at Albany, N. Y., on April 2d, of the American Posture League, a national body formed to improve human health and efficiency, through interesting the public in correct physical posture and the improvement of physical conditions affecting it. The new organization is particularly concerned with the sitting and standing position of children in schools and of adults in shops, offices, factories, and elsewhere. It hopes to effect a more general use of scientific and healthful principles in seating accommodations for working purposes and for public audience rooms and vehicles, and, by systematic education, to establish a demand for healthful standards for what may be termed posture engineering. Bulletins taking up the various phases of school and factory hygiene that affect posture will be issued from time to time, and lantern slides will be prepared and circulated to supplement the work of the bulletins. The organization is well fitted to carry on the work undertaken, as its membership includes orthopedic surgeons, physical trainers, and educators who have specialized on this subject. Miss Jessie H. Bancroft, assistant director of physical training, New York city public schools, is president of the league, and among the members of its board of directors are Frederick R. Green, M. D., and Joel E. Goldthwait, M. D., vice-presidents; Cornelius S. Loder, acting treasurer; Henry Ling Taylor, M. D., secretary; E. G. Brackett, M. D., S. Josephine Baker, M. D., William H. Burnham, Ph. D., Eleanora S. Everhard, M. D., R. Tait McKenzie, M. D., Eliza M. Mosher, M. D., Thomas A. Storey, Ph. D., M. D. Board of electors: J. George Adami, M. D., Ernest Bryant Hoag, M. D., Philander P. Claxton, Litt. D., Melvil Dewey, LL. D., Robert L. Dickinson, M. D., Fletcher B. Dressler, Ph. D., Irving Fisher, Ph. D., William Webber Ford, M. D., Amy Morris Homans, and William H. Maxwell, Ph. D.

The Officers of the Medical Reserve Corps of the United States Army would be benefited by the passage of the bill, which was introduced into the United States Senate by Mr. Gallinger and into the House of Representatives by Mr. Metz, to amend the bill providing for the establishment of a medical reserve corps so that members of that corps would be allowed increased pay for length of service, as are members of the medical corps itself, the time of active duty only being counted. The bill also provides for retirement, and for retirement pay for physical disability incurred in the line of duty while on active service.

Mortality Statistics of New York.—During the week ending April 4, 1914, there were reported to the Department of Health of the City of New York 1,612 deaths from all causes, corresponding to an annual death rate of 15.06 in one thousand of population. The death rate for the first fourteen weeks of 1914 was 15.57, compared with a rate of 15.77 for the corresponding period in 1913.

New Chair of Tropical Medicine in Brooklyn.—The faculty of Long Island College Hospital has established a Chair in Tropical Medicine and the first occupant will be Arthur N. Tasker, A. B., M. D., captain in the medical corps of the United States army. Captain Tasker is stationed at Fort Hancock, N. J., and will so arrange his duties as to be able to deliver his course of lectures on tropical medicine during the spring term.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Tuesday, April 14th, Pediatric Society; Wednesday, April 15th, County Medical Society, Section in Otology and Laryngology of the College of Physicians, and the Northwestern General Hospital Medical Society; Thursday, April 16th, Northeast Branch of the County Society and the Section in Ophthalmology of the County Society; Friday, April 17th, Southeast Branch of the County Society.

The Death of Dr. Joseph D. Bryant.—The Medical Board of St. Vincent's Hospital announce with profound sorrow the death of Joseph Decatur Bryant, M. D., LL. D., for twenty-seven years visiting surgeon to that institution. His great skill and wide experience, not less than his cheerful, sympathetic presence, will be greatly missed by the sick poor and by his colleagues.

José M. Ferrer, M. D., president.
Charles Edward Nammack, M. D., secretary.

New York Neurological Society.—At a meeting of this society, held on Tuesday evening, April 7th, Dr. N. E. Brill presented a memorial of Dr. E. C. Spitzka, and Dr. Theodore H. Kellogg presented a memorial of Dr. Ralph L. Parsons. Dr. J. Ramsay Hunt presented a preliminary report relating to chronic progressive tremor, and two papers were read as follows: Psychoses among Jews, by Dr. A. A. Brill and Dr. M. J. Karpas, discussed by Dr. M. S. Gregory, Dr. A. Hoch, Dr. G. H. Kirby, and Dr. William Mabon; The Autonomic Reciprocal Activities of Brain and Viscera, by Dr. Walter Timme. The next meeting of the society will be held in June, the May meeting being omitted.

Psychopathic Wards at Blockley.—Changes are being made in the section of the Philadelphia General Hospital in which suspected cases of insanity are temporarily confined. This includes an equipment of at least 140 beds, and a system of treatment that will enable the patients to return to their homes, under the supervision of social workers, instead of being sent to an asylum for the insane. Under the old system, committing physicians simply made an examination of the patients referred to them, and prepared papers for their commitment and admission to asylums. Hereafter the future of the patient is to be taken into greater consideration, and every effort made to maintain the home life of the individual under observation.

New York Polyclinic Medical School and Hospital.—During the week of the meeting of the International Surgical Congress there will be the following special lectures and clinics by International authorities for the general medical public. Admission by presentation of professional card.

1. Tuesday, April 14th, 11 a. m. to 1 p. m., Internal Photography as an Aid to Diagnosis, Illustrated, by Alfred C. Jordan, M. D., Cantab, M. R. C. P., Medical Radiographer, Guy's Hospital and Royal Hospital for Diseases of the Chest, London. 2. Wednesday, April 15th, 11 a. m. to 1 p. m., Hypothyroidism, Lecture and Demonstration, with Stereopticon Pictures, by Dr. E. Hertoghe, Member of the Royal Academy of Medicine, Belgium. 3. Thursday, April 16th, 11 a. m. to 1 p. m., Surgery of the Heart and Lungs, Lecture and Demonstration, by Benjamin Merrill Ricketts, M. D., LL. D., of Cincinnati, Ohio. 4. Friday, April 17th, 11 a. m. to 1 p. m., Treatment of Fractures, Clinic and Demonstration, by Dr. Ablin Lambotte, Surgeon in Chief to the Stuivenberg Hospital, Antwerp.

John A. Wyeth, M. D., LL. D., President.

Committee of the Faculty:
William Seaman Bainbridge, M. D.
John A. Bodine, M. D.
Alexander Lyle, M. D.

Neurological Clinics at the Kings County Hospital.—During the months of April and May a series of neurological clinics will be given at the Kings County Hospital, on Saturday mornings, at eleven o'clock, by Dr. Arthur C. Bush, assisted by Dr. Cecil MacCoy. The subjects covered at these clinics are as follows: April 4th, General Diagnostic Methods, Types of Paralysis; April 11th, Peripheral Nerves Paralysis, Types of Neuritis; April 18th, Spinal Cord Diseases—Systematized; April 25th, Spinal Cord Diseases—Nonsystematized; May 2d, Functional and Mixed Cases; May 9th, Diseases of the Brain—Aphasia, etc.; May 16th, 23d, and 30th, Diseases of the Mind, at Long Island State Hospital, by Dr. E. M. Somers, medical superintendent.

Scarlet Fever at Dongan Hills.—Scarlet fever has been quite prevalent at Dongan Hills, Staten Island, since the end of January, 1914. Thirteen cases have occurred during February and twelve during March; four cases have occurred during the present month. The responsibility for the increased number of cases of this disease probably rests with the parents of certain children, who failed to summon a physician and permitted their children to return to school while the latter were still in an infectious condition, capable of transmitting the disease. Some time later the cases were recognized as scarlet fever by the physicians of the department of health and the children were excluded from school, but the damage had already been done. The department now has the situation well in hand.

Personal.—Dr. L. D. Bristol, of the College of Medicine of the Syracuse University, has been appointed director of the public health laboratory of the University of North Dakota, succeeding Dr. G. F. Ruediger.

Dr. John W. Colbert, of Albuquerque, New Mexico, has been requested by the Rockefeller Foundation to take charge of the research work in a campaign to be inaugurated for the eradication of hookworm disease in Central and South America.

Dr. Cressy L. Wilbur, chief statistician of the United States Bureau of the Census, has been assigned to take charge of the new division of vital statistics in the New York State Department of Health now being organized by Dr. Hermann M. Biggs, State Commissioner of Health.

Dr. Russell M. Cunningham has been elected health officer of Birmingham, Ala.

Seventh International Congress of Medical Electrology and Radiology.—This congress will be held at Lyons, France, under the auspices of both national and municipal governments, July 27th to 31st. Membership tickets are 25 francs and entitle the holder to a discount of fifty per cent. on all railroad fares while in France; a money order for that amount should be sent to the secretary-general, Doctor Cluzet, 282 avenue de Saxe, Lyons. Professor J. Renaut, of Paris, is president. The program for this congress is as follows: 1. Ionotherapy; 2. Action of High Frequency Currents in Surgical Tuberculosis; 3. Clinical Electrocardiography; 4. Action of X Rays on the Photographic Plate; 5. Delayed Cutaneous Phenomena in Radiotherapy; 6. Protection of the X Ray Operator; 7. Therapeutic Effect of Radium Emanation.

The Barcelona Prize, which was not awarded at the last congress for want of a meritorious apparatus, will be presented at this congress if a satisfactory one is forthcoming. One thousand francs will be awarded to the apparatus fulfilling the following conditions:

1. In all measures of excitation the method of discharges from condensers must be used, as alone being characteristic of excitation and susceptible of comparison with one another.

2. To obtain this comparison of results, experimenters must use a negative electrode of 100 square cm. area, and a positive electrode of one square cm.

3. Experimenters must determine for each pole, the constant of quantity, constant of intensity, and constant of time.

4. The makers must supply their apparatus with four condensers, having respective capacities of 10, 1, 0.1, and 0.01 microfarads, and of intercalary resistances of 1,000 to 2,000 ohms.

Candidates must be members of the current congress and have their machines, before July 10th, at the Laboratory of Physics, Faculty of Medicine, 18 quai Claude-Bernard, Lyons, marked *Concours pour le Prix de Barcelone*.

Pith of Progressive Literature.

CORRESPONDENZ-BLATT FUR SCHWEIZER AERZTE.

Mendel's Law of Heredity in Two Families with Syndactylia.—Carl Schlatter found nineteen cases of syndactylia in thirty-three members of one family in the course of four generations. In this family the transmission of the deformity seemed to conform to Mendel's law. In the second family of sixty-one members, Mendel's law seemed to be less operative in the fourteen members affected. The syndactylia was complicated also with brachydactylia and hyperdactylia.

ZENTRALBLATT FUR CHIRURGIE.

Phenolcamphor Treatment of Chronic Joint Diseases.—Felix Pohl reports two cases of joint disease treated with injections of phenolcamphor into the joint. Both showed the danger of injecting the solution directly into the circulation, or into the vascular spongy tissue. It must be made only into the joint itself, and for this reason it is better to confine its use to the larger joints. He is inclined to think that alcohol is the efficient agent and now employs the following formula: Carbolic acid 30 parts, camphor 10 parts, alcohol 30 parts, and instead of injecting two c. c., he uses 0.25 to 0.5 c. c. In streptococcal infections the larger dose is necessary.

Afterpain of Local Anesthesia.—F. Honigmann says that of 588 patients operated on under local anesthesia thirty-two per cent. had no afterpain, forty-three per cent. had slight, moderate, or bearable pain, and the remainder, twenty-five per cent., suffered from severe pain of longer or shorter duration. This pain is met with only when the operation was performed on inflamed tissues, or on parts that were tense, or particularly rich in nerves Women are rather more subject to it than men. To ward off this afterpain, he injects a small dose of morphine before starting the anesthetization, when about to operate on acutely inflamed tissues, or when for any other reason he anticipates that such pain will follow. In aseptic cases it is rarely necessary to repeat the injection toward evening. In ambulant practice he prescribes a mixture of morphine and aspirin, or pyramidon in two powders, one to be taken as soon as the pain appears, the other if needed later for sleep. Aspirin or pyramidon alone is given when pain is not to be expected.

Formation of a Valve in the Bladder for the Escape of Ascitic Fluid.—Paul Rosenstein reports a case in which, after an unsuccessful anastomosis of the vena porta and the vena cava inferior, for ascites due to cirrhosis of the liver, he made a valvular opening into the bladder, through which the ascitic fluid drained, and was voided with the urine.

LYON MÉDICAL.

Right Sided Cardiac Hypertrophy and Chronic Asphyxial States.—J. Bret discusses the relation of various diseases to the weight of the cardiac auricles and ventricles, to that of the kidneys, to the size of the cardiac orifices, as noted in post mortem studies. Stress is laid on a form of hypertrophy of the right heart associated with chronic pleuropulmonary lesions; this hypertrophy is especially marked where there is a chronic asphyxial tendency and weakness of the left heart. Atheroma of the pulmonary artery and venous congestion are factors in the right sided hypertrophy, but to them may be added the influence of the secretions of certain glands, e. g., the adrenals.

PARIS MÉDICAL.

Stones in the Skin.—G. Milian refers to the deposition of hard calcareous matter in the skin and subcutaneous tissues. In the localized form the lesion consists of single abscess or gumma with whitish creamy content of numerous calcareous granules; such a lesion may be mistaken for a syphilitic gumma. In the generalized form abscesses or concretions occur in large numbers in the skin, especially in certain areas of election. In a case reported by the author, occurring in a woman sixty-seven years of age, there was a large pseudogummatous lesion in front of the left patellar ligament, together with numerous granular concretions in the fingers, a single concretion the size of a pea in one lung beneath the clavicle, and a hard plaque surrounding the olecranon, apparently situated in the olecranon bursa. Histological study showed little or no fibrous tissue in the skin over a concretion, but the elastic tissue had undergone a marked increase, so pronounced in spots as to form actual plates of this tissue. Capillary dilatations were also noted, with formation of giant cells from the endothelium and calcareous precipitation in the vascular lumina.

PRESSE MÉDICALE.

Gastric Cancer of Intestinal Type.—R. Grégoire and P. Masson point out that in a large proportion of cases of gastric cancer the tumor presents histological characteristics indistinguishable from those of cancer of the intestine. This similarity suggests a common origin for tumors in these two situations. As Jouvenel, Weber, Lubarsch, and others have shown, there exist normally in the mucosa of the pyloric vestibule intestinal islets consisting of typical glands of Lieberkühn. The authors think it not improbable that the majority of gastric cancers originate in such intestinal inclusions in the stomach or in metaplastic foci of intestinal tissue in the same organ. The history of an illustrative case, with histological reproductions, is given.

Anterior Subperitoneal Nephrectomy.—L. Bazy advocates and has employed with success in certain cases an anterior, almost transverse incision, extending from a point slightly below the palpable ex-

tremity of the eleventh rib toward a point midway between the xiphoid and the umbilicus. Such a procedure permits of avoiding incision of the peritoneum and affords ready access to the renal hilum. The patient's trunk should be in hyperextension, a cushion being placed beneath the dorsolumbar region. The incision should not be made boldly, but layer by layer, peeling off of the parietal peritoneum from overlying tissues being carefully begun as soon as it is reached. Internally, the incision usually need not be extended to the midline, the sheath of the rectus being entered alone, without section of the muscle. All steps of the operation on the kidney can then be executed under direct visual control, instead of blindly, as in the lumbar operation. Whereas for operations on the convex margin of the kidney (nephrotomy, nephropexy) the lumbar route is suitable, all operations demanding ready access to the hilum should be performed through the anterior incision. The author has employed the latter route for the removal of large renal tumors as well as for renal suppuration and especially tuberculosis. In secondary nephrectomy the anterior route would seem advantageous in affording access to the kidney outside the zone of cicatricial deposit. It is also useful for pyelotomy and in cases where the kidney cannot easily be drawn down or where marked narrowness of the costoiliac space prevents sufficiently delicate manipulation through a lumbar opening.

Disinfection of Stools.—Arnould, discussing the various chemical disinfectants, calls special attention to the value of copper sulphate. Vincent has shown that typhoid bacilli can be killed in twenty-four and even twelve hours by adding six or seven grains of copper sulphate to one litre of stools. Cholera organisms are killed by even less. The rapidity of action of the copper salt can be increased by the addition of sulphuric acid, five per cent., the typhoid bacilli being destroyed in one hour. Chlorinated lime comes next in efficiency. Typhoid bacilli can be destroyed in seven to twenty-four hours by adding 150 grams of a one to twelve solution of chlorinated lime to one litre of liquid feces, and a still better effect obtained by supplementary addition of one per cent. of hydrochloric acid. Combined use of cresols and sodium hydrate for disinfection of solid stools does not appear to give trustworthy results. This end may be attained, however, with Kaiser's procedure, which consists in placing over the stool about 250 grams of quicklime broken into pieces the size of a walnut, pouring into the receptacle about one litre of water at 60° to 65° C., and closing the container tightly. The liberation of heat resulting from slaking of the lime will keep the fecal mass at a temperature of over 60° for at least an hour, which is sufficient to destroy typhoid, cholera, and dysentery organisms.

New Method of Reinforcing the Inguinal Canal.—L. Moreau's procedure, after resection of the hernial sac, consists in opening the sheath of the rectus near its external border, suturing the conjoint tendon to the iliopubic fibres (Bassini's technic), separating a strip of the rectus muscle two cm. broad (leaving, however, its pubic attachment), fixing this strip at four points in front of the line of Bassini sutures, next suturing the internal border of the sheath of the rectus over the external margin of the aponeurosis of the external oblique, and finally suturing over all the internal portion of the aponeurosis of the external oblique. Four supporting muscular or fibrous layers are thus afforded.

REVUE MÉDICALE DE LA SUISSE ROMANDE.

February, 1914.

Medical Experiences in the Balkan War.—R. E. Bourquin asserts that at least thirty per cent. of bullet wounds among Servian troops became infected, and shrapnel wounds almost invariably. There should be available at the firing line not only an aseptic dressing, but also antiseptics; and even more essential is compulsory bathing, frequent changing of underwear, and weekly disinfection of the clothes whenever practicable. Mastisol, a species of collodion causing the dressings to adhere and fixing the bacteria present, used in conjunction with tincture of iodine, is recommended for first aid treatment. Hydrogen dioxide, according to Bourquin's experience, presents many advantages over other antiseptics and detergents; shrapnel wounds were successfully treated by alternate use of the dioxide and balsam of Peru. Experience with the question of amputation led to the following rule: Do not amputate as long as there is the least hope of saving the limb; amputate at once, however, when signs of septicemia begin to appear. Among medical patients were a number of exhausted men presenting slight fever, pain in the lower limbs and kidney regions, marked general weakness, and slight dilatation of the left heart. These patients recovered completely after resting four or five days, and taking 0.5 gram of digitalis infusion, with rubbings of the back and limbs with camphorated whiskey. Two doses of 0.4 gram of salvarsan proved specific in relapsing fever. Not a single case of cholera occurred among the Greek troops that had been given two prophylactic injections of serum, whereas the Servian troops, not immunized, suffered heavily from this disease.

Antipneumococcic Serum in Grave Pneumonia.—E. Thomas reports a case of exceptionally pronounced pneumococcic infection in a boy of eleven years, both lungs becoming involved gradually, bilateral otitis with perforation following, and high fever continuing for twenty-four days. One and more injections of ten c. c. of Kolle antipneumococcic serum were given daily for a week, beginning on the seventeenth day of pyrexia. Although only a slight effect on the temperature was noted, there was marked betterment in the condition of the lungs and general state during this period. The use of the serum in similar grave cases seems definitely indicated.

Serum Intoxication.—P. Gautier received a prophylactic injection of five c. c. diphtheria antitoxin in 1902, without any untoward effects. In 1913, antitetanic serum was taken, according to Besredka's method, *i. e.*, one c. c. injected one morning and ten c. c. the same afternoon. Six days later general

urticaria appeared, followed in the night by nausea, and cold sweats. Calcium chloride, 1.5 grain, had been taken daily for four days after the injections without prophylactic effect.

ROUSSKY VRATCH.

December 28, 1913.

Bacteriology of Appendicitis.—M. P. Izabolinsky presents results of a bacteriological study of fifty appendixes. In forty-three cases the colon bacillus was found, either alone (seventeen cases) or in conjunction with other microorganisms; in twenty-one cases staphylococcus albus; in fifteen together with the colon bacillus. In ten cases staphylococcus aureus was isolated, together with the colon bacillus in seven, and other organisms in three; and in six the pneumococcus together with other organisms. In three cases the pyocyaneus bacillus was apparently the sole etiological factor. In two cases of gangrenous appendicitis the tubercle bacillus was detected. In five cases the eggs of Ascaris lumbricoides in the lumen of the appendixes, and in three those of Trichocephalus dispar. The author concludes that the etiology of appendicitis is varied: the disease may be caused by diverse microorganisms, and while the colon bacillus is more or less constantly found, it is not an etiological factor. The presence of staphylococci would suggest a connection between appendicitis and sore throat.

January 4, 1914.

Action of Poisons on the Venous System of the Heart.—N. P. Kravkoff studied the effect of several toxic drugs on the peripheral vessels and on the veins of the isolated heart of rabbits. During the experiments the heart was paralyzed by interfering with its nutrition, or by strophanthin, so as to prevent the effect of the heart's action on the veins. The following substances were employed: Adrenaline, histamine, tyramine, nicotine, pilocarpine, atropine, barium chloride, caffeine, and theobromine. Adrenaline does not apparently constrict the veins and in the majority of instances causes dilatation. Caffeine and theobromine cause marked dilatation of the veins. Histamine, tyramine, nicotine, pilocarpine, and barium are active vasoconstrictors. Judging from the results of the experiments, it is apparent that the sympathetic nervous system of the veins of the heart contains principally vasodilating fibres.

Detection of Typhoid Bacillus in Water.—G. D. Bjelonovsky isolated typhoid bacilli in polluted water by adding typhoid serum to two litres of water and making cultures from the sediment which contained the agglutinated bacilli.

BRITISH MEDICAL JOURNAL.

March 7, 1914.

The Art of Prescribing.—Arthur P. Luff opens his paper with the following: "The decline in the art of prescribing is a subject which has given me cause for much painful reflection for several years, and it is one which, in my opinion, affects very closely the welfare of the public as well as the usefulness and dignity of the medical profession. I think there cannot be the slightest doubt that the art of practising—that is, of ordering suitable remedies in suitable forms for the treatment of morbid conditions—is declining, and that this very important function of the medical man is being replaced by what I consider to be the slovenly habit of writing an order for some proprietary preparation or for some compressed form of drug, and then dignifying such an order with the title of a prescription. There is, I think, a tendency at the present time, in this era of brilliant discoveries in medicine, pathology, and bacteriology, and in this age of splendid advances in surgery, to neglect the treatment of common and minor ailments by drugs." It is from just such attention to minor ailments that the young physician becomes established in practice. Luff condemns the modern tendency to undervalue drugs in the treatment of disease, and calls attention to the fact that in private practice one will very seldom have either occasion or opportunity to use serums, vaccines, and the like, but will measure his success by the skill with which he handles a small number of drugs. He believes that part of the blame for this state of affairs—that is, ignorance of how to use and prescribe drugs—should fall on medical college teachers; much of the rest is referable to the pernicious use of hospital formularies. With these latter the young man has no chance to learn skillful prescribing; though he may use independently constituents of the named or numbered prescriptions, this is something which he seldom practises. He therefore has had no opportunity of acquiring confidence in his own ability to write a correct and useful prescription.

LANCET.

March 7, 1914.

Technic of Sclerocorneal Trephining.—R. H. Elliot has performed this operation in over a thousand cases of glaucoma, and seeks to make the details so clear that the method will be widely adopted by practitioners on the eye. Under most conditions trephining should be done in the upper quadrant of the eye because: 1. The wound is not so exposed to infection; 2, if an iridectomy is performed it lies under cover of the upper lid; 3, the conjunctival flap seldom needs a stitch here; 4, the space is greatest above. Under certain conditions, however, it is not possible to operate in the upper quadrant, as when the patient persistently keeps the eyes rolled upward, when a staphyloma is present which involves the upper portion of the cornea, in chronic cases when the chamber is shallowest above, or where synechiae are present causing a shallow upper portion of the chamber. A conjunctival flap is cut, beginning as high up on the bulb as possible, the incision running nearly concentric with the limbus, ending at either side at the highest point of the cornea, and about eight mm. inside its margins to either side. The whole area included in the flap should not be dissected free from the sclera, but the attachment with connective tissue at the angles should be left, affording a ligamentlike action when the flap is replaced. This also usually obviates the necessity of a suture. The sclera should be bared in the last few mm. toward the limbus, and the area for trephining must be completely freed

from all tags of tissue. The next step, after the exposure has reached the limbus, is to split the cornea, not cut it, beginning just behind the line of the flap where it ends at the limbus, thus extending the flap by peeling off the outer layer of the cornea with it. The sharp trephine is then placed on the corneoscleral surface so that its edge will just clear the lower margin of the flap, and it is made to cut through the cornea slightly in advance of the sclera, so that when the cutting is completed the flap of sclera will be hinged by a fragment of sclera above. There is usually a prolapse of the iris, and this, together with the flap of sclera, is cut off with the scissors, completing an iridectomy. After returning the iris and irrigating the wound with sterile saline, the conjuctival flap is replaced by a stroking motion with some smooth instrument, such as a spoon, the eye is closed, and both eyes are covered with aseptic pads and bandaged.

Nature of Rodent Ulcer.—H. G. Adamson holds that "true carcinoma, in whichever situation, is the result of a disturbance of the normal balance of growth between epithelial and adjacent tissues as the result of previous damage, and there seems to be no need to invoke the aid of embryonic cell rests or of microbic invasion. In rodent ulcer, on the contrary, the growths arise, not in areas which have been the site of previous damage, but in regions where benign growths of similar structure and admittedly nevoid nature are known to occur. Rodent ulcer, moreover, does not occur on mucous membranes. Although it destroys subjacent tissues, it does not invade the lymphatic spaces." Gland invasion, metastases, and disturbance of the general health are also absent from rodent ulcer. Both rodent ulcer and the benign nevoid growths known as Epithelioma adenoides cysticum of Brooke, "are epithlial growths derived from those cells of the basal layer of the epidermis which are normally destined to become pilosebaceous follicles; in one word, both are trichoepitheliomata. They differ mainly in that the rodent ulcer tumors appear late in life and tend to ulcerate, while the benign form appears in childhood and does not ulcerate." The histological characteristics of the two affections are quite similar. "Rodent ulcer is a delayed attempt to form hair follicles and sebaceous glands in which the effort does not extend beyond mere proliferation of those cells which at an early age would have become differentiated into these special organs. It is an illustration of the Cohnheim theory of cell rests."

Etiology of Endemic Cretinism.—Robert McCarrison's previous experiments led him to the opinion that the causative or exciting factor, or factors of goitre existed in the intestinal canal of the sufferers, and his present observations are the results of feeding rats on fecal extracts from goitrous patients, or on food contaminated with either aerobic or anaerobic cultures of the intestinal flora of such patients. He obtained the following results: 1. Of sixteen animals born of a goitrous parent which ate fecal filtrate prior to and during pregnancy, three were born cretins. 2. Of thirty-one animals born of goitrous mothers which consumed either fecal anaerobes or the filtrate of a fecal emulsion, fifteen had congenital parathyroid disease, and of these two thirds were born of mothers taking anaerobic cultures, one third of those taking a fecal filtrate containing the toxic products of these anaerobes. His conclusions are: 1. Of the offspring of goitrous parents a small percentage are born cretins, approximately sixty-three per cent. are born with congenital goitre, thirty-two per cent. are born with congenital parathyroid disease, and thirty-three per cent. are born with normal thyroid and parathyroid glands. 2. Cretinism and congenital goitre are due to the action of toxic substances derived from the intestines of the goitrous mother on the fetal thyroparathyroid mechanism. Cretinism represents the maximum, and comparatively rare effect of these toxins; congenital goitre their minimum, and comparatively common effect. Between these extremes all degrees of thyroid involvement may occur with or without associated swelling of the gland. 3. Congenital parathyroid disease is due to the action on the fetal gland of the toxic products of organisms, present in the intestine of the goitrous mother, which are capable of growth under anaerobic conditions.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

March, 1914.

Treatment of Tabes dorsalis and General Paresis with Salvarsan.—Gordon Bates, George S. Strathy, and C. S. McVicar have treated ten cases, six of tabes and four of paresis. Improvement took place in all the tabetics. Where lightning pains existed they were distinctly lessened or disappeared altogether. Eye reflexes became normal in several cases. Bladder symptoms disappeared in one case, and sexual power returned in another. Locomotion and mentality improved. In practically all, physical well being, weight, and general appearance were better after treatment than before. The results in the four paretics were not so encouraging. They are of the opinion that parasyphilis is syphilis; a classification of the two as separate diseases is artificial and unnecessary. Tabes dorsalis can be greatly improved by treatment with salvarsan, some cases can apparently be cured. Results in general paresis warrant active treatment of all early cases; a cure may be possible. The best results in both tabes and paresis are obtained from intensive treatment, i. e., one or two full doses a week.

BOSTON MEDICAL AND SURGICAL JOURNAL.

Tragic Aspects of Whooping Cough.—Philip H. Sylvester appropriately remarks that whooping cough, with a mortality of about seven per cent., and a toll of ten thousand in the United States annually, presents an appalling contrast to the layman's and the average physician's idea of its harmlessness. He reports eight cases, three in full detail; seven were fatal, and one patient lived, but required unremitting care for a year and a half, at the end of which time she presented no great promise of physical or mental development. He urges us to remember that these are only eight cases of ten thousand similar tragedies last year; that a percentage of them was amenable to prophylaxis, and that another percentage could have been cured by appropriate treatment.

March 28, 1914.

Treatment of Syphilitic Diseases of the Central Nervous System by Intravenous Injections of Salvarsan.—Lesley H. Spooner says that it is possible to treat in a satisfactory manner syphilitic diseases of the central nervous system by intravenous salvarsan in an ambulatory clinic, for which small doses are necessary and effective. He obtained symptomatic improvement in a high percentage of his cases of tabes, and in all of his cases of syphilis of the central nervous system, but not in his few cases of general paresis. Improvement in strength and gain in weight was the rule in those who received benefit; the relief of lancinating pains in tabes, and of headache in cerebral syphilis is most striking. Biological and cytological changes indicate that there is an organic basis to this symptomatic improvement. Improvement has been maintained in some instances from as long as one to two years; the results of laboratory investigation, when obtainable, and the amelioration of symptoms correspond. Failures have been in old cases, but it is impossible to show any constant relation between the degree of improvement and the duration of the nervous lesion. The most striking improvement follows the first or second injection, but treatment must be persistent and should be continued after all symptoms and laboratory findings have long disappeared. Reactions are infrequent with small doses of salvarsan, and accidents are rare. Focal accentuations of symptoms are disagreeable, but of short duration, and are often a hopeful sign. The most pronounced successes are in those who show evidence in blood or spinal fluid of intense syphilitic infection; the failures have occurred in those showing feeble reactions. Phthisis seems worthy of consideration as a contraindication. This treatment might well be advised in all cases of syphilitic disease of the central nervous system, and abandoned for the serum treatment when it has failed after a conscientious effort.

Salvarsanized Serum (Swift-Ellis Treatment) in Syphilitic Diseases of the Central Nervous System.—James B. Ayer says that this method is safe, and effective in many cases in which other treatment has failed. It attacks syphilis from the etiological point of view, thus tending to cure the disease as well as to relieve its symptoms. Its greatest effect is in the group of cerebrospinal syphilis, in which a cure may confidently be looked for with persistent treatment, and in tabes, in which arrest of the disease is often possible,while it is least effective in general paresis, when well developed, though encouraging results may be obtained in the preparetic stage.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

March 28, 1914.

Histogenesis of Multiple Basocellular Carcinoma.—R. L. Sutton concludes, after a study of five cases that the theories of Thiersch and of Cohnheim are not tenable in all cases of cancer. In basocellular carcinoma the tumors spring directly from the basal layer of the rete and are independent of proliferative changes in the corium. An important, if not absolutely essential factor in the etiology of basocellular and prickle cell cancer is a peculiar quality of the skin, either acquired or congenital, characterized by harshness and dryness, with more or less evidence of long standing dry seborrhea. Exposure to sunlight and to atmospheric changes also seems to play an important part in the preparatory degenerative process. The action long continued of the Röntgen rays may give rise to cutaneous changes predisposing to cancer; this predisposition is limited to the area exposed, and does not account for increased susceptibility of the skin in other parts of the body. As to a possible relation between the growths in multiple basocellular carcinoma, it may be that, when the primary lesion is untreated or insufficiently treated, a shower of infectious particles is thrown off, ultimately to lodge at various points in the body; where their subsequent action is entirely dependent upon their new environment.

Radiological Signs of Duodenal Ulcer; with Special Reference to Gastric Hyperperistalsis.—R. D. Carman finds that hypermotility, hypertonus, deformity of the cap or bulb, lagging of bismuth in the bulb, pressure tender point over the duodenum, and spasm of the stomach are minor contributory radiological signs of duodenal ulcer. Hyperperistalsis, a six hour residue, and a diverticulum, when found in an otherwise normal stomach, constitute about the only evidence on which a purely radiological diagnosis of duodenal ulcer may safely be advanced.

Formaldehyde.—H. McGuigan states first that formaldehyde is rapidly absorbed from all parts of the gastrointestinal tract and lungs, and may be excreted again by them. In the body it is quickly oxidized to formic acid and carbonates. In the blood a small amount of a dialyzable compound is formed, probably hexamethylenamine. Small amounts of formaldehyde may pass through the body without causing apparent inflammation, while larger amounts always cause some. Recovery from severe inflammatory reactions may be rapid and apparently complete. Formaldehyde depresses the heart by direct action. Its action on respiration is transient, apparently the result of irritation. It causes a stimulation of the intestinal movements, which is extreme when the drug is given in large doses. The antiseptic action of formaldehyde is apparently due to a final compound. There is nothing to indicate that formaldehyde has a field of usefulness in medicine other than local. Morphine and ammonia are antidotes.

Blood Transfusion: Report of 135 Transfusions by the Syringe Cannula System.—Edward Lindeman states that in no case was there thrombosis, embolism, or sepsis; in no case was anesthesia given; and in none was death due to any untoward effects of transfusion. Blood transfusion is a matter requiring skill, and problems in pathology, physiology, serology, immunity, chemistry, and clinical medicine constantly arise for special study. Every large hospital where such work is done should have on its staff a hematologist who can give to the work the degree of specialization necessary and meet the many incidental problems. Thus accidents will be avoided, a waste of good blood may be prevented, and applications be seen which might otherwise be overlooked. This method opens a new field of therapeutics—a field that will possibly solve some of the

present enigmas in the treatment of disease and saving of life.

Blood Transfusion in Diabetes mellitus.—B. O Raulston and R. T. Woodyatt conclude that in severe diabetes blood transfusion is definitely contraindicated. In a case described by them the transfusion of 500 c. c. of peripheral venous blood from a healthy male donor into the peripheral veins of a brother suffering from severe diabetes had a decided effect on the metabolism of the latter, evidenced by a marked rise in the output of sugar, ammonium, and acetone bodies, and an increased ratio of glucose to nitrogen.

MEDICAL RECORD.

March 28, 1914.

Mental Infantilism and the Tic Neurosis.—L. P. Clark says that in his first study of mental torticollis as a psychoneurosis of the obsessive type, he undertook to show that certain forms, as mental torticollis, were but habit movements. He called attention in a second paper to acute mental torticollis from sexual repression; the tic movement being a physical counterpart, conversion of a hysteria complex, rather than a substitution, as in pure obsessive neuroses. In two cases reported in each of the two papers, the patients had much in common, mental infantilism in adolescence and in later life—in short, they met on the common ground of mental torticollis. In a third paper, he elucidates some features of mental infantilism in its broader aspects, as illustrated in a case of multiple tics, taking a youthful patient for the pattern of genetic values of the several characteristics of infantile life.

Blood Pressure as an Aid to Diagnosis and Prognosis.—A. Woldert states that, from certain recent investigations, it appears that determination of diastolic and pulse pressure and determination of systolic pressure are of almost equal importance. As to blood pressure in heart disease, he quotes the statement that the sphygmomanometer may show evidence of cardiac disease before the development of a murmur, and speaks of the conditions and significance of blood pressure in various heart diseases. During pregnancy the pressure should be frequently taken. Hirst found that one of the earliest and most constant signs of toxemia in the latter half of pregnancy was a continually increasing blood pressure; this symptom preceded the occurrence of albuminuria in cases in which convulsions occurred. At the present time life insurance companies hesitate to accept an adult whose systolic pressure is over 150 mm. or under ninety-five to 100 mm. In abdominal surgery it has been suggested that if the systolic pressure falls below 100 mm. the operation should be stopped and salines used to prevent further shock. Shock during operation or hemorrhage after operation is manifested by a sudden fall in the pressure and increased pulse rate. During ether anesthesia, if the pressure falls suddenly and the pulse rate rises, one should look for danger from further shock. In chronic interstitial nephritis the systolic pressure is persistently high (from 175 to 250 mm.), together with a low diastolic pressure, and these clinical signs are said to be present even before the appearance of albumin or casts in the urine. In the author's experience the sphygmomanometer is of great advantage in the diagnosis of Bright's disease, especially when no microscope is at hand. The sphygmomanometer is of such real merit, that the careful physician in his diagnosis or prognosis of certain diseases, will support his opinion by its means.

The Trail of the Serpent.—G. K. Dickinson says that in early times we find the serpent associated with three prominent professions. The earliest treatment was an amulet made to represent a snake. Medicine, as practised and taught, was amalgamated with religions, philosophies, and magic. Man is today essentially what he was in the early ages. The stubborn facts are that through all these ages medicine has been demonstrating the frailties of the human mind; the qualities imputed to the serpent have traveled through the history of medicine, and we are still biased by personal speculations, deification of therapeutic agents, and undue willingness to employ the mystical. All our medical colleges should have lectures by competent professors in mental philosophy, whose teachings shall be the physician's attitude toward man and the profession; lectures by some divine with brains—not a bigot, but one who comprehends man's deeper nature and can explain it. Let us teach the physician, the nurse, and the public the great value of body efficiency and how best to obtain it; and when this has been accomplished, it may be said that the healing art has come into its own.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

March, 1914

Etiology and Pathogenesis of Bronchiectasis.—C. P. Howard concludes: 1. Bronchiectasis, a not infrequent clinical condition, is too often mistaken for pulmonary tuberculosis. 2. The possibility of a foreign body or syphilitic stenosis must always be excluded as etiological factors. 3. Skiagrams are helpful, but bronchoscopy should be carried out to exclude a foreign body, and to treat possible stenosis of a bronchus. 4. Etiology is manifold, but inflammatory causes are most common. 5. Of various theories, that advanced by William Ewart is the most rational and scientific. It considers a faulty distribution of air space as a predisposing factor common to all cases. The general mechanism of dilatation is found in obstruction in the broadest sense of the word.

Spontaneous Rupture of the Spleen in Typhoid Fever: Cure by Operation (Splenectomy).—L. A. Conner and W. A. Downes consider this accident sufficiently rare to warrant report, more especially as in this instance it was possible to make the diagnosis and, by prompt operation, save the patient's life. Only twelve other cases are recorded in literature. In nine the condition was discovered at autopsy. In the other three it was found in the course of operation for supposed intestinal perforation, and none of the patients recovered. The authors' case was a man, aged thirty-six years; on the thirteenth day of typhoid there appeared a sudden and startling change in his appearance and general condition. The diagnosis of ruptured spleen was made by considering the location of the pain, tenderness, and muscular rigidity, by the absence of signs pointing toward other likely complications, and by the fact

that the spleen had been recognized as being unusually large and tense for the early days of typhoid fever. In spite of apparently inconsistent blood findings, an exploratory operation was undertaken, and it was found that rupture really had occurred; the spleen was removed.

Pathology of the Thyroids in Toxic Nonexophthalmic Goitre.—L. B. Wilson states that: 1. Pathology of the thyroid in true exophthalmic goitre is essentially a primary parenchymatous hypertrophy and hyperplasia, i. e., an increased amount of functioning parenchyma associated with an increased absorption. The process is acute. 2. Pathology of atoxic simple goitre is marked essentially by atrophic parenchyma, decreased function, and decreased absorption. The process is chronic. 3. Pathology of toxic nonexophthalmic goitre of clinical group two (those resembling exophthalmic goitre) is one of increased parenchyma, through regenerative processes in atrophic parenchyma or the formation of new parenchyma of the fetal type, with an increase, in each instance, of secretory activity and absorption. The process is chronic, but sufficiently active to cause the patient to consult a surgeon earlier than do patients in clinical group one (those in which the symptoms are of the cardiovascular variety). 4. The nearer the cases in clinical group two (toxic nonexopthalmics) approach, in age and symptoms, true exophthalmic goitre, the shorter the duration of the period of goitre before operation, and the smaller the average weight of the gland at the time of removal. 5. Cases of toxic goitre of clinical group one resemble cases of simple goitre much more closely in their pathology, in all respects, than do the cases of group two. 6. Finally, all this pathological evidence points to a constant relative association of increased secretion and absorption from the thyroid proportional to the degree of toxicity on the part of the patient. We have as yet no absolute proof that the secretion and the absorption are the cause of, rather than coordinate with, the symptoms; but the evidence points strongly to that conclusion.

Renal Function: Prognostic Value of Studies of Renal Function.—L. G. Rowntree states that the clinical diagnosis in any individual case being made, before offering a prognosis, certain problems must be investigated: 1. What pathological condition underlies the clinical picture? 2. Is the condition confined to the kidney, or is any other system involved or likely to be involved? 3. What is the functional capacity of the kidney? 4. Is the condition amenable to treatment or not? As to the prognostic value of renal functional tests, he says that employment of one test alone does not always yield all the information desirable. When only one is used, the phthalein test for general use under all conditions is undoubtedly the one of choice. When it reveals decreased renal capacity, blood tests, tests of urea, total incoagulable nitrogen, or cryoscopy, should be employed to determine the presence or absence of cumulative phenomena. The iodide and salicylate tests are not of great prognostic value; lactose is unreliable; urinary urea is of value only in relation to unilateral renal disease; phloridzin has a tendency to exaggerate the degree of functional injury, and hence is not of great value.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN

Ovarian Pregnancy, with Report of a Case.—Caturani reviews in some detail the arguments for and against the possibility of ovarian gestation. The great difficulty in diagnosis lies in the fact that such cases are seldom obtained at a sufficiently early stage to allow of a satisfactory microscopical examination. The author believes that inflammations of the ovary, especially perioophoritis, are the most probable causes of ovarian gestation. The resistance of ovarian tissue to rupture by the ripening follicles and the subsequent formation of cystic conditions are familiar. It is quite possible that the opening in the mature follicle may be insufficient to allow the passage of the ovum. As to symptomatology and clinical diagnosis, ovarian gestation does not offer any special interest; it no wise differs from tubal ectopic. Caturani describes at length the gross appearance and microscopical findings of the specimen obtained in his case.

Colon Bacillus Infections of the Urinary Tract in Women.—Furniss believes that by far the greatest percentage of infections of the urinary tract in women are due to the colon bacillus. Fully ninety per cent. of the cases seen by the author showed the colon bacillus in pure culture. Although many observers contend that the ascending infections predominate in women, on account of the short urethra, yet equally competent authorities believe that most of these cases are hematogenous. The author believes also that most cases of cystitis are due to the colon bacillus and are secondary to a hematogenous infection of the kidney, and that, in many of these infections, the bladder symptoms are the first and only ones to appear. This view has been confirmed by obtaining perfectly clear urine from the kidney where there was an acute cystitis, but the urine on culture showed the colon bacillus.

Colon Bacillus Infection of Uterus, Tubes, and Ovaries.—Foskett reports that during the past three years, thirty-four cases of colon bacillus infection have been found in one service at Bellevue. Thirteen of the thirty-four were complicated with pregnancy or the puerperium. Cases are also reported of infection of cysts of the ovary, of the Fallopian tubes, and of the blood. Foskett believes that the gonococcus, the streptococcus, and the staphylococcus are not the only organisms to look for, when fever is present, in a gynecological or obstetrical patient. In his hospital service he now has made a culture of the urine in all cases.

Present Status of Fibroids of the Uterus.—Schoenberg briefly reviews the statistics as to fibroid tumors and takes up the question of Röntgen therapy. He admits disagreements in relation to its value and gives a summary of his reasons for opposing the method. He considers that the majority of so called cures are only cessation of symptoms, such as amenorrhea, oligomenorrhea, and relief from pain. Another factor against the use of the rays, especially in young women, is the damage done to the ovaries. It has been shown that even small doses permanently injure the ovarian follicles. On the other hand, the splendid results fol-

lowing hysterectomy and myomectomy in the hands of competent gynecologists, the possibility of treating other structures that may be involved at the time of operation, and the conservation instead of the destruction of the ovaries, are strong arguments for removal and against irradiation treatment.

ARCHIVES OF OPHTHALMOLOGY

Cultivation of So Called Trachoma Bodies.—H. Noguchi and Martin Cohen have come to view these bodies as a definite pathogenic organism, holding that its occasional occurrence in gonorrheal conjunctivitis was a coincidence which could not be explained by transformation of the gonococcus into trachoma bodies; nor could the two etiological factors operate to produce trachoma. They arrived at this conclusion when they succeeded in cultivating the organism outside of the body, thereby proving that it was actually living. They give a description of the manner of cultivation. The organism was isolated from conjunctivitis with inclusions of the trachoma bodies, and trachoma cases without inclusions. It was not found in other forms of conjunctivitis without inclusions. It presents the characteristic morphological features of trachoma bodies, which undergo various transformations at different stages of culture. Inoculation of monkeys proved negative, while in other suitable animals the inclusions could be produced by direct inoculation of human trachoma without cell inclusions; hence the possibility of the organism being present in such cases of trachoma, although not in the form of cell inclusions. Trachoma bodies and gonococcus infection are therefore totally distinct, but whether the former and the isolated organisms are identical cannot yet be positively stated.

INTERSTATE MEDICAL JOURNAL.

Transmission of Typhoid Fever.—C. L. Overlander says that every case of typhoid comes from a previous case, either directly or indirectly, which has done much to stimulate research in the modes of transmission, and from this alone its control would seem to be a very simple matter. Avenues by which it is carried are numerous, and sometimes of such indirect character as to point suspicion entirely in the wrong direction. He takes up in succession the transmission of typhoid by water, milk, typhoid carriers, insects, dust, fabrics, and contact. In regard to the last, he states that up to three years ago it very rarely happened that a year passed without one or more cases of typhoid occurring among nurses or ward attendants in all the larger hospitals, and a statistical study revealed that persons in attendance on patients ill of typhoid were eight times as likely to become infected as persons not associated with typhoid cases. At the Massachusetts General Hospital no case of typhoid has developed within the hospital among the nurses during the last three years, and this is attributed to the extensive preventive inoculation which has been carried on. The author believes that in vaccination we have a most valuable means of prevention.

Mastoiditis.—W. S. Tomlin states there is reasonable doubt whether mastoiditis begins independently, except from trauma, a doubt supported by many high in authority. He describes the causes, symptoms, and signs of the disease. Transillumination, especially in young and acute cases, may set the diagnosis of suppurative mastoiditis or its absence beyond doubt. This may be done in a dark room by placing the light on the mastoid process and inspecting the posterior wall of the external canal through a speculum, or a Mosher light carrying speculum may transfuse the light from within outward, or any small cold incandescent light may answer the purpose. This method and radiograms are confusing in sclerotic cases; bacteriemia may be a means of settling our diagnosis if other conditions can be excluded. In acute otitis, before formation of pus, prompt free incision of the drum may prevent involvement of mastoid cells; or, if we arrive on the scene too late for this, freely enlarging a small perforation, or extending one to the floor of the external canal, may so improve the drainage that the chain of continuation will be cut. We should unquestionably recommend every patient with a discharging ear to accept treatment, and in ameliorative treatment asepsis is *sine qua non*. Subacute cases are sometimes modified by Credé's ointment or mercurial plasters, and the incandescent lamp has some advocates. The ultimate resort, which should be the first when the patient is seen, is operation. Acute mastoiditis, or an exacerbation of a chronic one which shows antral bulging, periostitis, or characteristic signs of labyrinthine or intracranial complication, demands prompt operation.

LONG ISLAND MEDICAL JOURNAL.

Subcutaneous Injection of Magnesium Sulphate.—LeGrand Kerr several years ago noticed that when magnesium sulphate was given by mouth as a laxative it was often followed by considerable depression, particularly if it failed to cause the bowels to move. To test this early observation he subsequently used the drug as a laxative in a number of children, believing that information from them is largely objective, and less subject to question. In nearly every case, magnesium sulphate was followed by more or less marked depression, which he believes was due to the drug. Recently he has used it in two cases of tetanus. In the first, the patient was in the last stages of the disease. Four ounces of the twenty-five per cent. solution were injected subcutaneously to control spasm. Within twenty minutes, the child's muscles began to relax and in less than one hour he was resting with apparent relief flat upon his back in the bed. But the difficulty was that this relief continued beyond the point of ease and the muscles of respiration ceased to work for a considerable period before circulation failed entirely. The child apparently died from respiratory paralysis in less than two hours after the initial injection of the sulphate of magnesium. The second was a case of chronic tetanus in a child, and two ounces of the same strength solution were given subcutaneously with marked general relaxation of the muscular tone. On the following day the spastic condition was greater and the dose was repeated with a similar

result, to which was added a very marked condition of weakness. Twenty hours later a third dose of two ounces was given with the result that the child promptly went into collapse and died of respiratory failure. As a result of these two experiences and the previous observations of the action of magnesium sulphate when given orally to children, Kerr says. ". . . we feel strongly that sulphate of magnesia is not without real danger as a general depressant to the muscular system and may have some direct effect upon the cerebral centres."

NEW YORK STATE JOURNAL OF MEDICINE

March, 1914.

Intravenous Use of Paraldehyde.—G. Kirby Collier has obtained in cases of epilepsy excellent results by this method of giving paraldehyde. The drug has no depressing effect on the heart or lungs, it is reasonably safe, its sedative effects are not preceded by a period of excitation. He employed paraldehyde in amounts varying from seven to twenty-two c. c., and in every case obtained marked sedative effects which lasted for many hours. The solution used for injection is composed of equal parts of paraldehyde and ether diluted with cool sterile water, or a cool one per cent. saline solution. The injection is made very slowly into one of the arm veins, usually without having to incise the skin, and when the patient begins to pass under the influence of the drug the injection is stopped. No ill effects have been observed.

Streptococcic Throat Disease.—Halsey J. Ball says that from April 23 to May 7, 1913, there were 554 cases of this affection in the city of Cortland with a population of 11,500 and its adjacent village of Homer with a population of 2,695. A careful study of the infection showed that it was attributable to milk infection, no less than 78.7 per cent. of the cases receiving milk from a single source of supply. The cows of this dealer were examined, and some were found to be suffering from garget or mastitis; the milk contained streptococci which were similar to if not identical with those isolated from the throats in the human cases. Ball gives a full description of the disease, from which the following may be taken. Septic sore throat, epidemic streptococcic glandular throat infection, is an acute specific infectious disease, probably contagious, characterized by sudden onset, more or less febrile action, and general aching with enlargement of a single deep cervical gland next to tonsil, accompanied or followed by more or less redness of the mucous membrane covering the tonsil and its pillars; also the soft palate and uvula in some cases, with or without exudate. The incubation period is from two to three days. The cause is a streptococcus of human or bovine origin, found in milk of cows having garget or mastitis. The disease consists essentially of a septic inflammation of a deep cervical gland with congestion and infiltration of the mucous membrane, especially of the soft palate, and occasionally of the larynx. The onset is sudden, with chills, nausea, vomiting, malaise, headache, backache, pains in the limbs, lancinating pains in a deep cervical gland, a rise of temperature 101° to 104° F.; tongue heavily furred. The patient complains of pain in the neck with little or no soreness of the throat at the onset, followed, in some cases, by increasing redness of the tonsil and its pillars, soft palate, and uvula, which may become markedly edematous. In some there is a grayish or white exudate on soft palate or uvula. In mild cases there may be one or two elevated pinhead pustules or festers on the arch of the soft palate or uvula. Occasionally the inflammation extends to the larynx, giving rise to partial aphonia. The disease is to be differentiated from mumps, quinsy, tonsillitis, diphtheria, Vincent's and Ludwig's anginas. It may be complicated by extension to the other side of the neck, by edema of the throat, extension to serous membranes, producing arthritis, pericarditis, pleuritis, etc., by extension to the skin, causing an erysipelatous inflammation of the face. Prognosis is good in uncomplicated cases, death having resulted in only thirteen of 609 patients. Death was due to peritonitis, pneumonia, erysipelas, and acute edema of the larynx.

Proceedings of Societies

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twenty-sixth Annual Session, Held at Atlanta, Georgia, December 16, 17, 18, 1913.

The President, Dr. JOHN YOUNG BROWN, of St. Louis, in the Chair.

Successful Suture of Stab Wound in Right Ventricle of the Heart.—Dr. JOSEPH DANNA, of New Orleans, summarized the salient points in connection with the case as follows: 1. The whole procedure was very easy and could have been done by any one possessing average surgical ability. 2. The removal of the third, fourth, and fifth costal cartilages and free incision of the pericardium, exposed the heart to full view. 3. Manipulation of the heart was not attended with either shock or pain; the patient talked and felt comfortable during the process of suturing, sponging, etc. 4. The heart moved freely, but could be steadied by forceps or sutures without harm. 5. The placing of the sutures through and through did no harm, although that was also believed. 7. The pleura was opened in getting the proper exposure, an accident which usually happened, but which might have been avoided with care. 8. The heart alternately contracted and relaxed, and during the state of relaxation it felt as soft as jelly. 9. Every wound of the chest, with signs of severe hemorrhage, where the bleeding was believed to be the result of injury to the intercostals, internal mammary, or the heart or its coverings, should be operated upon. If that was done, a life would occasionally be saved, and more reports of suture of heart wounds would find their way into medical literature.

Surgical Repair of Bloodvessels; Technic, Uses, and Limitations.—Dr. J. SHELTON HORSLEY, of Richmond, Virginia, said that sensational newspaper articles had done bloodvessel surgery much harm. Even in animals no organs, such as the kidney, and no limbs had been transplanted with per-

manent success. A transplanted limb remained paralyzed and useless, and while a transplanted kidney might function for a while, it gradually lost its structure. However, bloodvessel surgery had four fruitful fields: 1. Trauma of the vessels; 2, malignant growths that involved the bloodvessels; 3, aneurysms; 4, transfusion of blood. In suturing vessels the same principle of approximating endothelium obtained as in suturing intestines—only the endothelium was on the inside of the vessel, but on the outside of the bowel. So in suturing vessels a flange must be turned out, just as in suturing intestines it must be turned in. Three guy sutures were inserted and attached to buttons on an arterial suture staff of his design. The threaded ends of the last two guy sutures were not cut, but used as a double mattress or cobbler's stitch. The suture staff converted the circumference of the vessel into a triangle and the vessel was held so that the intima was everted in the third that was being sutured. All stitches were placed under the same tension instead of under varying tension as when the sutures were held by hand, and a flange with everted intima was turned out, the intima being accurately approximated by the cobbler's stitch.

Dr. R. H. Hill, of Montgomery, Alabama, stated that his interest in this subject began when he saw a case of a needle stuck in the heart of a little girl. The needle was removed under local anesthesia. The external end of the needle could be seen plainly under the skin with each movement of the aorta. In another case he assisted in removing a piece of a hat pin from the heart of a negro. The man suffered no special inconvenience, although his pulse was irregular as long as he occupied the upright position; but when he undertook to lie down he had considerable pain and great difficulty in breathing. The foreign body was removed by a modified Rotter operation. He also assisted in suturing the heart of a boy who was stabbed with a penknife.

Dr. Walter C. G. Kirchner, of St. Louis, had seen five cases of heart suture and had operated in two. One of the patients on whom he operated recovered. It was important for the surgeon who was likely to have emergency work of this kind, to have a definite plan of operation, a definite means of opening the chest, so that it could be opened quickly and without much confusion. Deep anesthesia was dangerous because, when the chest was opened the lungs did not work as well as when the patient was partially anesthetized. So it was better to use light general or local anesthesia. The danger of pneumothorax had been overestimated. In all the cases where he had seen the chest laid wide open, the lung functioned to a moderate extent when the chest was widely opened, so that repair of the heart, even under these conditions, could be undertaken.

Operations for Retroversion.—Dr. Henry T. Byford, of Chicago, stated that Alexander's operation utilized the round ligaments in a natural way by drawing them toward the inguinal ring, so the intraperitoneal shortening should draw in the same direction. It should also preserve the normal uterine attachment and best part of the ligament. It should not change the relation of the uterus to its surroundings. The relief should be permanent and not nullified by postoperative complications. There were certain features that should be avoided, namely, dependence upon peritoneal adhesions, for they were unreliable; the production of exudates, for they interfered with normal mobility and were apt to produce symptoms; the leaving of exposed sutures in the peritoneal cavity, for they gave rise to exudates and adhesions; the suturing of the uterine body in any way, for it frequently interfered with normal function; traction in an upward direction, for it should, as far as possible, be downward upon the filling and emptying bladder.

The steps of the operation were as follows: The ligament was grasped near its exit from the internal inguinal ring and pulled toward the median line until it was taut. A slender twenty day catgut thread was passed through it, about one cm. from the internal inguinal ring and again about five cm. from its uterine attachment, and tied. The edges of the resulting loop of the ligament were sewed so that it would form a double cord, and leave the end of the thread projecting beyond its free end. Then the peritoneum was separated freely from the abdominal wall at the lower end of the incision laterally as far as the internal inguinal ring. With the point of a pair of slightly curved hemostatic forceps, the peritoneum was punctured from without inward about one cm. mesially from the ring, the thread grasped, and the loop pulled through the puncture until all of the sutures were extraperitoneal. With a permanent suture the loop was attached at a point about one cm. from its base to the inner surface of the abdominal wall as near the inner ring and as low down as possible without risk of puncturing the epigastric or femoral artery. The pulsating arteries were easily felt, and each step of the operation should be guided both by sight and touch. The loop was twisted half way around on its long axis and sewed with catgut along the abdominal wall toward the median line. The same was done on the opposite side with the other ligament and the abdomen closed. A small pessary should be introduced to be worn for about three months. When the operation was done in this way the sutures were all extraperitoneal, the intraperitoneal relation of parts was practically normal, and the traction of the ligament was toward the internal inguinal ring.

Artificial Vagina by Intestinal Transplantation.—Dr. H. J. Boldt, of New York, reported two cases of formation of an artificial vagina by intestinal transplantation; in both there was a complete congenital absence of the vagina. His first step was to open the abdomen and to eliminate a sufficient length of ileum to make the artificial vagina—about twelve inches—and then to reestablish the intestinal tract by lateral anastomosis. This was freer of risk as regards injury of the rectum and bladder than first to make the canal into which the artificial vagina was to be implanted. The making of this canal was easily done without appreciable risk of injury with the abdomen open. The eliminated part of the ileum was grasped with a spongeholder at its median part and drawn down to the vulva and there sutured all around the vulva. The apices of

the bowel, used to make the vagina, were then fastened in the pelvis and the abdomen was closed, after covering the vault with pelvic peritoneum. The bowel was then opened and its interior wiped out with a gauze strip saturated in boric acid solution, but this was not absolutely necessary nor essential, since all the mucus and contents would drain out during the days after operation. After the bowel loop had been opened, the everted mucosa was further fastened to the vulva with silk sutures. In the main his technic was that devised by Baldwin. In both cases the result was all that could be desired, although both cases had previously been operated elsewhere, but were complete failures. In his first case the operation was complicated by many intestinal adhesions, due, in all probability, to a previous abdominal operation.

Adenomyoma of the Rectovaginal Septum.—Dr. THOMAS S. CULLEN, of Baltimore, considered a hitherto relatively unrecognized growth situated in the rectovaginal septum between the cervix and rectum. The growths had the same histological picture as adenomyomata of the uterus, namely, they consisted of typical uterine glands lying in their characteristic stroma and surrounded by diffuse myomatous tissue. They evidently started in the lower part of the uterus and then spread out in the rectovaginal septum. It was a well known fact that adenomyomata had an inherent tendency to grow fast to surrounding structures. Thus those growths which in the beginning might be readily shelled out, later became so fixed to the rectus that it was necessary to take away a portion of the bowel with the tumor. Those growths could clinically be easily differentiated from cancer of the rectum. Adenomyomata of the rectovaginal septum invaded the bowel from without. They extended into and narrowed the bowel lumen, but the overlying mucosa was still intact. The only rectal symptoms that one might expect were those due to partial obstruction of the bowels. Cancer of the bowel, on the other hand, started in the mucosa and extended outward. It was usually accompanied by hemorrhage from the bowel and later by the fetid discharge, due to breaking down of the cancerous tissue. With adenomyoma of the rectovaginal septum there was usually no bleeding. On rectoscopic examination in the one case, the cancerous area could be readily seen; in the other, while the bowel was narrowed, the mucosa was nevertheless everywhere intact. While such growths were histologically benign, and while they naturally never gave rise to metastasis, nevertheless, if portions of the growths were left behind, they continued to grow, and as a result of the adhesions, alarming and in fact fatal obstructive symptoms might develop. The observation of several cases of this character in such a short time seemed to indicate that adenomyoma of the rectovaginal septum was not rare, and a more careful and systematic examination of all rectal growths would, in the future, bring to light more similar cases.

The Paquelin Cautery in Cervicitis; Its Value in Sterility.—Dr. GUY L. HUNNER, of Baltimore, reported a series of 241 cases treated with the cautery with practically universal success in the class of cases then outlined as suitable for this method. He warned against the use of the cautery in the acute or subacute stages of gonorrhea; also against losing valuable time by using the cautery on an early case of epithelioma of the cervix. In any suspicious case that could not be diagnosed grossly a specimen should be removed for microscopic examination. In the chronic inflammatory cases, in which a portion of the leucorrhea comes from a metritis or endometritis, the cervical treatments should cease when the cervix had a normal appearance and the cautery failed to empty more retention glands, although there would still persist some leucorrhea from within the uterus. Other pathological conditions for which the cautery had been found useful as an instrument for office treatments, were urethral caruncle, polypus of the cervix, fibroma of the vaginal wall, retention cysts, and abscesses of Skene's and Bartholin's glands.

More recently he had found the high frequency spark the ideal method for cauterizing urethral caruncle. He was placing before the profession a method that might prove of great value in handling certain sterility cases. He had had fourteen cases in which the patients became pregnant after the use of the cautery. Some of these patients had not been married long enough to be classed as sterile, and others had borne children and were probably only temporarily sterile, and others had reposition of the pelvic organs with placement of a pessary, treatments that might have resulted in pregnancy without the use of the cautery. Of the fourteen, it was more than probable that in six the pregnancy followed as a consequence of using the cautery. Eight were failures. Many others complained of sterility and were treated with the cautery, but were not reported; some because of having had only one treatment, others because the presence of a small fibroid or of pelvic inflammatory disease made it probable that the cautery treatment would not give results, and others because the husband's semen had not been examined. Azoospermia was the cause of sterile marriages in such a high percentage of cases that no method of treating the wife could have its merits passed upon without first excluding the sterilities due to the husband.

Treatment of Vesical Fistulæ at the Vaginal Vault Following Surgical Operations.—Dr. HOWARD A. KELLY, of Baltimore, stated that occasionally after an operation for a fibroid tumor, and more frequently after an operation for an advanced cancer of the cervix, where the disease had extended anteriorly, a vesical fistula was left which was troublesome and persistent, rarely tending to close of itself. The opening was always found high up at the vaginal vault where it was fixed by scar tissue often inaccesible and difficult to manipulate by any operation through the vaginal introitus. He had seen such cases operated in repeatedly and in vain. One of the difficulties arose from the fact that the patient, if she had had a fibroid tumor, was often unmarried or nulliparous, and had a tight vaginal orifice which added to the embarrassment of the surgeon. Furthermore, the margins of the fistula were often thin, devitalized, and ill adapted to denudation and approximation. Added to these technical hindrances was the constant dread of the operator lest he should make a small opening on the

peritoneum and introduce infection and run the risk of fatal peritonitis. He had discovered an excellent plan of operating in these cases which obviated all the difficulties and dangers, simplified the treatment, and gave a maximum certainty of cure. The patient should lie well anesthetized in the lithotomy posture with the posterior vaginal wall well retracted; if necessary, a paravaginal incision was made to expose the vault and the fistula. Then the operator cut transversely, just above or through the scar tissue, and carefully, but with deliberate purpose, opened the peritoneal cavity the very first thing. As soon as the peritoneum was opened, the incision was continued from side to side until it reached a maximum width, and it was possible to introduce three fingers by which it was further extended from side to side until it was as big as in the operation for vaginal hysterectomy. This part must be done without injuring the bladder or affecting the fistulous tract. The previously taut tissues were now set free to such an extent that they lay loose and flaccid, dropping down toward the outlet into any desired position for denudation and suturing. A good plan now was to incise the tissues longitudinally through the fistula down to the bladder, which was dissected away from the vagina and sewed up separately with one or two layers of a fine chromic catgut suture, after which the vagina was conveniently united over the vesical wound at a right angle, so that the two lines of suturing crossed. Following such an operation, he usually left an opening in the peritoneal cavity, about a quarter of an inch wide, for drainage. He had in some cases left a considerable part of the vesical peritoneum in the vagina forming a new vaginal vault. A mushroom catheter was put into the bladder for a few days to keep it at rest during the first part of the healing process, and the patient remained in bed from eight to twelve days, the peritoneal drain being removed in from four to six days. In one of his recent cases, he started, intending to open through the vaginal vault into the peritoneum, but as he cut a little behind the scar of the vault, he found that he could dissect up the scar area from side to side and detach it and the peritoneum above from the rectum with its fat, and so set the tissues free and loosen them up sufficiently from the surrounding parts to be able to bring the fistula down and close it perfectly without opening the peritoneal cavity at all. This was an exceptional case and the method when applicable was better than the last. He felt sure that this procedure of setting free the fistula with all the surrounding tissues in order to denude and suture with perfect accuracy would simplify a class of cases in which they had often found themselves in considerable difficulty in the past.

Terminal Results of Biliary Obstruction.—Dr Henry O. Marcy, of Boston, said that the terminal results of operations upon the biliary passages were serious, at the best often imperfect, owing to the pathological changes which had taken place in the structures. One verdict only could be rendered—that in favor of early operations. It had been truly said, "the easier the diagnosis, the worse the prognosis." Every surgeon was constantly seeing cases of biliary obstruction, diagnosed by the general practitioner too late to give satisfactory results. It was the duty of the surgeon to instruct the general practitioner as far as possible. Just here lay the great profit accruing to the experienced surgeon who had studied a long series of his own operations. Such conditions demanded long and painstaking study. More and more were we individualizing such study, considering the patient's physical state, his resisting powers—all the factors, indeed, which went to make him a warrantable subject for operation. It was probably beyond the limits of human skill always to diagnose the presence of gallstones; it was not to the discredit of a surgeon if, upon operation, they were not found. Exploratory laparotomy was, in itself, not especially dangerous. His clinical records showed that he had opened the abdomen over seventy times when conditions did not warrant further interference. More commonly these were cases of advanced cancer. That experience had been duplicated since the date of examination, of his records, without a single fatal result—not too large a percentage in about five thousand abdominal operations. His purpose was not to dwell upon operative technic. He would urge the utmost care not to overlook a gallstone so placed as to be difficult of detection. This very stone might be the primary cause of obstruction; without its removal, the operation went for naught, and the patient was left worse because of it. Few conditions tested the skill of the surgeon more severely. The trained touch, the *tactus eruditus* of the earlier writers, was nowhere else called into finer requisition. More careful study of the surgical diseases of the abdominal cavity in their earlier stages, especially those of a progressive type, would be sure to lessen mistakes and to broaden the role of surgical intervention. Surgery would no longer be considered *en dernier ressort* by both patient and physician, but would be welcomed as offering a bright promise of speedy and permanent cure.

Resection of the Rectum for Cancer with Preservation of the Sphincter.—Dr. Charles H. Mayo, of Rochester, Minnesota, said that extirpation of the cecum and ascending colon for cancer had given a high percentage of cures because an anastomosis of the ileum into the colon was an ideal enterostomy for delivering semiliquids. The two stage Mikulicz method was one of the safest known, although convalescence was protracted. A permanent colostomy, though abhorrent to patients, undoubtedly gave a higher percentage of cures than did methods which restored function. He advised a colostomy, when necessary, made through an incision large enough to permit general examination of the abdomen. In a summary of his paper he advised, 1, thorough abdominal exploration; 2, a temporary or permanent colostomy in the majority of cases of the type under discussion; 3, increasing the lumen of the anterior and, if necessary, the posterior portion of the bowel to double their normal diameter at the point of union; 4, rotation of the anterior peritoneum covered bowel to secure rapid healing posteriorly, and practically free peritoneal surface anteriorly; 5, stretching or division of the sphincter to secure drainage of the bowel; 6, closure of the colostomy to secure function; and, 7, if

there was no metastasis and the colostomy was to be permanent, that the rectum be removed at a second operation.

Surgery of the Ileocecal Coil.—Dr. FRANCIS REDER, of St. Louis maintained that the most important feature for successful surgery of the intestinal tract was an early diagnosis. The great danger following a successful resection of the ileocecal coil with immediate restitution of the canal, lay in the secondary changes which had taken place in the intestinal walls induced by the disease for which the operation was undertaken. The complete atony of the bowel so often present activated various infective processes generated by the pent up bacteria. Whenever the virulent contents of the bowel became stagnant at the site of suture, the suture frequently yielded and a peritonitis usually incompatible with life resulted. One case bore the gravest aspect, evolved a fecal fistula on the fifth day after operation, and recovered. This happy termination occurred after another patient had died after the ideal method on the ninth day following the operation. It demonstrated to him the fact that a vent became almost a necessary adjunct to this operative procedure. Having had two recoveries with the ideal operative measure that proved in no way more severe than a simple appendectomy, he at no time had underestimated the choice of an operation for the resection of the ileocecal coil. In his last two cases he had successfully employed a technic that carried with it the feature of an artificial anus, but in a modified form. The advantage of this technic was a vent that would not require risky operative measures for its successful closure. An incision was made through the outer edge of the right rectus. Ablation of the tumor and the removal of the mesenteric glands were carried out. The division of the ascending colon and the ileum was an important feature. Inasmuch as cecal growths usually embodied considerable of the ascending colon, the hepatic flexure might not be far distant. It was of some advantage to make resection of the colon at or beyond the hepatic flexure. The division of the ileum should be such as to give the bowel the necessary latitude to be brought without tension in contact with the colon, near the point of resection. At least six inches of the ileum should be sacrificed. The end of the colon was closed with suture in the accepted manner. The end of the ileum was closed temporarily with a basting stitch so as to avoid spilling any of its infective contents while the operation was in progress. A lateral anastomosis with an opening not less than three inches was performed. With a suture conveniently placed through the serosa of the bowel, the end of the resected colon was secured to the abdominal wall as far laterally as could be done to leave tension upon the line of anastomosis and possibly anticipate any future displacement of the gut. After the anastomosis was completed, the free end of the ileum was drawn out of the abdomen, was sutured to the parietal peritoneum of the wound into its uppermost corner away from any viscus that might be liable to get caught at the point of fixation, and the abdominal wound was closed. If a more advantageous implantation of the iliac end could be made through a small secondary abdominal incision, this should be done, and the primary incision closed completely. Of the ileocecal resections there had been three deaths following the ideal method, and one in which an artificial anus was made. There had been two recoveries from the ideal method, one following an artificial anus, and two by his method. One patient evolved a fecal fistula five days after operation.

(To be continued.)

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

The Unconscious. The Fundamentals of Human Personality Normal and Abnormal. By MORTON PRINCE, M. D., LL. D., Professor (Emeritus) of Diseases of the Nervous System, Tufts College Medical School; Consulting Physician to the Boston City Hospital. New York: The Macmillan Company, 1914. Pp. xii-549. (Price, $2.)

Normal psychology, preceded by a formal study of logic, we hope some day to see required of all candidates for the study of medicine; man being a rational animal, the anatomy, if we may call it so, the construction of the mind, is as essential to an undertanding of the invalid as familiarity with his physical make-up; while an acquaintance with logic will save the profession in America from gross errors of judgment regarding new methods of treatment, etc. Meanwhile psychology must be learned by student and practitioner and we have no better teacher than Professor emeritus Morton Prince, whose delightful English and clarity of style are manifest in this book. As he says, the subconscious is not merely the most important problem of psychology, it is *the* problem; and this he divides into the unconscious and the coconscious, the first embodying neural dispositions and processes, and the second the actual subconscious ideas which do not enter the content of conscious awareness, one being physical, the other psychological. If this sounds somewhat dry, we hasten to say that the book itself is not so, being filled with the fascinating phenomena of hypnosis, automatic writing, lost consciousness, double personality, along with discussion of the Freudian and other hypotheses of dreams, with obsessions and phobias, emotion, instincts, concepts, etc. The book is especially valuable in being based almost exclusively on first hand observation. We insist that knowledge of the kind embodied in this work is essential to the well rounded physician, who in his every day routine will find occasion to apply the principles herein developed. The book shows vast learning and an intimate acquaintance with the theories of the great psychologists, but it is as entertaining as a novel and becomes a stimulant to thought in the reader. We commend it highly to every physician who feels that he is a member of a learned profession.

The Student's Handbook of Gynecology. By GEORGE ERNEST HERMAN, M. B., F. R. C. P. Lond., F. R. C. S. Eng., Consulting Obstetric Physician to the London Hospital, Consulting Physician-Accoucheur to the Tower Hamlets Dispensary, etc. Second Edition, Revised by the Author with Additions by R. DRUMMOND MAXWELL, M. D. Lond., F. R. C. S. Eng., Assistant Obstetric Physician to the London Hospital, and Physician to Queen Charlotte's Lying-in Hospital. With 6 Colored Plates and 194 Figures in the Text. New York: William Wood & Co., 1914. Pp. xii-586. (Price, $2.50.)

This is the smallest textbook on gynecology in the market; incidentally, it is one of the very best. The author assumes that the physician who reads this volume is in possession of a standard work on anatomy, and therefore he wisely omits the customary chapter on that subject. For similar reasons we are spared the usual chapters on anesthetics and the details of asepsis and antisepsis; these im-

portant subjects are presumed to be accessible elsewhere. The plan of the book is also unique. "Women do not come to a doctor labelled with the name of the organ that is diseased. They complain of symptoms. Therefore, I have thought it best to take the common symptoms and describe under each the principal diseases which cause it." Of course, this volume is not intended for the specialist; but the general practitioner will find it an uncommonly useful book. It contains everything that he is likely to need on the subject, and he is spared the wearisome task of reading case histories and academic discussions. The work is well written, clearly printed, adequately illustrated, and well indexed.

Skin and Venereal Diseases, Miscellaneous Topics. Edited by W. L. Baum, M. D., Harold N. Moyer, M. D. The Practical Medicine Series. Volume IX. Series 1913. Chicago: The Year Book Publishers. Pp. 228. (Price, $1.35.)

The authors of this volume have been unusually successful in collecting into small space the important contributions made during the year 1913; seventy-eight pages are devoted to dermatology, twenty-eight to syphilis, forty-one to genitourinary diseases.

Manual of Surgery. By Alexis Thomson, Professor of Surgery, University of Edinburgh, Surgeon Edinburgh Royal Infirmary, and Alexander Miles, Surgeon Edinburgh Royal Infirmary. Volume Third, Operative Surgery. Second Edition. With 255 Illustrations. Edinburgh, Glasgow, and London: Henry Frowde (Oxford Press) and Hodder & Stoughton, 1913. Pp. xvi-620. (Price, $3.50.)

The third volume of this manual, which is devoted to operative surgery, maintains the standard set by the two preceding volumes. The subject matter is well written, and the methods described are modern and represent the best usage of the day. All that is superfluous has been eliminated so that the book is well suited to students and beginners in surgery. The use of Röntgen pictures of extremities upon which to mark out the location of incisions for amputations and resections, is novel and will undoubtedly prove useful in accentuating the situation of bony landmarks and their relative positions. The authors have been sufficiently broad minded to include many methods and modifications originating in countries outside of England and have given due credit for their use. Every topic is treated without favoritism so that the student or surgeon can find full details of any particular operation with which he wishes to familiarize himself. The illustrations are excellent and add materially to the elucidation of the text.

Outlines of Greek and Roman Medicine. By James Sands Elliott, M. D., Ch. B. (Edin.). Editor of the *New Zealand Medical Journal*, Honorary Surgeon to the Wellington Hospital, New Zealand. Illustrated. New York: William Wood & Co., 1914. Pp. xi-165. (Price, $2.50.)

A statement in the preface of Doctor Elliott's book to the effect that he had been stimulated to write it by a recent sojourn in the southeastern part of Europe, had led us to suppose that we were to enjoy an entirely new work drawn from original sources. Far from such being the case, however, the author has obtained his material from volumes well known to the student, not overlooking that venerable companion of our schooldays, Smith's *Dictionary of Greek and Roman Antiquities.* Even the illustrations, which are very fine, are borrowed, some of them from a proprietary medicine concern. The book, these facts being thoroughly understood, is eminently readable and for the information it contains concerning the classical period, many readers will prefer it to the ponderous work of Sprengel for example. We are not forgetting Garrison's admirable work when we say that medicine still awaits her historian, who must be profound, interesting, accurate, and modern in his methods, a Holmes or a Mitchell, one who has practised medicine, but has ultimately yielded to the call of literature. Meanwhile such contributions to the history of periods as Doctor Elliott has produced, will be most welcome, for even the accepted facts of medical history take on new and interesting aspects after being filtered through a mind of exceptional quality. We hope all medical schools will some day have a chair of history, to temper the pure utilitarianism of clinical and didactic sessions.

Bakteriologischer Grundriss und Atlas der Geschlechtskrankheiten. Von Dr. B. Lipschutz. Mit 33 farbigen Tafeln. Leipzig: Verlag von Johann Ambrosius Barth, 1913. Pp. vii-123.

Doctor Lipschütz presents briefly the important diagnostic points, from the microscopical side, of the more common infections of the sexual organs, particularly gonorrhea and syphilis. A chapter is devoted to the technic of the staining methods employed. In addition, there are thirty-three most excellent plates illustrating the various microorganisms discussed. There is also a handy table giving a list of ten of the important spirochetes and their different characteristics. For laboratory use this book should prove valuable.

Interclinical Notes.

The *Sun*, in its issue for March 29th, uses editorially the word dysgenics. There is some authority for this difficult mouthful, but cacogenics is the exact term required; *kakogenes* is used explicitly by early Greek writers to express the opposite of *eugenes.*

* * *

An article by Charles Stelzle in the *Outlook* for April 4th on how some workingmen spend their spare time, reminds us that the physician, alone among men, has no spare time. He has not even time to guard either his own interests or those of the public, as witness recent Congressional and State legislation, legislation carried out by the very men who hold him up for his fees—those who through their own folly and ignorance are often in need of the doctor's care, yet, when assembled at Albany or Washington, apparently strive to hamper him in every way.

* * *

Florence Y. Humphries discusses The Case of the High Schools in the *Educational Review* for April; the writer is pessimistic, and knows of too many schools where the pupils are driven through without adequate training. This fact touches us nearly, for if the high school curriculum was everywhere what it should be, the medical colleges might not have been obliged to tack on two years of academic work to the preliminary equipment of the medical student. The young man who is confronted with the genuine work of a medical course without having had any proper mental drill, has been cheated. We believe, however, that a medical student should have had advanced mathematics and a course in formal logic, metaphysics, and psychology, perhaps too much to ask of a high school or even of the first two years of the arts course.

* * *

Only an *à priori* reasoner can attribute the manifestations of a so called spiritualistic seance to the work of "evil spirits." We do not doubt the assertion in *Current Opinion* for April that the belief in black magic is responsible for much insanity, but we think it a pity that the periodical should treat of theories based on the assumption that there are spirits good and evil under the head of "science." Science has not yet found it necessary to postulate a spiritual world to explain the absurd manifestations of the seance; genuine seekers after an explanation have only to consult a dealer in magical apparatus and pay his high prices to blow any "spirit" mystery to fragments.

* * *

Yes, yes, we know the quotation well: "There are more things in heaven and earth, Horatio, etc." Shakspere was speaking of Horatio's philosophy, which was that of the people, of Sir Oliver Lodge, Dr. Godfrey Raupert, Cesare Lombroso, several United States senators, a few Wall Street millionaires, rich and silly women, persons who make up the audiences at dark seances, to humbug whom they were especially devised. Before founding a totally unnecessary realm of spirits, let these innocents consult the real authorities, Harry Kellar, Horace Thurston, Dr. Saram Ellison, Henry Hatton, Professors Hoffmann, Sachs, Martinka, Maskelyne, and Devant. We owe so much to magic, the steam engine and church organ among other things, to say nothing of many of the recent applications of electricity, that it is a pity to charge it with a horrible superstition. The principles of the magical deception of the public were well known to the ancient Greeks, but they

seem to have remained ever since the exclusive property of showmen.

* * *

In the *Survey* for March 14th are some verses by Julian Walter Brandeis, that will appeal to our readers. They bear the title, In the Dispensary, and are as follows:

Their parents Vice and Need have placed them there
Upon the clinic bench. Wan Hollow Chest
And Pallid Face, a sorry, bloodless pair;
Wee Drooping Jaw and Sunken Eyes who jest
At Twisted Back and Crooked Legs, their kin;
Each little lord transformed by Misery's spell.
How shall we succor them and give them back
What's theirs by right? Shall we disguise their woe
With drugs and brace, with splint and plaster cast;
And walk our way in pride? How then to look
The future generations in the face
When hardened Time has worn the mask away
And each one leads his copy back to us?
Nay deeper, deeper far our duty lies:
To draw the fangs of Want—to throttle Greed
Within her lair—to clip the claws of Vice—
To break the stifling hold of Ignorance
From round their throat. In one to smother out
The fire within their hell! And they'll look up.

* * *

Do any of our contributors follow Dryden's example before sitting down to write? The poet said: "Whenever I have a grand design, I ever take physic and let blood; for when you would have pure swiftness of thought, and fiery flights of fancy, you must have a care of the pensive part; in fine, you must purge the belly." Dryden was subjected to much ridicule for this opinion; but D'Israeli, in his *Curiosities of Literature,* maintains that his practice was neither whimsical nor peculiar to Dryden; "he was of full habit and no doubt had often found by experience the beneficial effects without being aware of the cause, which is nothing less than the reciprocal influence of mind and body."

* * *

From the supplement to D'Israeli's book, *Curiosities of American Literature,* edited by Rufus W. Griswold, we learn that Thomas Paine could write only after imbibing three good drinks of brandy; "the second illuminated his intellectual system; after the third he wrote with rapidity, intelligence, and precision. . . . What he penned from the inspiration of the brandy was perfectly fit for the press without any alteration or correction."

* * *

What would one of our modern women writers say to the remark of Lord Jeffrey to Mrs. Hamilton, made about the year 1800? "There is no objection to the blue stocking," said Jeffrey, "provided the petticoat comes low enough to cover it." Quite as bad is the comment of one of the authors—a woman—of the book in which we found this: "Mrs. Hamilton had the plain face proper to literary women."

* * *

Doctor Deming, whom we introduced to our friends not long ago, vanishes from The Unlighted Way after "shooting" the contents of a hypodermic needle into a patient's arm, and gripping the heroine's hand with fervent admiration. The excellent and very modern serial story, by Leroy Scott, is concluded in *Women's Stories* for April 1st.

* * *

Meetings of Local Medical Societies.

MONDAY, *April 13th.*—New York Ophthalmological Society; Society of Medical Jurisprudence, New York; Roswell Park Medical Club, Buffalo; Association of Alumni of St. Mary's Hospital, Brooklyn (annual); Williamsburg Medical Society, Brooklyn; New Rochelle Medical Society.

TUESDAY, *April 14th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); Associated Physicians' Economic League of New York; Medical Society of the County of Wyoming; Ontario County Medical Society; Medical Society of the County of Schenectady; Medical Society of the County of Rensselaer; Buffalo Academy of Medicine (Section in Medicine); New York Obstetrical Society; Medical Society of the County of Oneida.

WEDNESDAY, *April 15th.*—New York Academy of Medicine (Section in Genitourinary Diseases); Alumni Association of City Hospital, New York; Schenectady Academy of Medicine; Women's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; Buffalo Medical Club; Northwestern Medical and Surgical Society of New York.

THURSDAY, *April 16th.*—New York Academy of Medicine (stated meeting); Auburn City Medical Society; Geneva Medical Society; German Medical Society, Brooklyn; Æsculapian Club of Buffalo; New York Celtic Medical Society.

FRIDAY, *April 17th.*—New York Academy of Medicine (Section in Orthopedic Surgery); Mount Vernon Medical Society; Clinical Society of the New York Post-Graduate Medical School and Hospital; New York Microscopical Society.

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Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending April 1, 1914:

Frost, W. H., Passed Assistant Surgeon. Authorized, in conjunction with Sanitary Chemist H. W. Streeter, to present before the section on water, sewage, and sanitation of the American Chemical Society an outline of the work being carried on in the investigation of the pollution of the Ohio River, and the laboratory work in connection therewith. **Goldberger,** Joseph, Surgeon. Directed, in connection with investigations of pellagra, to proceed at such times as may be necessary to Catlott, and other places in the State of Virginia, to make epidemiological studies of cases of the diseases. **Grubbs,** S. B., Surgeon. Relieved from duty at Providence, R. I., upon arrival of Surgeon C. P. Wertonbaker, and directed to proceed to Louisville, Ky., and assume charge of the Service at that port. **Lumsden,** L. L., Surgeon. Referring to bureau orders of March 18, 1914, directed while conducting investigations of rural sanitation in West Virginia, to return to Washington, D. C., at intervals of at least two weeks for conference and to make bacteriological examinations of specimens collected. **McLaughlin,** A. J., Surgeon. Granted six months' leave of absence from April 1, 1914, without pay. **Paine,** Liston, Assistant Surgeon. Relieved from duty at the Marian Hospital, Boston, Mass., and directed to proceed to Cincinnati, Ohio, and report to Passed Assistant Surgeon W. H. Frost for duty in the investigations of the pollution of the Ohio River. **Phelps,** E. B., Professor of Chemistry. Detailed to attend the meeting of the American Chemical Society, to be held at Cincinnati, Ohio, April 7 to 10, 1914, for the purpose of presenting a paper on chemical studies of the pollution of the Ohio River. **Pierce,** C. C., Surgeon. Upon completion of the course of instruction at the Hygienic Laboratory, directed to report to the bureau for duty in connection with the preparation of a Service Exhibit for the Panama-Pacific Exposition. **Ruoff,** John S., Assistant Surgeon. Granted one month and seven days' leave of absence, on account of sickness, from February 24, 1914. **Seidell,** Atherton, Technical Assistant. Detailed to attend the meeting of the American Chemical Society to be held at Cincinnati, Ohio, April 7 to 10, 1914, for the purpose of presenting a paper before the pharmaceutical section of the society. **Stiles,** C. W., Professor of Zoology. Detailed at the request of the Eighth District Medical Society of North Carolina to attend the annual meeting of that society to be held at Greensboro, N. C., April 2 and 3, 1914, and present an address on a public health subject of general interest. **Stoner,** G. W., Senior Surgeon. Granted five days' leave of absence from March 21, 1914, under paragraph 193, Service Regulations. **Wertenbaker,** C. P., Surgeon. Relieved from duty at Norfolk, Va., and directed to proceed to Providence, R. I., not later than May 1, 1914, and assume charge of the Service at that port.

Board Convened.

Board of commissioned medical officers convened to meet at the bureau, Monday, April 27, 1914, at 10 o'clock a. m., for the physical and mental examination of candidates to determine their fitness for appointment as assistant surgeons in this Service. Detail for the board: Assistant Surgeon General W. G. Stimpson, chairman; Assistant Surgeon General W. C. Rucker, member; Passed Assistant Surgeon Hugh de Valin, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending April 4, 1914:

Bell, C. R., First Lieutenant, Medical Reserve Corps. Ordered to Fort Sam Houston, Texas. **Clarke,** J. T., Lieutenant Colonel, Medical Corps. Granted two months' leave of absence about March 25th. **Coburn,** H. C., Jr., Captain, Medical Corps. Granted two months' leave of absence about May 5th. **Cummings,** R. E., First Lieutenant, Medical Reserve Corps. Ordered to Naco, Arizona. **Eastman,** W. R., Major, Medical Corps. Ordered to inspect the Missouri Militia as follows: St. Joseph, April 2d; Kansas City, April 3d; Joplin, April 4th; West Plains, April 8th; St. Louis, April 10th. **Giffin,** A. M., First Lieutenant, Medical Reserve Corps. Ordered to Rio Grande City, Texas. **Gregory,** J. C., Captain, Medical Corps. Ordered to Oglethorpe for observation and treatment on completion of militia inspection at Lindale, Georgia, April 6th. **Heath,** George D., Jr., Captain Medical Corps. Directed to report to president of retiring board at Washington, D. C., for examination by the board. **Love,** A. G., Captain, Medical Corps. Relieved from duty in the surgeon general's office effective at such time as will enable him to comply with the order, and will proceed at the proper time to Seattle, Washington, for duty with troops thereat en route to Fort Gibbon, Alaska, and on arrival at Fort Gibbon, Alaska, will report to the commanding officer of that post for duty. **McCaw,** Walter D., Colonel, Medical Corps. Relieved from duty in the office of the surgeon general effective at such time as will enable him to comply with this order, and will proceed to San Francisco, Cal., and take the transport to sail from that place on or about May 5, 1914, for the Philippines, for duty. **Southwick,** Harry H., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and will proceed to Fort Sheridan, Ill., for duty.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Navy for the week ending April 4, 1914:

Bone, J. T., Assistant Surgeon. Commissioned an assistant surgeon in the Medical Reserve Corps, March 17, 1914. **Cook,** F. C., Surgeon. Detached from the Naval Hospital, Puget Sound, Washington, and ordered to the *Louisiana*. **Freeman,** G. F., Surgeon. Detached from the *North Carolina* and ordered to the *Nebraska*. **Old,** E. H. H., Passed Assistant Surgeon. Detached from the *Nebraska* to await orders. **Riggs,** C. E., Surgeon. Detached from the *Louisiana* to await orders. **Smith,** G. T., Medical Director. Detached from the Navy Yard, Washington, D. C., to await orders. **Walton,** D. C., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to Naval Academy, Annapolis, Md. **Wood,** C. I., Assistant Surgeon, Medical Reserve Corps. Ordered to Naval Hospital, New York, N. Y.

Births, Marriages, and Deaths.

Born.

Eisenhower.—In Mechanicsburg, Pa., on Thursday, March 19th, to Dr. and Mrs. J. S. D. Eisenhower, a son.

Married.

Grastein—Gross.—In Hartford, Conn., on Tuesday, March 24th, Dr. Charles I. Grastein, of Brockton, Mass., and Miss Caroline Gross. **Hoitt—Hoitt.**—In Vancouver, B. C., on Thursday, March 12th, Dr. Eugene G. Hoitt, of Marlboro, Mass., and Miss Gladys Hoitt. **Smith—Burch.**—In Berkeley, Cal., on Monday, February 23d, Dr. M. T. Smith, of Wallace, Idaho, and Miss Beryl Burch. **Spear—Smith.**—In Washington, D. C., on Wednesday, April 1st, Surgeon Raymond Spear, United States Navy, and Miss Eleanor Smith.

Died.

Aven.—In Atlanta, Ga., on Thursday, March 19th, Dr. James Lloyd Aven, aged twenty-three years. **Baker.**—In Adrian, Mich., on Friday, March 20th, Dr. V. A. Baker, aged eighty-two years. **Brumley.**—In Biggers, Ark., on Monday, March 23d, Dr. George W. Brumley. **Burks.**—In Roanoke, Va., on Wednesday, March 18th, Dr. David Burks. **Carrier.**—In Troy, Pa., on Tuesday, March 24th, Dr. C. W. Carrier, aged seventy-three years. **Cartwright.**—In Pittsburgh, Pa., on Sunday, March 29th, Dr. Harry B. Cartwright. **Cornell.**—In Saginaw, Mich., on Saturday, March 21st, Dr. D. B. Cornell, aged sixty years. **Davis.**—In Hartford, Conn., on Wednesday, April 1st, Dr. G. Pierrepont Davis, aged sixty-nine years. **Derby.**—In New Bedford, Mass., on Monday, March 30th, Dr. Charles A. Derby, aged thirty-seven years. **Ellis.**—In Greensboro, N. C., on Thursday, March 26th, Dr. Thomas J. Ellis. **Foster.**—In London, Ky., on Monday, March 16th, Dr. J. D. Foster, aged ninety-two years. **Franklin.**—In Union Springs, Ala., on Thursday, March 19th, Dr. C. H. Franklin, aged seventy-five years. **Hagen.**—In Viroqua, Wis., on Sunday, March 22d, Doctor Hagen. **Hall.**—In Minneapolis, Minn., on Sunday, March 22d, Dr. Levi Hall, aged eighty-one years. **Hawley.**—In Penn Yan, N. Y., on Sunday, March 29th, Dr. William H. Hawley, aged eighty-nine years. **Herrick.**—In New York, on Wednesday, April 1st, Dr. Everett Herrick, aged eighty-four years. **Houser.**—In Wabash, Ind., on Wednesday, March 25th, Dr. B. A. Houser, aged sixty-two years. **Ingle.**—In Baltimore, Md., on Friday, March 20th, Dr. J. Lowrie Ingle, aged sixty-seven years. **Johnson.**—In Waycross, Ga., on Saturday, March 21st, Dr. Marvin M. Johnson, aged thirty-four years. **Kennon.**—In Waco, Texas, on Thursday, March 26th, Dr. J. W. Kennon, aged seventy-eight years. **Kinsey.**—In Washington, D. C., on Tuesday, March 24th, Dr. Oliver Kinsey, Jr., aged twenty-eight years. **Le Fevre.**—In New York, on Monday, March 30th, Dr. Egbert Le Fevre, aged fifty-five years. **Marshall.**—In Norfolk Downs, Mass., on Thursday, March 26th, Dr. Julia A. Marshall, aged seventy-three years. **Miller.**—In Harrisburgh, Pa., on Thursday, March 26th, Dr. Alvin I. Miller, aged sixty-four years. **Moore.**—In San Angelo, Texas., on Monday, March 23d, Dr. A. H. Moore, of Bonham, Texas, aged seventy-two years. **Newcombe.**—In Pompton Plains, N. J., on Wednesday, April 1st, Dr. George F. Newcombe, aged sixty-four years. **Nolan.**—In Tampico, Mexico, on Tuesday, March 3d, Dr. Frank Nolan, aged thirty years. **Roberts.**—In Minneapolis, Minn., on Saturday, March 21st, Dr. George F. Roberts, aged sixty-six years. **Rowell.**—In Stamford, Conn., on Sunday, March 29th, Dr. Charles Emery Rowell, aged sixty-five years. **Seastrunk.**—In Orange, Texas, on Wednesday, March 25th, Dr. Horace E. Seastrunk, aged thirty-nine years. **Shepherd.**—In Chattanooga, Tenn., on Sunday, March 22d, Dr. J. T. Shepherd. **Silvers.**—In Rahway, N. J., on Thursday, April 2d, Dr. Elihu Brittin Silvers, aged eighty-five years. **Sterner.**—In Frankford, Pa., on Friday, March 27th, Dr. Oliver H. Sterner, aged fifty-five years. **Stryker.**—In Holkoi, Corea, on Sunday, March 29th, Dr. Edgar de Mott Stryker, formerly of Raritan, N. J. **Stumm.**—In Vienna, Austria, on Friday, March 20th, Dr. Thomas Wesley Stumm, of St. Paul, Minn., aged forty-three years. **Weaks.**—In Paducah, Ky., on Friday, March 20th, Dr. Earl P. Weaks, aged thirty years. **West.**—In Orange, N. J., on Saturday, March 28th, Dr. Eugene G. West, aged forty-nine years. **West.**—In San Angelo, Texas, on Wednesday, March 18th, Dr. Jacob S. West, aged ninety-three years. **Wood.**—In Erie, Pa., on Tuesday, March 24th, Dr. John D. Wood, aged seventy-six years. **Ziegel.**—In New York, on Friday, March 27th, Dr. Herman F. L. Ziegel, aged thirty-nine years.

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Original Communications.

OPERATIVE AND POSTOPERATIVE TREATMENT OF APPENDICITIS.*

Their Importance as Factors Influencing the Death Rate; Based on a Case Report of 1912, Compared with Similar Reports of 1904 and of 1902.

BY PARKER SYMS, M. D., F. A. C. S.,
New York.

About thirty years have elapsed since we began to have a correct conception of appendicitis. Twenty-five years have elapsed since the first definite operations were performed with recognition of this disease as a distinct surgical entity. Practically all that we know about appendicitis has been learned within this period. We have learned much and we have made great progress in our methods of treatment; but there is still much to be learned and there is still progress to be made.

It is well for us to pause from time to time, to review the results of our labors, and to take unto ourselves such lessons as we can from our acquired experience. In this way we can go far toward an intelligent application of that knowledge as a guide for future work.

There are two ways in which we can achieve this object; one is by careful study of the recorded work of others with an analysis of the results of their labor; another is by reviewing our own records and estimating our progress by comparing groups of cases taken some years apart.

This is a large subject, and in a short paper one must confine oneself to a few salient points. So I shall not attempt to go much further than to analyze my own experience and, incidentally, to speak of some of the progressive work of a few men who have taken a prominent part in this field.

In a study of my results (embracing also that of my assistants) I have three data to work from, viz.:

1. A paper written in 1902.
2. A paper written in 1904.
3. The present group of cases—the last 100 consecutive cases in my service in Lebanon Hospital in 1912.

In 1905, at the meeting of the American Medical Association, I reported all my fatal cases following operations for appendicitis. These covered a period of thirteen years. The deaths were nine in number. The total number of cases operated in was not recorded; so that these nine deaths did not represent a known percentage. The thing to be noted in that report, in comparison with the report now being made, is the class of cases in which deaths occurred. There was no death from chronic relapsing-interval type of cases. There was one death only among the cases of acute perforative, suppurative, or gangrenous appendicitis, with localized abscess. The other eight deaths were all in that class of cases characterized by diffuse or general septic peritonitis.

In 1906 I read a paper before the New York Surgical Society based on the study of 219 consecutive cases. These cases were made up as follows:

	Cases.	Deaths.
Class I. Chronic recurrent relapsing: Interval operation	43	
Class II. Acute cases with localized peritonitis or with abscess. These include all the perforative, gangrenous, and suppurative appendixes except those in Class III	157	7 (4.4%)
Class III. Fulminating, gangrenous, perforative, suppurative, with general or diffuse septic peritonitis	19	19 (100%)
Total	219	27 (12%)

In these 219 cases, I myself operated as follows:

	Cases.	Deaths.
Class I	27	
Class II	44	1 (2.2%)
Class III	4	4 (100%)
Total	75	5 (6.6%)

The 100 cases of 1912 are made up as follows, using the same classification:

	Cases.	Deaths.
Class I. Chronic recurrent relapsing; interval operation	42	0
Class II. Acute cases with localized peritonitis or with abscess. These include all the perforative gangrenous suppurative appendixes except those in Class III	4	1 (25%)
Class III. Fulminating, gangrenous, perforative, suppurative, with general or diffuse septic peritonitis	12	2 (16.6%)
Total	100	3 (3%)

In passing let us note briefly our comparative results and see what progress time has brought.

Class I. Chronic recurrent relapsing: Interval operation	[illegible]	[illegible]
Class II. Acute cases with localized peritonitis or with abscess. These include all the perforative, gangrenous, and suppurative appendixes except those in Class III	[illegible]	[illegible]
Class III. Acute cases with general or diffuse septic peritonitis	[illegible]	[illegible]

Also let us take account of our methods of treatment:

Class I. We have made little change in the principle governing us in our treatment; we have made some little change in our technic.

Class II. We have made no change in our principles, but have improved our technic.

Class III. We have [illegible] and technic.

It is in Class III that we have made the real gain in our results. We have not changed our ideas as to indications for operating, so the gain is to be attributed to our ever improving technic, but more particularly to the entire change in our method and manner of operating upon patients with general or diffuse septic peritonitis. I must not neglect to say that we have made a decided change in our

*Read before the Medical Society of the Borough of the Bronx, New York, March 11, 1914.

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method of aftertreatment of all acute cases, and we feel that this has contributed largely to our greater success.

Let us now leave this phase of the subject and take it up in detail later. As themes for discussion I wish to speak of four important contributions to this subject by certain men of distinction and skill; I refer to Ochsner's plan of treatment; to Murphy's classic paper, Perforative Peritonitis; to E. M. Stanton's instructive paper on the pathology of appendicular peritonitis; and to LeGrand Guerry's remarkable report of 545 cases with only two deaths.

OCHSNER.

In discussing this subject at the meeting of the American Medical Association, in 1902, Ochsner (1) brought out some views that were then very novel. He cited the high mortality which had been reported by a number of prominent surgeons. The ground he took was that this high mortality was due to the fact that operations were performed at a time when they should not be, and he proposed a plan of treatment which has become known as the "Ochsner method." Some of the points he made were about as follows: First, appendicitis is at the beginning a local disease, limited to the appendix, and that if operation can be done during this period, that is to say, before the inflammation has gone beyond the appendix, it will be very safe. Second, the process next tends to become more or less diffuse by perforation, gangrene, etc.; this diffusion is promoted by peristalsis of the small intestine, and it is most important to keep the stomach and small intestine at rest, the patients being allowed neither food, drugs, nor water by mouth. Third, he says, "In observing my cases I found that the mortality was almost entirely confined to the class of cases which were operated in after the first thirty-six hours from the beginning of the attack. The cases operated in after forty-eight hours gave some mortality, and those after seventy-two hours gave a still larger mortality, while those that came after ninety-six hours gave a very large mortality. From that time on the mortality began to decrease. It seemed clear that if we could operate in the cases which come to us in the interval and on those which come to us in the first thirty-six hours, we could practically save them all, and if we could transform most of the others into interval cases we would insure a much smaller mortality."

At the time of that discussion, Ochsner reported 416 cases so as to compare his results with 416 cases reported by Deaver. His mortality for acute cases was about four per cent. Among 153 chronic cases he lost two patients from the interval operation. Ochsner took the ground that an operation before perforation or diffusion, that is to say, operation before the thirty-sixth hour, shows a very low mortality; that operation in the interval is very safe, and that late operation, namely, after the process has again become localized is also very safe. But operation, say between the thirty-sixth hour and the ninety-sixth hour is very dangerous and shows a very high rate of mortality. These latter statements were nothing new in the main, but they do not correspond with my experience, in some respects.

My experience showed that operation was dangerous or not, depending upon the character of the process, and not upon the period. The new method which Ochsner proposed was a plan of treatment for cases during the danger period. It is known as Ochsner's Starvation Method of Treatment. It consists in washing the stomach once or twice, or until it is empty, and then absolutely withholding from the patient food, drugs, or water by mouth. Alimentation is supplied by rectal feeding. He maintains that by these methods he can carry the patients through the danger period and that he has been able to operate upon them at a later time, with little or no mortality.

MURPHY.

In 1908, Murphy (2) wrote his classic paper, Perforative Peritonitis. This is an exhaustive paper. It is full of reference to, and careful analysis of much of the experimental and other scientific work which has been done in this department. Murphy shows what I believe to be the truth of the matter, that is to say, that perforative peritonitis is not a uniform process, but a very complex one, made up of many important elements. The fact of its being a localized or a spreading, general process is dependent not alone upon the time elapsed, but also dependent—perhaps more particularly so—on its ultimate cause—on the variety of the bacterium—on the effectiveness or defectiveness of Nature's protective processes. In other words, some cases tend to become localized and to remain localized from the very beginning, while other cases tend to become generalized or spreading from the very beginning. Depending on the causes or etiology and on the patient's powers of defense and resistance, a great variety of diseased conditions will be found in different cases at a corresponding hour.

This does not agree with Ochsner's theory, nor does it correspond with Stanton's analysis of cases, nor is it in accordance with Guerry's interpretation of the good results he obtained in his sixty-eight cases treated according to Ochsner's plan.

Like many of us, Murphy had thought, until a few years ago, that widely diffused septic peritonitis was necessarily fatal in nearly 100 per cent. of cases. Today we all know this to have been a great mistake. Murphy does not follow the Ochsner treatment. He operates at once; he lays great stress on the manner of operating and the method of aftertreatment.

STANTON.

In 1908, E. M. Stanton (3) wrote a paper entitled The Sequence of the Pathologic Changes in Appendiceal Peritonitis. He is a disciple of Ochsner. He avers that there is an "almost absolute uniformity in the progress of those processes leading up to the localization or resolution of the peritoneal inflammation," and he further says that his observation serves to convince him "that the claims of those advocating conservative treatment during certain stages of acute appendicitis, are founded on a much more definite pathologic basis, than is generally recognized by the profession at large."

In other words, Stanton maintains that he has demonstrated Ochsner's theory; that is to say, that acute appendicitis cases are all alike in that they tend to progress in a uniform manner, going through certain stages; that all cases are approxi-

mately in the same stage and condition on the third or fourth day, just as they are all approximately alike during the first thirty-six hours, and so on through the various stages; that the first stage (about the first thirty-six hours) is characterized by a localized process; that the second stage (approximately from the second to the ninth day) is characterized by a diffusion or spreading of the processes; that the third stage (from the seventh day on, roughly speaking) is again a stage of localization, characterized by circumscribed abscess formation.

Stanton was one of Ochsner's assistants. He announced that he had based his paper on the actual condition of the peritoneum observed in 534 cases, 331 of which were acute. These were mostly Ochsner's cases, only forty-one of them being operated in by Stanton and McMullen. I doubt the importance of his communication. It was written for the purpose of proving Ochsner's theory. Ochsner's theory was based on empirical experience. Stanton says that he found a great uniformity in the pathological findings from day to day in the cases treated by the Ochsner method. In nearly all cases in which food or cathartics were given there was an exacerbation; in other words, there was a new acute process grafted on the old one.

He divided the cases of appendicular peritonitis into two classes in accordance with the character of the exudate. 1. Those in which there is a fibrinous or dry exudate: 2, those in which there is a seropurulent or fluid exudate. The first or fibrinoplastic has a tendency to become limited by the formation of adhesions, etc. There is no tendency to spread under the starvation treatment. The second class is in sharp contrast to the first class; it begins as a fluid exudate, and shows little evidence of localization early. He says he has found all forms of acute appendicular peritonitis in three stages, according to different periods of time, and that these different disease processes, belonging to these different stages, correspond with our clinical experience, as shown in the wide difference in the operative mortality risk at different times.

His conclusions are: Distribution of peritoneal infection depends largely on mechanical factors. In the absence of peristalsis there is very little tendency to spread. Peritoneal rest—nothing by mouth, hence no peristalsis—leads to rapid localization of the inflammatory processes and results in either entire resolution or local abscess formation.

GUERRY.

In 1909, Guerry (4) reported 545 consecutive cases of appendicitis, treated and operated in, with a mortality of 0.3 per cent. He had but two deaths; these occurred in his first hundred cases, so that he actually had 445 consecutive cases without a death. His cases are divided as follows: 240 chronic or interval cases; 305 acute cases. Of his acute cases ninety-two were operated in within the first thirty-six hours. Then he speaks of 213 cases with a definite localized appendix abscess.

Of these 213 cases he says there were sixty-eight which were seen for the first time on the third or fourth day; in these sixty-eight cases he did not operate at once; they were all treated according to the Ochsner method, and he says that they were thereby tided through a period of great danger and were operated in at a later time when they were in the condition of a localized appendicular abscess.

Why he picked out these sixty-eight cases, he does not state very clearly; he says that most of them had a pulse of 135 and a temperature of 104° F.; so rapid a pulse and so high a temperature are almost unknown to me in this class of cases.

Let me now revert to our own work (5, 6) and see where we stand today. It is interesting and instructive to compare our results of the present day with those of our earlier reported cases; it is equally instructive to compare our present day method of treatment with that which we then employed. In other words, How did we treat these cases formerly? How do we treat them today? What were our former results? What are our results today?

First, let us consider indications for operating—when to operate, etc. At one time, early in our experience, we used to wait in certain mild acute cases, hoping that they would soon recover from an attack. Our rule was to operate in all acute cases if patients did not recover within twenty-four to forty-eight hours. Now we believe that this was a mistake. Today we operate in all acute cases without waiting. The best way of studying our present method of operating will be to take each class up separately.

Class I. Chronic or interval cases. Our method has always been simple; today it is simpler than ever. We have always used a small incision; we have always worked aseptically. We used to ligate the mesentery with several ligatures, according to its width; now we ligate it frequently with one ligature, seldom with more than two. For this purpose we employ fine plain catgut. At first we used to strip the peritoneum from the base of the appendix, ligate the appendix inside the peritoneal cuff, cauterize the orifice with carbolic acid and with alcohol, and then stitch the peritoneal cuff over the stump.

Next we used to invert the appendix and suture the peritoneum over the inverted orifice. Like many another operator I invented the "best method" of doing this; having invented it, I abandoned it, and today I employ what I believe to be the quickest, simplest, and safest method. I use it for acute and chronic cases alike. It is as follows: Having ligated the mesentery and having divided the same, so that the appendix is ready for amputation, I pass a plain fine catgut ligature securely around its base, and then slowly amputate the appendix with a Paquelin cautery (not too hot). This serves a double purpose. It thoroughly disinfects the stump which is left, and it closes the lumen of the appendix so that there is absolutely no leakage from the organ. There is nothing to sponge away or take care of.

I used to touch the base of the appendix and the appendix region with peroxide of hydrogen on a sponge; today I do nothing of the sort. I almost invariably close the abdominal wound with two or three chromic catgut sutures, passed through and through the entire abdominal wall. I believe this to be a better method than the layer suture. In this class of cases my results have been satisfactory. I have lost no patient.

Class II. Acute suppurative or gangrenous ap-

pendicitis, perforated or not, with localized abscess, or with localized peritonitis. We employ the same principles when operating in this class of cases today as formerly. We never wait; we operate immediately. We have doubtless improved our technic and simplified our method of carrying out these principles. Our attempt is to avoid diffusing the infection; in other words, we try not to make a general peritonitis of a localized one.

In these cases we make a much freer incision than for the interval operation. Our object is to remove the appendix—to protect uninvaded peritoneum. We formerly opened the abdomen by a four or five inch incision, surrounded the appendix region with laparotomy pads so as to keep all healthy intestines and peritoneum from the diseased region; then we opened the abscess slowly, within this caisson of gauze. We used small marine sponges in forceps for absorbing the pus. We aimed to do this in such a manner that the pus would practically escape into the sponges and not into the abdomen. Formerly we removed the appendix in the great majority of cases, but occasionally we did not remove it. We finished the operation by a gauze packing for the purpose of drainage.

Today our method has changed but little. We surround the area with gauze pads as formerly, we open the abscess, but with gauze tampon sponges instead of marine sponges; and we drain all acute cases, but with rubber tissue and gauze (cigarette drains) instead of gauze pads. We remove the appendix in *all* cases. We ligate and divide the mesentery and ligate the appendix and amputate it with a cautery as described above. Though we use drainage, it is less in quantity than formerly.

These operations are completed by partially suturing the wounds, sufficient opening being left at the site of the drains. Compared with former years, our work is a little simpler and much quicker. In this class of cases our results have always been good. Today they are better than in the preliminary series. Personally I have lost but two patients of this class in my entire experience.

Class III. Acute suppurative gangrenous appendicitis, with general or diffuse septic peritonitis. This is the class of cases in which our improvement has been most marked, and this is the class of cases in which our method of operating has been radically changed. Formerly we operated in these cases by making a free incision, removing the appendix; then we attempted to cleanse the entire peritoneal cavity by washing, flushing, irrigating, sponging, etc.

Today our plan is entirely different. We open the abdomen quickly by a medium sized incision. If we have a localized process the case belongs to Class II, and we treat it as such. If we find free pus, no adhesions, no local abscess, we rapidly amputate the appendix as above; we place two or three large cigarette drains, one toward the kidney pouch, one toward the appendix stump, one toward the pelvis; we pass strong retention sutures through the wound and get the patient off the table as soon as possible. We never wash, we never sponge, we never flush in these cases. At times we have Pool's tube (suction apparatus) passed into the pelvis or into any accumulation of fluid. This is done by an assistant, while the operator is performing his work. It is not allowed to interfere with, nor to prolong the operation.

There was a time when we thought that these cases of general or widespread septic peritonitis were necessarily fatal; today we know that we can save nearly all of them. We believe this improvement to be due to the complete change in our method of operating and to our improved methods of aftertreatment.

Our aftertreatment is very simple. It is essentially a combination of that employed by Murphy and that advocated by Ochsner. The stomach is washed when there is nausea and vomiting and in very septic cases. For twenty-four or forty-eight hours, we give nothing by mouth; we put the patient in the Fowler position, we use proctoclysis of plain water by means of the Murphy drip in all severe cases. But there is one thing that I lay great stress upon, and always have, and that is the emptying of the lower bowel. Unless gas is freely expelled, these patients receive an enema the night after the operation, the following morning, and as often as is necessary to keep them free from distention and distress. We never use cathartics; we use practically no drugs; and above all things we never use opium in any form. In the case of a very weak patient, we give stimulation by means of a hypodermic injection or by rectum, and if a patient has a poor pulse or a weak heart, we do not use the Fowler position.

POSTOPERATIVE ILEUS.

In our twenty years' experience at Lebanon Hospital, there have been but two or three patients requiring exploration for postoperative obstruction due to kinking or adhesions. We strive to place our drains so they will not cause mechanical obstruction. We have never packed gauze or other material among the coils of the intestines. Our drains are all placed to the outer side; that is to say between the intestines and the parietal peritoneum. Of the severe type of postoperative adynamic ileus we have had but little experience. Personally I have never given a dose of eserine or hormonal.

If a surgeon has much experience with postoperative ileus, I advise him to look to his methods and to change them. I believe this form of ileus to be due to spreading peritonitis; to septic infection; to excessive manipulation at the time of operation; to faulty placing of drains; to failure to empty the lower bowel before it has become overdistended by gas; and to the use of morphine or opium.

I cannot leave this subject without again recording a strenuous protest against the use of opium in this disease. I am firmly convinced that the use of opium before operation is the cause of thousands of deaths every year. It deprives the patient of pain, which is a beneficent danger signal; it lulls him to ease and inaction during that period when operation is most demanded, and in which we all know operation to be most safe. Its employment after operation is one of the principal causes of postoperative ileus. Not only do I believe it to be a serious menace to life in these conditions, but I know it to be a most potent factor in the production of pain and discomfort. Without opium these patients may

be comfortable; with opium they are prone to suffer great torment.

In closing, let us see where we are united in our thoughts—and let us see what principal differences of opinion are yet to be settled.

First. We are all agreed that operating in the chronic or interval cases is thoroughly safe; in this class of cases death should not occur except when due to an unavoidable surgical accident.

Second. We are all agreed that operation in the early hours of acute cases is a thoroughly safe procedure. In the hands of a skilled surgeon these cases will show almost no mortality.

Third. We are all agreed that operating in the very late stages is a very safe procedure; by this time the patient's powers of resistance have been fully established and Nature's means of defence have played their part; the processes have resolved themselves into localized peritonitis or localized collections of pus; often the pus has but little virulence, sometimes it is sterile.

Fourth. We are *not* agreed on the method and manner of operating. There are two or three factions; one, which I am glad to say is ever increasing in size, believes in a quick definite procedure—removing the appendix and stopping the leak, thus removing the cause; making provision for drainage, inflicting as little shock and traumatism as possible, and depending upon Nature to work out a cure, the cause of the trouble having been removed—every effort being made to avoid disseminating, or rendering general a localized process. The other factions, however, attempt to supplant Nature by art, and they inflict an undue amount of traumatism. They endeavor to cleanse the entire peritoneal cavity by washing, flushing, scrubbing, sponging, etc.

Fifth. We are *not* agreed as to the best time for operating in acute cases. Personally I believe in immediate operation. I should like to operate in all acute cases in the first twenty-four hours, but unfortunately we do not see these cases at that time, as a rule. Most of the acute cases come to us late. I do not agree with Ochsner and Stanton that all cases of appendicitis are localized at first. Many of our cases of fulminating appendicitis had spreading peritonitis from the beginning, which became progressively more and more generalized. I *do agree* with Ochsner that we should withhold from these patients drugs, cathartics, and food; but I also believe that we should remove from these patients a gangrenous, perforated, leaking appendix at the earliest possible moment.

One would be short sighted and narrow minded not to pay due attention to the wonderful results obtained by Ochsner and by his follower, Guerry. If we cannot approach these, working on our own hypotheses, it becomes our duty to abandon our theories and to change our methods, for we must be sure that we are doing the best that can be done for our patients.

But among the patients that have been operated on by me, personally, there have been but ten deaths, only one of which occurred during the past ten years. I believe that an analysis of the cases reported above will show that we are working on the correct hypothesis, and that we were formerly working on the correct hypothesis except as regards those cases which come under the head of Class III. In Class I and Class II, our results have always been good. In Class III, our results formerly were bad, today, they are good.

We feel that the *method* of operating is a most important factor in determining the mortality rate. We have not found that the *time* of operating is so important a factor as Ochsner was led to believe. We fully appreciate the importance of operating in these cases as early as possible, but, unfortunately, we have to take them as they come, and we believe that prompt operation is safer for the patient than delay at any stage of the disease.

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540 PARK AVENUE.

THE OPERATIVE MORTALITY IN APPENDICITIS.*

Some Factors Which Have Caused a Decrease Therein.

BY M. S. KAKELS, M. D.,
New York,
Surgeon, Lebanon Hospital; Consulting Surgeon, [illegible] Hospital.

In 1886, in the *American Journal of the Medical Sciences*, Fitz published an article in which he urgently suggested early intervention in the treatment of acute appendicitis. Since then the advocacy of early operation has received widespread attention. American surgeons did splendid work in this field, and were among the pioneers who advocated early surgical activity. This early operative interference was based upon the pathological processes going on in an inflamed appendix, the rationale of which was, that it is safer to operate before the infection had developed into a gangrenous or suppurative condition, and before the inflammatory process had spread into the surrounding tissues.

Great progress has been made in the pathological study of this disease. With this progress our ideas concerning the treatment have differed with the advancement in the surgical technic of abdominal work. The operative methods in vogue twenty years ago have radically changed and the mortality since then has greatly diminished. From twenty per cent. the death rate in well organized clinics has fallen to two per cent.

The anatomy of the region of the appendix is so familiar to skillful members of the profession, and aseptic technic is so well developed that little fear of results need be entertained unless there are com-

*Read at a meeting of the Medical Society of the Borough of the Bronx, March [illegible]

plications of greater or less severity. The patient's life is more endangered by mistakes in the diagnosis than in an operation when the latter is placed in skillful hands.

We may assume with a fair degree of confidence that the fate of the patient lies in the hands of the physician who sees him in the beginning of an attack. Physicians ought to be able to recognize appendicitis, and having recognized it, should be able properly to treat it. There are still deaths, however, and the deaths are in a large proportion due to failure to recognize the disease in its early stage.

Why does failure to recognize this disease in its early stage occur? We have no hesitancy in saying that the fault lies in so often assuming that a pain in the abdomen is due to other conditions, such as indigestion, gastritis, wind colic, gallstones, renal colic, oophoritis, salpingitis, etc. Innumerable articles have been written on the differential diagnosis of appendicitis. It does not seem possible to add anything new, and a further contribution would only reiterate what has so often been written and dwelt upon.

The subject of appendicitis constitutes by no means a closed chapter, however, for among some physicians the procrastinating, and temporizing method in the management of this trouble still holds sway. Fortunately these physicians constitute but a small minority. To emphasize the fallacy of a waiting policy is one of the objects of this paper and the duty of every surgeon. This point especially needs to be impressed upon the mind of every medical man. The last word has not yet been said, because there are still some who do not realize the impending danger that may accompany an acutely inflamed appendix. There should be no diversity of opinion regarding prompt surgical interference when once the diagnosis is made.

The greatest factor for safety to life exists in the early surgical treatment of a diseased appendix. With its early removal there is practically no mortality, the postoperative discomforts and complications are least, and the period of disability is shortest. There are some, though, who, in the beginning being uncertain of their diagnosis, maintain that if the patient exhibits no urgent symptoms demanding immediate surgical interference, the case can be treated on the expectant plan. Others again, in the hope that the inflammation may localize itself, suggest a waiting policy with the idea of putting their patient in a more favorable condition, believing it is wisest to operate after the inflammatory condition subsides. This might be true if one could picture to oneself accurately the condition of the appendix and could predict what would happen in the next few days.

To offset this delusion, let me say, dogmatic though it be, that every patient, when the diagnosis of acute appendicitis is made, presents symptoms which are indicative of a pathological process going on in the appendix, the progress or termination of which no one on earth can prophesy. Therefore, the surest and safest guarantee from any impending danger is immediate operation.

Murphy, twenty-five years ago, made the plea for early operation, and stated that it was his conviction that before many years every case when diagnosed would be immediately operated in, the appendix ligated, if possible, and amputated. He also stated that this operation was the only guarantee that a patient could have of safety from the impending danger of the disease and security against its return.

The pathology, symptomatology, and diagnosis are founded upon scientific bases, the outcome of observations and studies of clinicians and operators in thousands of cases. From these studies and observations *in vivo*, it was but natural to conclude that the method of treatment was a surgical and not medical one.

Since the consensus of the majority of surgeons, in the treatment of an acute infective process of the appendix, is in favor of its early removal, we all must concede that it is essential to make a positive diagnosis. It does not require any high degree of diagnostic skill to decide for an operation if we but remember the classical train of symptoms that point to the diagnosis; sudden and generalized pain over the abdomen, gradually becoming localized, nausea or vomiting, general abdominal sensitiveness, local rigidity, elevation of temperature, leucocytosis, and rapid pulse. These are the chief symptoms that render the diagnosis comparatively easy. With a careful analysis of the clinical history, with special importance placed on the occurrence of the symptoms, one is more than reasonably sure of the diagnosis. In nearly every instance, with the foregoing train of symptoms, there is sufficient reason to suspect a diseased appendix, and realizing the dangers that lurk behind, one should emphasize the need of immediate operative interference.

This may appear radical, but let me again say, that appendicitis is a surgical disease and should be treated surgically. The severity of the symptoms should not be our chief guide as to the wisdom of operating at once. The physician recognizing the disease in its early stage offers his patient a degree of security and successful outcome by advising immediate operation greater than he who advises delay. The risk, with modern ideas of asepsis, has been exaggerated. Ten years ago, the mortality was greater than it is today. Then physicians and surgeons alike who were in favor of an operation in cases seen early (twenty-four to forty-eight hours) procrastinated and counselled delay in those cases seen in the later stages of the spreading inflammatory process. Today our views regarding the time to operate have from experience radically changed, and we decidedly incline to the view of a great many others that an operation should be performed as soon as the diagnosis is made, no matter in what stage of the disease we see the patient.

At the same time, we are not unmindful of, and appreciate the dangers incident to operation in the presence of diffuse peritonitis, and we are fully impressed with the fact that the risks are greater than when the process is localized, yet we believe, from our experience in many cases, that the dangers are overestimated; that with the present technic of ultrarigid asepsis and minimization of manipulation, the risks have been exaggerated. We, therefore, should not be swayed from operating, even if an active or spreading process is going on. Present day statistics do not disprove this assumption, for,

as stated above, the mortality, taking a series of cases operated in in all stages of the disease, has been reduced to about two per cent.

I believe that this might still further be reduced if those severe cases were not handed over to the surgeons in an almost moribund state, in a condition in which the prospect of successful result seems hopeless and, to say the least, not the brightest.

Roux, of Lausanne (*Transactions of the Swiss Surgical Society*, March, 1913), stated that the prognosis in the course of an attack of acute appendicitis is uncertain. Operations for acute appendicitis should not be performed by the general practitioner, because even in the early operative interference, one may meet with technical difficulties—out of 454 cases he met severe technical difficulties in 152.

De Quervain (Basel) gathered the statistics of operation from the principal Swiss hospitals in the last five years. Out of 5,097 cases—

	Mortality. Per cent.
1,723 were operated in on 1st day of illness.....	0.69
1,389 were operated in on 2d day of illness.....	4.7
788 were operated in on 3d day of illness.....	10.7
1,197 were operated in on 4th and following days..	21.2

Average mortality of operated cases 8.1 per cent. Compared with the statistics of 1895, the average death rate had been reduced from twenty-one per cent. to 8.1 per cent.

De Quervain avers that the decrease in the mortality was due, not only to improvement in technic, but to the increased number of cases operated in during the early stages of the disease. He states that the prognosis in those cases operated in on the first day of an attack is good; on the second day uncertain. For practical purposes the anatomico-pathological condition of the appendix must not be considered as a guide for operative interference; time is the essential factor.

Kocher (Bern), from personal experience gained in 1,513 cases, was of the opinion that an acute appendicitis exists when the inflammatory process is confined to the appendix itself. Out of 279 operative cases in this category, six ended fatally. Among those operated in during the first and second days of the attack he had no deaths.

Every primary acute attack is characterized by a hemorrhagic inflammation which endangers the mucous membrane, makes it vulnerable to organisms, and may lead to necrosis of the walls of the appendix. Keeping this fact in view, every primary acute attack of appendicitis must be regarded as a serious affection and a menace to life. In cases with abscess formation Kocher merely incises and drains without performing the radical operation. Out of 111 such cases he lost seven. In cases accompanied by diffuse peritonitis, he removed the appendix if possible. Of 113 such operative cases he lost sixty or fifty-three per cent.

Von Arx (Olten), since 1904, does the radical operation without considering the stage or severity of the attack and, in 162 cases without perforation, he had one death or 0.62 per cent.; in seventy cases with localized abscess, ten deaths, or 14.25 per cent. mortality, and in fifty-eight cases of general peritonitis, thirty-one deaths or 53.44 per cent. mortality. We gather from these statistics that the decrease in the mortality was mostly due to the early operative influence.

The mortality in the London hospitals from appendicitis, as reported by H. J. Paterson in the *Lancet* in May, 1911, was over ten per cent., and probably nearer twenty per cent. He had no hesitancy in saying that the great majority of these deaths were preventable. He also stated that the clear symptomatology of an attack of appendicitis is fairly well established, but the positive indications for the most opportune time for operation varied with the different surgeons.

These statistics surely show that the controversy over the best time to operate has not as yet been settled among the English surgeons, and this may be one of the principal reasons why their mortality is so great. To American surgeons due credit must be given for having early recognized that the most important factor in a successful outcome, is the period of time between the onset of an attack and the operative relief. It is for this reason that the operative mortality has been so greatly reduced among American surgeons.

The advance in pelvic and abdominal surgical procedures has been progressing remarkably along the line of improvement and perfection of technic. With the advent of asepsis and antisepsis, older methods have been modified and improved, and particularly in appendicitis operation have these advancements helped to give better results.

Other factors there are, which also enter into the reduction of mortality, of postoperative complications and discomforts, and shortening the period of disability. I need but mention the forms of anesthesia—the introduction of Fowler's position and the continuous rectal infusion, or Murphy drip. Other agencies, the precautions in operative technic, such as little handling as possible, avoidance of all unnecessary traumatisms and exposure to the air, undoubtedly have an added influence. As a surgeon once said, "masterly inactivity is conservative surgery. Too radical surgery often results in disaster." Notwithstanding all these precautions, we must remember that certain patients will seemingly withstand a great amount of sepsis, while others die from very slight infections. Over the vital powers of the patient we have no control.

In the preparation of the patient, our ideas and methods have also changed. There is less elaborate preparation by scrubbing and use of antiseptics, and the patient is not weakened by previous purging. In operating, we endeavor to minimize as much as possible injuries to the viscera by less handling, thereby avoiding destruction of delicate tissues and inhibiting exudates and adhesion of opposing surfaces, which so frequently lead to postoperative paralysis and obstruction.

The less handling and injury done at operation, the greater are the chances that no adhesions will be formed. All unnecessary wounds of the visceral and parietal peritoneum are avoided, and prolonged exposure of the intestines to cold air is guarded against. If there is simply a serous exudate, after the appendix is removed, the wound is entirely closed, leaving the peritoneum to take care of the fluid.

If there is a purulent exudate, a cigarette drain

is inserted down to the stump and so placed that it does not lie between contiguous coils of intestine, but rather along the abdominal wall. Another cigarette drain is inserted into the pelvis, also along the pelvic wall, after as much of the pus as possible has been removed. This method of placing the drain obviates in a great measure stasis or ileus. The drains are left only until a channel is formed through which the septic material may escape. The position of a patient after an operation is also an important factor in a successful outcome. The patient is therefore placed in a position which will most favor drainage and exit of the discharge, that is the ventral or Fowler position.

In every instance we make it a rule to remove the appendix, unless great technical difficulties are encountered, or the patient's condition is such that further manipulations endanger life. We have no fear of inviting peritonitis by the free separation of contiguous adhesions in attempting to liberate the appendix, for by its removal absorption of toxic products from the appendix ceases, and the tendency to postoperative complications, such as subphrenic abscess, pyelphlebitis, empyema, and liver abscess are avoided, because the offending member, the source of infection, has been eradicated. In the hands of skillful operators, familiar with acute suppurative conditions within the abdomen, there need be no fear.

The technic of operation for appendicitis is very simple, but observance of the general principles involved in the various steps of the operation is important to its ultimate success. At Lebanon Hospital, observance of the above mentioned principles has had the result that within the last two years the mortality, taken as a whole on all cases, has been reduced to about two per cent. From May 1, 1909, to January 1, 1914, 582 cases were operated in. There had been out of this number twenty-three deaths—not quite four per cent.

Taking those cases operated in during the last two years, the mortality has been reduced to two per cent. These cases all were operated in the services of Doctor Syms, Doctor Roth, and myself. In the last series of 123 consecutive cases operated in by myself, my assistant, or house surgeon under my supervision, there have been no deaths.

There is no need of going into the details regarding the different forms of appendicitis, the pathological and bacteriological findings in individual cases, nor of tabulating them as they have come under our observation. It will suffice to say that in an active hospital service such as we have, where emergency cases furnish a large part of the work, we see cases in all stages of the attack and every case is operated in irrespective of the condition, unless moribund.

Practically this percentage of recoveries shows results which warrant us in operating as soon as we make the diagnosis. This low percentage is all the more noteworthy because we do not see these patients in the incipient stage, and the most essential factor, namely, early operation, is not under our control in every instance. The condition of patients on admission to the hospital varied, depending almost entirely upon the degree and length of time the disease existed, consequently our good results in Lebanon Hospital are in a great measure due to the observation of the principles and technic briefly mentioned above.

We do not speculate as to whether we should wait until the inflammatory symptoms subside, for we thereby jeopardize the life of the patient. A waiting policy may save some from being operated upon for the time being, and may be justifiable in a few instances where surgical aid is unattainable, but where surgical aid is at hand there should be no time limit after the diagnosis is made in order to watch for symptoms to abate.

In conclusion, let me say that the various factors in order of their importance which are most essential in reducing the mortality from appendicitis are:

First. Certain diagnosis and early operation.

Second. As little manipulation as possible in the removal of the offending organ, the source of infection.

Third. Fowler's position.

Fourth. The Murphy drip.

35 East Sixty-first Street.

THE ASSOCIATION OF SYSTEMIC DISEASE WITH METASTATIC OPHTHALMIA.

By G. Oram Ring, A. M., M. D.,
Philadelphia,

Ophthalmic Surgeon, Protestant Episcopal Hospital; Consulting Ophthalmic Surgeon, American Hospital for Diseases of the Stomach and American Oncologic Hospital.

As is well known, there are certain systemic conditions which by reason of the transference of disease process by way of the blood or lymph channels are capable of inducing violent and widespread inflammation of the eye tunics. A plea for the appreciation of this relationship, its grave significance, the need of cooperation between the general surgeon or physician and the specialist at the first indication of its approach, and finally the possibility of prophylactic treatment in certain bacterial conditions primarily remote from the eye in the endeavor to prevent so serious a complication, is the object of this brief communication.

The lodgment of a septic embolus carried through the blood stream to the capillaries of the retina or choroid with the induction of minute hemorrhages, an inflammatory reaction, the formation of pus and necrotic degeneration rapidly extending to the anterior tunics of the eyeball; this constitutes the usually recognized tragic picture which is probably best called metastatic ophthalmia. The systemic condition which induces it, frequently marks it as one of the most fatal but fortunately one of the rarest of ocular diseases.

To quote Alters (a), the triad of factors necessary for its production are, pyemia, embolus, and stoppage. In some cases less violent, we have a confined localized abscess formation, with no involvement of the anterior ocular coats, sometimes producing the so called pseudoglioma. A sacred circle has been drawn around the embolus, in recognizing it as the sole explanation, by most ophthalmic authorities, of the induction of this condition; no other explanation in any case being seriously considered;

the milder cases only being relegated to the sphere of the toxin.

Bacteria do not act mechanically, but by their intracellular toxins, many of which have been isolated, and have produced lesions summarized by Mallory as follows (b): The effects which injurious agents, especially toxins secreted by bacteria, produce on the tissues are manifest in four different ways:

1. By degeneration or necrosis of cells.
2. By exudation from the bloodvessels.
3. By proliferation of cells.
4. By phagocytosis.

Mallory has proved that strong toxins produce degeneration or necrosis of cells with exudation, and weak toxins produce proliferation and phagocytosis; and that the massing of large numbers of bacteria will produce a concentrated toxin capable of causing necrosis and purulent exudation.

The condition under discussion manifests itself as a sequel of many systemic diseases, in addition to surgical and post partum infection, such as septic endocarditis, influenza, nasal sinusitis with pus formation, parotiditis, cystitis, otitis media, synovitis, scarlatina, measles, diphtheria, scorbutus, variola, erysipelas, typhoid fever, pneumonia, anthrax, cerebrospinal meningitis, gonorrhea, so called Weil's disease, mixed infections, suppurating glands, and at times results from more trivial conditions, such as furuncles and the suppuration attendant upon the extraction of a tooth. In children, suppuration of the umbilical cord or vaccination may, according to Alter, give rise to pyemia with metastatic ophthalmia. Unfortunately many reported cases give no account of the associated systemic infection.

In rare cases of exanthemata, the vision is preserved, and not infrequently in cerobrospinal meningitis; although, as regards the latter condition, we are apt to have an involvement of the eye as an extension by continuity down the vaginal space, rather than a true metastasis.

The organisms responsible for the development of metastatic disease of the choroid are streptococcus, staphylococcus, pneumococcus, meningococcus, pneumobacillus, influenza bacillus, typhoid bacillus, colon bacillus, and mixed infection. Cheesman and Maltzer (c), found they could cause bacteria to settle in any place they might select by injuring tissue at that place. Flexner and Reed (d) believe focal necrosis to be due to direct action of toxalbumins, previous injury of the vessel wall allowing transudations to take place. Pearce (e) believes it evident that while embolism is an important factor in the production, it is not by any means essential in all cases. He regards it as proved that bacteria find foci of altered or injured tissue favorable to their multiplication.

I mention these views as important and as indicating that many of these cases can be explained upon the ground of a general bacteriemia. Indeed the view of Mallory may point to the explanation of why Romberg (f) found only one case of panophthalmitis in forty-two cases of acute malignant ulcerative endocarditis with the blood containing fibrin masses, bacteria, and disorganized thrombi, conditions that could easily produce emboli, yet failing to cause more cases than profound infections distant from the focal lesions.

Axenfeld (g), it will be remembered, proposes the following classification:

1. Cryptogenic septicopyemia,
2. Infectious diseases,
3. Surgical pyemia,
4. Puerperal pyemia.

The latter two are essentially the same, each being a septic process. It is true that in many instances the bacteria carried through the blood stream to the eye capillaries, by their presence or by their evolved toxins, induce the destructive inflammation.

Illustrative of the grave possibilities of a furuncle is the case of Augstein Bromberg (h), of a strong healthy man, aged twenty-six years, with a furuncle of the neck of twelve days' duration, in whom following a chill, a violent metastatic ophthalmia developed, rapidly destructive in character, the exciters of the pus having found their way into the retinal and choroidal capillaries, the bacterial cause being in all probability streptococcus or staphylococcus.

As regards the association of pyorrhea with involvement of the uveal tract, de Schweinitz (i) believes that proper investigation will probably reveal indicanuria, acidosis, and in general terms the usual signs of so called autointoxication, and while treatment to relieve the perverted metabolism may be of value, there is no evidence of a satisfying character that the acidosis, etc., is the cause of the septic mouth condition. It is more likely that oral sepsis originates the autoinfection as well as the local inflammatory processes in joints and uveal tract disease.

Increasing experience in the study of metastatic choroiditis resulting from puerperal pyemia, will probably show that the ocular disturbance is due rather to the general bacteriemia than to a specific lodgment of embolus. So called post partum ophthalmitis usually occurs about the sixth day after delivery, rarely after the end of the second week. It is either unilateral or bilateral, the latter being fatal in from eighty-five to ninety per cent. of cases. The unilateral cases give much better results as regards life, but the eye involved is usually lost; de Schweinitz (j), in the *Annals of Ophthalmology* for 1907, reports a recovery from puerperal pyemia associated with a bilateral metastatic ophthalmia; in this case, however, there were ring abscesses in each cornea followed by panophthalmitis.

Two monocular cases are reported in the Norris and Oliver (k) system as occurring after normal confinement in perfectly healthy young women. The disease progressed to a point of producing large rounded bluish white flocculent masses like packed cotton wool. Neither showed signs of external inflammation. Such a condition was probably not due to a septic embolus, but possibly to a metastatic disorder of intestinal origin.

In the conditions we have been discussing, violent poisons are present and circulating in the bloodvessel system, and must be neutralized by every known process. Hexamethylenamine and helmitol are excreted in the anterior chamber in about three hours. The excretion is increased by the use of a mydriatic locally, and, while according to Gradle (1) the concentration in which hexamethylenamine and helmitol occur in the anterior chamber will not inhibit the growth of virulent organisms in the test tube,

yet it is believed it will weaken them and allow them to be more easily killed by the normal antibodies in the various secretions.

In addition to general measures directed to the gastrointestinal tract, kidneys, skin, and circulation, hypodermoclysis being of recognized value in lessening the concentration of the toxins, vaccine and serum therapy are of distinct importance and should be so recognized and exhaustively tried, although their exact value has not been definitely established. One difficulty in their use, from the viewpoint of the eye surgeon, is the length of time required to ascertain the offending organisms after the eye is involved, before serum or vaccine treatment can be instituted.

It is recognized that, whenever possible, an autogenous vaccine should be given precedence over a stock vaccine. Let a smear be taken from the focus of infection, and the result should be known in thirty minutes. Then let the stock serums or vaccines be given at once upon making a definite diagnosis; and, at the same time, have prepared an autogenous vaccine for use when a second dose is indicated. In the matter of the coli vaccines, it is well known that the most distinguished authorities decry the use of any but the autogenous. It must be remembered that there are probably from twenty-five to thirty varieties of this bacillus, which are not to be distinguished morphologically; therefore, we must, unfortunately, wait until an autogenous culture can be prepared, or use the polyvalent variety which may be weak in the very organism that is inducing the serious infection. This, it seems to me, may explain why the stock vaccine of this series of organisms has been of so little use.

If if is true that the majority of cases of choroiditis are due to a primary bacteriemia, producing a local cellular degeneration or necrosis, fluid extravasations, weakened arterial walls, hemorrhages, the local invasion of leucocytes and exudation, with, finally, abscess, and that emboli are less frequently the active factor; if the condition of the eyes can be an indication of the virulence of many cases of infection; then there should be, if necessary, repeated examination of the eyes as an aid to diagnosis, as pointing to the virulent character of the infection, and as an indication for more active systemic treatment. It is regretfully recognized that up to the present we have no absolute specific in the more rapid and virulent types of the disease. In such cases, however, particularly those of the streptococcic variety, large doses of the serum should certainly be tried.

Mayou (*Annals of Opthalmology*, October, 1912) (o) suggests that in streptococcus infections of the eye, polyvalent serum treatment is most useful; and that treatment should be instituted early. As regards the use of vaccines in the treatment of intrinsic disease of the eye, Bryon emphasizes the importance of using larger doses; and thinks that when so used there is less danger of the production of the negative phase. When we are dealing with a condition due to a pyogenic organism, it is best, as insisted upon by the same authority, to use a specific vaccine from the focus of infection (autogenous); but in a disease in which staphylococci occupy a causative relation, stock vaccines are efficient. Bryon reports fair success in using the pneumococcic stock vaccines, giving, as soon as the diagnosis is made, twenty-five million stock pneumococci vaccine.

As pointing to a promising field for vaccine treatment, I wish to refer to a case reported by Bentley (n), of Seattle, of metastatic ophthalmia due to the colon bacillus, in which the usual tragic dénouement of a panophthalmitis resulted; and in connection with it, to bring to the attention two cases of metastatic inflammation associated with a colon bacillus toxemia, by Mr. Arnold Lawson, of London (*Medical Press*, July 26, 1911) (m). In the one case inflammation did not proceed to a panophthalmitis; one was optic neuritis, and the other an infiltration of the cornea with extensive exudate. On the fifth day of primary infection, a mixed vaccine of bacillus streptococcus catarrhalis and gonococcus was tried without effect. The colon bacillus was present in the urine in vast numbers. A vaccine of the bacillus coli was injected on the ninth day; the conjunctival discharge rapidly decreased, and the cornea cleared. Five injections were given: the first, of five millions; and the last two, each 100 million. The bacteriemia rapidly improved after the first injection.

As pointing to the frequency of puerperal sepsis, the value of serums and vaccines in its treatment, and consequently of the possible prophylactic value of such treatment in the prevention of metastatic ophthalmia, a personal communication was addressed to a number of distinguished specialists in obstetrics and gynecology of Philadelphia. The valued replies are herewith presented:

Dr. E. E. Montgomery, professor of gynecology in Jefferson Medical College, advises me that he has never seen a case of metastatic ophthalmia as a sequel of puerperal sepsis, but adds that in such a case he would immediately use antistreptococcus serum until vaccine could be secured, and expresses great confidence in both serums and vaccines.

Dr. Barton Cooke Hirst, professor of obstetrics at the University of Pennsylvania, has seen but one case of metastatic ophthalmia as a sequel of puerperal sepsis. In that case the eye was lost. Doctor Hirst states, however, that he has used the antiserums very extensively in puerperal infection, occasionally, although not invariably, with excellent results. In his experience the vaccines are not so successful except in subacute inflammation of the large joints, in which case he has seen vaccines give brilliant results.

Dr. Richard C. Norris, surgeon in charge of the Preston Retreat, advises me that in 8,000 consecutive obstetric cases there is no record of a case of metastatic ophthalmia, and that he has never had a case under his care in private or hospital practice. As Doctor Norris suggests, this negative report may be of value and is, in my judgment, an eloquent tribute to modern methods exercised by these masters in the practice of obstetrics.

Dr. William E. Parke, consulting obstetrician to the Protestant Episcopal Hospital, has not seen a case of the disease in question as a sequel of puerperal sepsis, but has used an autogenous vaccine in one case of sepsis without eye involvement, but without being impressed with its value, the patient having died after 114 days' illness. It is quite possible, however, that the treatment may have prolonged the life of the patient.

Dr. J. A. McGlinn writes that he has seen a large number of septic cases, both after abortion and labor at term, but has had none with metastatic eye infections. On theoretical grounds he regards serums as proper treatment, but in the dose usually advised thinks they do little good. He uses serums and vaccines only occasionally and thinks the large doses advised by Hirst, make the cost to the ordinary patient prohibitive.

Dr. J. Osborn Polak, professor of obstetrics in the Long

Island Medical College, is quoted by Doctor McGlinn as a strong advocate of vaccine treatment, an enthusiasm he does not share. McGlinn further states that some men even believe that it is bad practice to empty the uterus in the presence of infection, though it contains some of the products of conception. He advises the general upbuilding of the patient and the avoidance of anything, even surgery, that will lower vitality. His treatment further consists of stimulation when needed, forced feeding, measures to combat high temperature, ice to relieve pain, and having the patient in bed in the open air.

By reason of the fact that the infection from puerperal sepsis is so difficult to combat, I felt it wise to give in some detail the opinion of these distinguished representatives of this branch of professional work.

Rigid antisepsis in surgery and obstetrics is eliminating much of this form of disease; but if the general physician, surgeon, or obstetrician, into whose hands these urgent cases of septic disease may fall, will immediately have them studied from the bacterial viewpoint, and promptly institute serum and vaccine therapy in addition to the most approved general methods (for instance those outlined by McGlinn in the puerperal forms of disease), aside from the value of such treatment as influencing the systemic infection, it is quite possible that the general regime plus the special therapy may act in many cases as prophylactic against transmission of the poison to the ocular tunics. Assuming that such treatment will be used, we believe that it is not unlikely that the opportunity afforded the ophthalmic surgeon of seeing cases of metastatic choroidoretinal disease will be still further reduced.

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2,014 CHESTNUT STREET.

PURSESTRINGING OF THE SMALL INTESTINES INTO A DISTANCE OF FIFTY CENTIMETRES.*

Suspension of the gastrointestinal tract from the lips to the anus on a tube four feet long.

BY I. O. PALEFSKI, M. D.,
New York.

(From the Gastro-enterological Department, Montefiore Home Hospital, New York.)

It was always a point of interest to me in my duodenal work to find how deeply varying lengths of tubing will pass into the jejunum without untoward effects. On June 29, 1913, forty-eight hours after the introduction of a twelve foot modified duodenal tube[1] into the patient, B. H., a woman, twenty-eight years of age, the latter called my attention to a loop of tubing protruding through the anus. Having found this to be true, it, at first, occurred to me that the tube might have been severed either by intestinal peristalsis or by digestion of its wall while traversing the small intestines. I proceeded to pull the anal part out through the rectum, therefore, recovering eight feet of tubing, when, to my great surprise, the buccal end began to move into the mouth, which at once convinced me that the ends were in continuity. The ease with which I did it inspired me to reverse the procedure, and gently pulling on the buccal end of the tube caused the eight feet of tubing outside of the anus to pass back into the rectum, large and small intestines, stomach, and mouth, leaving the anal end only two inches long. The eight feet of tubing now protruding through the mouth was cut off, leaving just four feet inside from the lips to the anus. This was done in the presence of Doctor Wachsmann, medical director of the Montefiore Home, and of the house staff. To make the inside tube visible on an x ray plate, it was injected at the buccal orifice with fifteen c. c. of a suspension of bismuth, the latter flowing out in a few seconds at the anal orifice, and an exposure was then taken, with the result shown here in the figure. Throughout the entire procedure the patient experienced no



[illegible] the short course of the mesenteric attachment of the small intestines. [illegible] It is between these two points that the entire small intestines, including the duodenum, are ruffled or pursestringed, caused by pulling at the anal loop of the tube while the buccal end was being held fixed by the mouth, esophagus, and stomach. Lines C, D, and E outline the ascending, transverse, and descending colon, moderately shortened, but retaining their fixed position. It should be noted that the coils of the intestines are obliterated. The possibility of a perforation was considered and excluded.

*Shown at the Section in Internal Medicine, New York Academy, December [illegible], 1913.

[1]Palefski: New and Improved Duodenal Instruments, NEW YORK MEDICAL JOURNAL, October 18, 1913.

discomfort, and has been in her usual state of health ever since—nine months.

CONCLUSIONS.

The ease with which this was performed makes me believe that the same thing could be accomplished in many other cases in a normal gastrointestinal tract free of adhesions. Should this be found so, perhaps we could utilize this procedure for therapeutic purposes, in painting or washing the intestinal mucosa with medicinal reagents, in specific or tuberculous ulceration, in iliac or colonic stasis; or to serve as a mechanical stimulus in constipation.

MONTEFIORE HOME, GUN HILL ROAD, 210TH STREET.

CARDIOSPASM WITH DILATATION OF THE ESOPHAGUS.*

With a Report of Five Cases.

BY M. E. SMUKLER, M. D.,
Philadelphia.

Prior to the last decade, before the introduction of our modern aids to diagnosis, such as the x ray, esophagoscope, and laboratory technic, many cases of cardiospasm with dilatation of the esophagus were evidently not recognized, as indicated by the few cases reported in the medical literature of our country. The failure to recognize a symptom complex which is almost pathognomonic in these cases, was probably due to the obscurity of knowledge in this condition, the rarity of cases reported, and the failure of textbooks on general medicine and surgery to mention it, while special books dealing with diseases of the gastrointestinal tract almost ignored or passed very briefly, if at all on the subject. These facts, together with the crude methods of diagnosis in vogue at that time, such as the apparent failure to meet an obstruction while passing a stomach tube or esophageal bougie, easily explain why so many cases were not recognized prior to this decade. The fact that so many have been reported in recent years leads us to suspect that a number of individuals affected with this rare disease were formerly called "neurotics," a monument to our ignorance which is gradually but surely crumbling under the onslaught of our modern scientific investigators.

That our knowledge of this condition was limited and unsatisfactory, can easily be shown by the variety of titles under which these cases were reported in the literature, such as simple ectasia; stenosis spasta fixa or stenosis spasta migrans; spindle shaped dilatation of the esophagus without anatomical stenosis; congenital dilatation of the esophagus; idiopathic dilatation of the esophagus; spasmogenic diffuse esophagus dilatation; paralytic dilatation of the esophagus; fusiform, diffuse, spontaneous or spindle shaped dilatation of the esophagus without organic stricture.

The first authentic case was reported by Burton, in 1821. It was not, however, until 1871 that a good description of this condition appeared, by Hamburger, but mention was not made of the accompanying dilatation of the esophagus, usually present in these cases. A few years later, more light began to dawn on the subject, for, in 1874, Ziemssen and Zenker (2) published a series of seventeen cases collected from the literature, under the title of "simple ectasia," dwelling upon the fact that they observed no underlying stenosis. Their investigations, however, were made mainly from post mortem records, as they knew very little about the clinical history of the patients. A more intimate knowledge of this condition was observed in 1882, when Strümpell's and Mikulicz's classical observations appeared, when both conclusively demonstrated, that the so called idiopathic dilatations of the esophagus were due to or associated with a cardiospasm. From these observations Meltzer (3) concluded that the accompanying dilatation of the esophagus in cases of cardiospasm was a stagnation ectasia, due probably to some disturbance of the innervation regulating the mechanism of the cardia.

This hitherto apparently unnoticed relationship between the cardiospasm and the dilatation of the esophagus divided the investigators into two schools, one led by Meltzer (3), who held that the cardiospasm was primary and the accompanying dilatation of the esophagus was secondary, resulting from the mechanical pressure of the retained food, together with the unsuccessful efforts of deglutition observed in so many of these cases. This theory has many advocates and rightfully so, for if a careful history is elicited from the patients, they will tell you that, as their difficulty in swallowing increased, they simultaneously regurgitated larger amounts of food. This theory has not as yet, to the best of my knowledge, been confirmed by a series of röntgenograms, to show the gradual dilatation of the esophagus as



FIG. 1.—Röntgenogram showing an early stage of carcinoma of the lower end of the esophagus and the cardiac end of the stomach.

*Read before the Philadelphia Clinical Society, Philadelphia, December 1, 1915.



FIG. 2.—Röntgenogram from patient shown in Fig. 1, showing patient swallowing capsules containing olive oil to demonstrate an undilated esophagus. Röntgenogram taken in an advanced stage of the disease, shortly before the death of the patient.

the dis ase advanced, but it has been conclusively demonstrated recently, that the dilatation persists for a number of years after the cardiospasm has been successfully treated (4).

Still, in the face of these most convincing facts, another class of observers, led by Rosenheim (5), took exception to the theory advanced by Meltzer, maintaining that the dilatation of the esophagus precedes the cardiospasm, which they held is due to a congenital or acquired primary atrophy of the esophageal muscles, pointing out the fact that in carcinoma of the esophagus or the cardiac end of the stomach, dilatation or sacculation of the esophagus very rarely occurs (see Fig. 1). It may be interesting to state here, that in four cases of carcinoma of the esophagus which have been under my observation during the past year, röntgenograms show that in three cases where the carcinoma was situated in the lower part of the esophagus or at the cardiac end of the stomach, dilatation of the esophagus was not present even in the advanced stage of the disease (see Fig. 2). But in the fourth case the carcinoma was located eleven inches from the incisor teeth or about the level of the clavicle, which from the history is apparently of recent origin; dilatation of the esophagus is already present, as Fig. 4 demonstrates. Just why dilatation of the esophagus is absent in carcinoma of the lower part of the esophagus and present in carcinoma of the upper part, I am not at present prepared to say, but it is reasonably safe to assume that dilatation of the esophagus caused by a stenosis near the cardiac end of the stomach is generally due to a cardiospasm. Rosenheim (5) furthermore maintains that those individuals affected with primary or congenital dilatation of the esophagus are predisposed to cardiospasm. Recently authentic cases of cardiospasm with dilatation of the esophagus have been reported in infants between the age of two and twenty-four months (6). This theory, while not yet fully confirmed, is probably true for those cases where the onset is sudden, as occurred in Case IV. This theory has such distinguished advocates as Fleiner, Zucker, Lushka, and Sievers.

Krause and his followers take a midway course, believing that the cardiospasm and the accompanying dilatation of the esophagus occur simultaneously, due to a degeneration of the vagus, basing the theory on one case, which Krause lately confirmed by post mortem findings. His view lately has been apparently confirmed by Lockwood (7), Kronecker, Tyson (8), and probably by two of my cases. Lockwood (7) reports a case of cardiospasm with dilatation of the esophagus caused by vagus irritation, due to a prolapsed right kidney, causing a reflex irritation of the vagus through the semilunar ganglion, which forms a loop with the right splanchnic nerve. Tyson (8) in his careful observations of two cases, reports that both had a rather slow heart action (stimulation of the vagus) and one a prolapsed right kidney. In Case II an exploratory operation disclosed the fact that the right kidney was movable and displaced (see Fig. 3). This probably was the cause of the cardiospasm in this case according to Krause's theory. Cases I, II, and IV showed a rather slow heart action. Openkowski (9) has succeeded in isolating the inhibitory and accelerative branches of the vagus controlling the mechanism of the cardia, while Kronecker has conclusively demonstrated in his animal experimentations, that cutting or irritating the vagus, results in the formation of a spastic cardia and weakness of the muscular wall of the esophagus, which later becomes dilated. Other theories as to the pathogenesis may be briefly mentioned; Burton suggested trauma as a causative factor. Others maintain it is purely reflex in character, citing a few cases in which the symptoms disappeared after the removal of gallstones. Martin suggests esophagitis, but this is probably secondary, caused by the retained food and secretions.

The fact still remains, that from the earliest observations of this condition, in spite of the careful and painstaking work done by excellent and distinguished pathologists and physiologists, the etiology still seems to be in a chaotic state, but they together with the clinicians have come to a general conclusion that cardiospasm is of nervous origin, and my observations, though limited to only five cases, apparently justify this conclusion, as the condition developed in three patients after they labored under a severe mental strain, in two for a period over one year, due to business reverses, while in the third patient it followed the failure of a church entertainment, which she had full charge of. Myer (10), in his recent article, thinks that there is a relationship between this phenomenon and what he calls the *enteroptotic type* of individual, and to quote him exactly states: "Glénard and Stiller and their followers have shown without a doubt that there exists

a type of individual, presenting certain well defined outward evidences which indicate a congenital tendency to a general asthenic state—*asthenia universalis congenita.* They are characterized by a slender, gracile build, long flat thorax, acute costal angle, floating tenth ribs, pulsating aorta, splanchnoptosis, etc. In these individuals, not only are the viscera in a state of ptosis, but the hollow viscera especially are atonic, manifesting at the same time, paradoxical though it may be, a tendency to spasticity as well. This is shown in the *corde colique transverse* of Glénard and the spastic cecum and sigmoid so often encountered in these cases." Some observers are not in accord with Myer as to the type of individual presenting this condition; many cases, as well as those under my observation, occurred in individuals having a splendid physique, presenting many of the characteristics seen in the enteroptotic type only after a long period of starvation.

In a recent review of the literature, we find that a little more than 200 cases have been reported, the great majority in the last few years by such observers as Erdmann, Sippy, Einhorn, Myer, Plummer, Tyson, Strümpell, Mikulicz, Meltzer, Leichtenstein, Maybaum, Retzenstein, Russell, Rosenheim, Westphalen, Fleiner, Boas, Zinnser, and Sievers. It is interesting to note that recently five authentic cases of cardiospasm with dilatation of the esophagus, two being confirmed by röntgenograms (11) have been reported occurring in infants between two months and two years old. Statistics show that it occurs more frequently in females than in males, one case being reported in a negro woman (12). It is most common between the ages of five and fifty years, the period of greatest liability being between the twenty-fifth and fortieth year. No occupation or locality is conspicuous as a predisposing factor, but it seems to occur mostly in highly strung and sensitive individuals with a neurotic temperament.



ploratory operation performed by Da Costa at the Jefferson Hospital.

SYMPTOMS.

The clinical history is intimately related with the development of the anatomical disorder, in so many cases, that it is best to divide the symptom complex into three stages.

The first stage comes on as a rule gradually. At first it resembles a mild form of indigestion; suggestive symptoms are belching of gas, eructations of sour fluids, and mild dysphagia, with habitual pain, discomfort, or burning sensation behind the lower end of the sternum or in the epigastric region, which is usually referable to some indiscretion of diet. Some experience a choking sensation, often describing it as the sense of a ball rising in the throat, a statement often leading us to suspect globus hystericus, and if we are not careful, to make a diagnosis of hysteria. In this stage the dysphagia is easily overcome by the peristaltic action of the esophageal muscles.

In a few weeks or months, as the condition slowly advances, the second stage appears. The esophagus begins to dilate, due probably to the inability of the esophageal and accessory muscles of deglutition to overcome the resistance offered by the spasmodically contracted and hypertrophied cardia during the act of swallowing. This stage may come on suddenly, especially in those cases of congenital or primary dilatation (as occurred in Case IV), but as a rule it develops gradually. Clinically, this stage manifests itself by a greater difficulty in the swallowing, first of solids and coarse food, later of semisolid and liquid food. At the onset the patients learn by intuition to pass the food by swallowing air with it; later, as the cardia becomes more resistant, they unconsciously acquire the habit of filling the esophagus with food and manage to tease some of it through the contracted cardia with great difficulty by gulping down a few mouthfuls of water, then closing the mouth and forcibly expiring (so as to raise the intraesophageal pressure), aiding this maneuvre with an increased action of the accessory muscles of deglutition. The pain or discomfort behind the sternum being materially exaggerated during the act of swallowing, is greatly relieved a few moments after the food passes the cardia or is regurgitated. The distressing symptoms also increase in severity and the patients begin to complain that the food lodges behind the lower end of the sternum. Others may complain of the sensation of a ball being present in the stomach, with a severe boring pain in this area. The constant frequency with which the substernal pain is referred along the lower costal margin, mostly on the right side, has been commented on by many observers. It has been observed that the patients complain of inability to swallow cold water. This has led many to think that this is a pathognomonic sign. It is unquestionably a valuable symptom in the diagnosis, but

should not be regarded as pathognomonic, as the same difficulty is often complained of in carcinoma of the cardiac end of the stomach, this symptom being one of the chief complaints in two cases which I have at present under observation. It may be, however, that some degree of cardiospasm is associated with carcinoma in this region. I might also add that Tyson cites a case where the resistance of the cardia was facilitated by alternating hot and cold liquids.

With the rapid dilatation of the esophagus into a fusiform or cylinder shaped sac, the patients pass into the third stage. The cardia becomes almost impenetrable, only liquids being able to trickle through, leaving the solid food above in the dilated esophagus. Slowly starving patients acquire a capricious appetite, but they now have marked difficulty in swallowing either semisolid or liquid food, often leaving the table to regurgitate their meal, only to return to try to satisfy their hunger. Many acquire the faculty of regurgitating the contents of the esophagus at will. Food swallowed twenty-four hours previously can often be recognized in the regurgitated material. Often while sleeping with a partially or fully distended esophagus, they are awakened by a reflex cough, which is relieved by regurgitating the contents of the esophagus. While they sleep in certain positions, the liquid contents of the esophagus flow from the mouth or down the larynx, often causing paroxysmal coughing till the esophagus is emptied of its contents, before they can resume their sleep. The mental distress caused by the process of slow starvation often makes them despondent. The physical and systemic disturbances due to starvation now give them the appearance of the enteroptotic type so well described by Myer.

DIAGNOSIS.

The clinical diagnosis can be made by the association of the cardinal symptoms, such as the gradual increasing difficulty in swallowing, together with the sensation of food stopping behind the lower end of the sternum, causing a sense of fullness or substernal pain which usually radiates along the right lower costal margin; regurgitation of increasing amounts of food, which, when examined, can easily be distinguished from the stomach contents, being practically odorless and flocculent and containing a great deal of mucus and saliva. Often the character of food ingested some hours previously can be recognized, as it is usually poorly chymified. It is slightly acid in reaction, containing lactic acid and no hydrochloric acid. The great amount of sugar production resulting from the carbohydrate digestion in the diluted esophagus gives a positive Fehling's reaction. There is almost constant inability to swallow cold water. An obstruction about forty cm. from the incisor teeth is more or less difficult to overcome with an esophageal bougie. If a small tube is passed through a very resistant cardia, and the stomach is partially filled with a carmine solution if the tube is then withdrawn into the esophagus and a solution of methylene blue poured in, it is possible after a period of fifteen to thirty minutes to siphon off the different colored solutions separately (13).

The direct diagnosis is best made by röntgenography. Both röntgenoscopy and esophagoscopy are great aids in diagnosis, especially in those cases where you want to eliminate the possibility of an error in diagnosis, when the dysphagia may be due to organic stricture, aneurysm, etc., but, as a rule, they are unnecessary when a careful history has been elicited. Röntgenograms taken shortly after the ingestion of bismuth subcarbonate suspended in buttermilk, usually show the constricted cardia with the dilated esophagus (See Fig. 5) very nicely. The esophagoscope is usually resorted to as an early aid to diagnosis, enabling us to get a practical view of the interior. As a rule, when the esophagus is dilated, the mucous membrane is swollen and edematous, with a grayish color. The walls are thrown into many folds and convolutions.

The mistakes in diagnosis in this disease occur in cases where the symptoms are latent or masked by some other condition. A fruitful field for error presents itself when the symptom complex is vague or indefinite, especially when the apparent hysterical or neurasthenic symptoms predominate. The diagnosis should be at least suspected when some of the cardinal symptoms have been obtained.

TREATMENT.

The treatment of this condition was formerly thought to be practically hopeless, for the etiology was not known. Thus it is not difficult to understand why the various therapeutic and dietary measures offered no relief. Gradual dilatation with esophageal sounds also failed to relieve the dysphagia.



FIG. 5.—Röntgenogram showing [illegible] level of the clavicles.

The treatment for the relief of this condition naturally fell to the surgeon, with only partial hope for relief. Mikulicz (14), Erdmann, Mayo (15), and Tyson (8) report a number of cases in which a gastrostomy was performed with manual dilatation of the cardia from below. Later reports, however, show that in many cases the dysphagia returned in about four months, but to a lesser degree of severity than before the operation. Recently, Willy Meyer (16) performed an esophagoplication and vagolysis in two cases of impermeable cardiospasm with excellent results. This method is hazardous and should be resorted to only when the divulsing method, as suggested by Russell and Strauss and Plummer (17) fails. Very excellent results, however, for the relief of the dysphagia have been obtained by overstretching the spastic cardia, to reduce its tonicity. This has been accomplished by the use of a sausage shaped balloon, as described by Myer (10), an inexpensive apparatus, consisting of two pieces of Penrose drain, about six inches long, with a silk bag inserted between them, which is tied to the closed end of a stomach tube. I found that an enema tube was better adapted for this purpose, as it is somewhat firmer, therefore less likely to kink in, the esophagus, and better adapted to pass the spasmodic cardia, which is very resistant at times. Frequently a steel spiral, as a mandarin, is required to facilitate the passing of the dilator when made on a stomach tube.



Fig. 3.—Roentgenograms of Case I, showing a cardiospasm with dilatation of the esophagus in an advanced stage of the disease.

After locating the spastic cardia by means of an esophageal bougie, the tube is marked at a point where it reaches the incisor teeth, when one half of the balloon passes the cardia. The esophagus is now cleansed with a warm solution of boric acid so as to remove the retained mucus, saliva, and food particles. After determining the full capacity of the dilating bag, it is introduced to its proper position, and hydrostatic pressure, gradually made by means of a steel syringe (holding about 200 c. c., such as is commonly used in removing wax from the ear), until pain is caused by the pressure. It has been my experience in all the cases under my observation that patients can stand the pressure of a fully dilated bag for ten to fifteen minutes with very little discomfort, after a few short preliminary divulsions, which are usually necessary to accustom them to retain the fully dilated bag. The consensus has been that ten to twenty divulsions are necessary for a cure, in the sense that the dysphagia is relieved, depending on the stage of the disease in which the patient presents himself for treatment.

In the latest reports of the advanced cases, that were cured for a period of more than four years (14), the dilated esophagus still persists, with only a few mild symptoms. My experience in two advanced cases has been that the dysphagia in a moderate degree will return temporarily, when the patients are greatly worried or agitated, though the dysphagia has been relieved for the past year. My plan is to give the first four stretchings daily and the remaining every third or fourth day, at the same time advising the patient to keep on a soft diet, eat slowly, properly masticate the food, and avoid cold water and coarse food. After three or four treatments, the dysphagia is relieved, and only in advanced cases a few of the milder symptoms persist, such as the regurgitation of a small amount of mucus and saliva at night, or perhaps slight discomfort behind the sternum at intervals, as occurred in Cases I and IV, while in Cases II and III, where the dilatation was slight, all the symptoms disappeared.

I am using this dilator for the relief of the dysphagia in three cases of carcinoma of the esophagus and the cardiac end of the stomach, with fair results, giving some relief of the dysphagia for the ensuing twenty-four or forty-eight hours. Treatments are given every third day. While I realize the danger of this procedure, yet I feel that the temporary relief afforded these poor individuals is well worth the risk taken.

Tyson (8) constructed an apparatus on the principle of a Kollman urethral dilator for the relief of this condition, but it failed after being tried a few times in one of his cases.

Case I. S. R., aged thirty-three years, married, had three children all living and well. Occupation, tailor. Family history negative. Always enjoyed good health till present illness. Wassermann negative. During August, 1910, applied for treatment of diabetes, discovered while applying for life insurance. For the past six months had been complaining of polydipsia, polyuria, and polyphagia, and recently began suffering from a burning sensation in the epigastric region with belching and eructations of sour

fluids. At the beginning of the following year, began to complain of slight difficulty in swallowing with pain behind the middle of the sternum. Drinking cold water would increase this difficulty. Uranalysis, specific gravity 1,030, acid, no albumin or casts, Fehling's reaction positive. Sugar six per cent., no acetone or diacetic acid. Saw patient again June, 1912; he stated that the difficulty in swallowing had gradually increased and the food stopped behind the middle of the sternum, where it caused a dull boring pain, which radiated to the right side along the lower costal margin. Managed to swallow food with considerable difficulty by washing it down with a cup of hot tea or coffee, which greatly alleviated the pain behind the sternum. Frequently annoyed by fluids running from his mouth or down his larynx while sleeping in certain positions. Made a provisional diagnosis of cardiospasm. Uranalysis, specific gravity, 1,029, acid, no albumin or casts, sugar 4.5 per cent., no acetone or diacetic acid. Did not see patient again until April, 1913, when he stated that it was impossible for him to swallow any food, often having to leave the table to regurgitate the meal. Frequently recognized food eaten twenty-four hours previously in the regurgitated material. In the meantime had consulted many physicians and submitted to various treatments for relief, but without success. For the past two months the largest size esophageal bougies were passed every other day without relief. For the past six months was fed by a stomach tube. At present was very despondent and lately had lost strength and weight rapidly. At onset of present illness weighed 220 pounds, at present weighed 140 pounds. Uranalysis, specific gravity, 1,025, acid, trace of albumin, few hyaline casts, Fehling's reaction negative. No acetone or diacetic acid.

August, 1910. Patient was a male adult, broad stature, musculature well developed, with a tendency to obesity. Thorax, nothing abnormal, except that the heart beat 66 a minute. Abdomen, nothing abnormal noted, reflexes normal.

April, 1913. Patient haggard with a worried and anxious expression. Musculature flabby, looked emaciated, chest negative, except for a rather slow heart beat and a visible cardiac wave. Abdomen, pulsating aorta in epigastrium and viceroptosis present. *Esophageal contents.* Slightly acid in reaction, lactic acid present, hydrochloric acid absent, Fehling's reaction positive. Contained a great deal of frothy mucus and saliva with many undigested food particles. The stomach tube met with great resistance about 38 cm. from the incisor teeth. The examination of a stomach test meal revealed nothing abnormal. *Röntgenogram* (Fig. 5) taken immediately after ingestion of bismuth subcarbonate suspended in buttermilk revealed a cardiospasm with dilated esophagus. *Esophagoscopy* showed esophagitis present and the wall thrown into many folds and convolutions.

After two preliminary divulsions to accustom the patient to retain the dilator, the cardia was stretched every other day with a fully distended bag for fifteen minutes, which caused him very little discomfort. After the fourth stretching, he went home and ate a full dinner, the first time in over two years, disregarding all the dietary instructions given. Divulsions were made every other day for the first two weeks and gradually decreased in frequency until at present they are given once a month. Since the fourth treatment, there has been no dysphagia or regurgitation of food. The patient refuses to follow the dietary instructions because he considers himself well. Some of the milder symptoms still persist, and at times when greatly worried or agitated a mild degree of dysphagia returns temporarily. Cold water still causes a moderate degree of dysphagia. The present weight is 180 pounds. At present the urine examination is negative and I am inclined to believe this is a case of physiological glycosuria.

Case II. M. G., aged forty years, single, occupation housework. Family history negative, Wassermann negative. Patient always enjoyed good health until onset of present illness two years ago. Present illness began August, 1911, with neuralgic pains, which radiated from the right side of the back up to the axilla and down the right arm, so severe at times that morphine had to be administered hypodermically to relieve her. Coincident with the onset of this trouble she began to suffer from what many physicians diagnosed as nervous dyspepsia, characterized by frequent belching and eructations, together with a burning sensation in the stomach. Early in 1912, began to notice a gradual difficulty in swallowing solid food, having to swallow air to force it down, as it seemed to lodge behind the lower end of the sternum, where it caused a dull pain. Since the beginning of the dysphagia, observed that she could not swallow liquid or solid food after drinking cold water or eating ice cream. As a rule could swallow warm liquid or semisolid food with very little difficulty. Lately when swallowing or regurgitating food she had the sense of a ball rising in the throat. At the onset of present illness weighed 180 pounds, present weight 120 pounds. At present she was so weak, that she had been bedridden for the past two months. Uranalysis negative. Patient had been treated at various times for gastritis, neuritis, nephritis, and hysteria.

March, 1913. Patient was a female adult, anxious expression, looked emaciated, medium stature, musculature flabby. Thorax long and flat, lungs negative, floating tenth ribs. Heart gave evidences of aortic stenosis, a systolic murmur heard best at the aortic punctum maximum, accompanied by a thrill. Left ventricle slightly hypertrophied, faint second aortic sound. Pulse rate 58 a minute, and of moderate tension. Abdomen, recti separated, visceroptosis present, aortic pulsation in epigastrium, no evidences of movable kidney present. *Esophageal contents.* Moderate amount of mucus and saliva present with many undigested food particles, acid in reaction, lactic acid present, hydrochloric acid absent, Fehling's reaction positive. Passing of a stomach tube met with resistance 40 cm. from the incisor teeth. Stomach test meal showed absence of hydrochloric acid, presence of lactic acid, few Oppler-Boas bacilli present. *Röntgenogram* (Fig. 4) of this patient, showed displacement of stomach caused by a displaced right kidney.

Treatment was begun in April, 1913. After a few preliminary divulsions to accustom her to retain the dilator, she received ten divulsions, the cardia being stretched every other day with a fully distended bag for fifteen minutes. After the fifth treatment, the patient began to eat all varieties of food without any discomfort or dysphagia, and began immediately to gain weight and strength. From the stomach test meal and the röntgenogram (Figure 4), carcinoma of the pyloric end of the stomach was suspected. When the patient was told of our suspicion, she consented to an exploratory operation, which was performed June 7, 1913, by Da Costa at the Jefferson Hospital. The operation disclosed

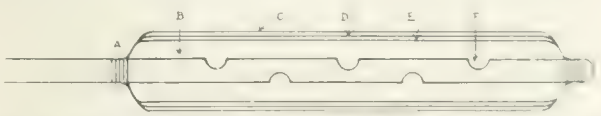


Fig. 6a.—Schematic drawing of a dilating bag: a, thread, b, [illegible] tube; c, Penrose drain; d, Silk bag; e, Penrose drain; f, [illegible] enema tube. (One third actual size.)

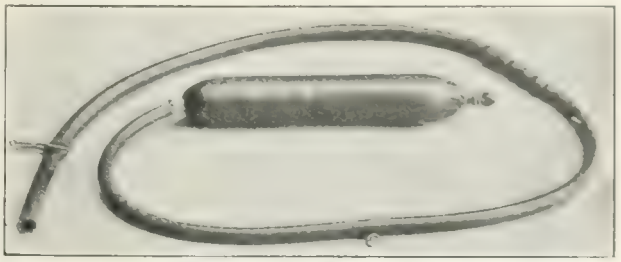


Fig. 6b.—A dilating bag.

the fact that the stomach was normal, but slightly prolapsed, and the mass at the pyloric end was due to the pressure of a displaced right kidney. The incision was closed and it was decided to fix the kidney at a subsequent operation; the patient unfortunately died in forty-eight hours from postoperative shock and exhaustion. I feel inclined to think that this is one of the cases of cardiospasm with dilatation of the esophagus caused by reflex irritation of the vagus by a displaced right kidney, such as reported by Lockwood and confirmed by the animal experiments of Openkowski.

Case III. J. M., aged thirty-three years, married, had three children all living and well. Occupation cabinet maker. Family history negative. Always enjoyed good health until onset of present illness. In the fall of 1911, began to suffer from what his physician diagnosed as nervous dyspepsia, complaining of a burning sensation at the top of the stomach, with belching and "vomiting," which usually came on about one half hour after eating. These symptoms persisted for about a year, when he noticed a gradual difficulty in swallowing solid food, which seemed to stop behind the lower third of the sternum, where it caused great discomfort. At first he acquired the habit of forcing the food down with a cup of coffee or tea; later, when this method failed, he would regurgitate the solid contents after the liquids filtered through, so as to relieve the discomfort. At times a coughing paroxysm while he slept would empty the esophagus. About this time noticed that drinking a glass of cold water would greatly increase the difficulty in swallowing. For the past few months would have to regurgitate the contents of the esophagus after being jolted, especially from a trolley ride. Saw patient first time, September 5, 1913, in my office, when he regurgitated his supper at my suggestion, about one hour after ingestion. For the past few months has been losing weight and strength rapidly.

September, 1913. Patient, a man, medium stature, musculature poorly developed and flabby, appeared emaciated, long flat thorax, heart and lungs normal. Abdomen negative, reflexes normal. *Esophageal contents.* Contained a considerable amount of a light brownish fluid with a pungent odor and a great deal of saliva, mucus, and many recognizable food particles. Acid in reaction, lactic acid present, hydrochloric acid absent, Fehling's reaction positive. The stomach test meal was normal. The passing of a stomach tube met with a great deal of resistance 37 cm. from the incisor teeth. Diagnosis of cardiospasm and dilatation of the esophagus made from the history and examination. Nothing abnormal noted in the urine.

After a few preliminary divulsions to accustom the patient to retain the dilator (the preliminary divulsions were made with a small sized dilator, measuring three quarters of an inch in diameter when fully distended, made on the end of a size 16 French rubber catheter having a hole drilled on the tip, which was threaded with braided silk strings, previously swallowed by the patient), the cardia was stretched, every other day for two weeks, with a full sized dilator fully distended for fifteen minutes. Since then the cardia is divulsed once a week. After the sixth treatment the dysphagia disappeared, and the patient regurgitates only a small amount of mucus and saliva at night before retiring. At times he still has a slight difficulty in swallowing coarse solid food, but absolutely no difficulty in swallowing if the dietary instructions are followed. Since the first treatment, September 10th, the patient has gained twelve pounds in weight.

Case IV. S. S., aged thirty-nine years, single, occupation housework. Family history negative. Previous medical history negative. Always enjoyed good health until onset of present illness. After being under a severe mental strain for over two months, patient suddenly experienced difficulty in swallowing her dinner one evening during October, 1910. It seemed "to stick" as she said, behind the lower end of the sternum, where it caused a dull, boring pain. After many unsuccessful efforts to force it down, she regurgitated the meal to relieve the pain. Thought this was merely an attack of indigestion. During the next six months had attacks of dysphagia at intervals of about ten days, but in the meantime experienced no difficulty in swallowing her food. About one year after the onset, noticed that she could swallow liquid or semisolid food more easily than solid food. About this time noticed that after drinking a glass of cold water the dysphagia greatly increased. Gradually the dysphagia increased for solids, and the patient complained that the food always "stuck" behind the lower end of the sternum, where it caused a dull boring pain, which radiated along the lower costal margin of the right side, and persisted until the food was regurgitated. During the second year, the dysphagia became constant and gradually increased in severity, till she acquired the habit of swallowing her food by taking a few gulps of water, closing her mouth, and expiring to force the food down, during this manœuvre patient became cyanosed and the veins of her head were prominent. When this method failed to force the food down, she was obliged to leave the table and regurgitate the contents of the esophagus. While sleeping in certain positions, mucus and saliva would flow from her mouth or down her larynx. Frequently awakened at night with coughing paroxysm, which was not relieved until the contents of the esophagus were regurgitated. During the last six months of her illness, patient was practically bedridden on account of being very weak. At onset weighed 169 pounds, weight, August,



Fig. 7.—Rontgenogram showing a dilating bag in position in an advanced case of cardiospasm with dilatation of the esophagus.

1912, 118 pounds. Many physicians with various forms of treatment failed to give her any relief up to this time.

October, 1913. Patient, a woman, musculature fairly well developed. Thorax, heart, and lungs normal, pulse rate 62 a minute. Abdomen, nothing abnormal noted. Stomach test meal normal. A stomach tube met with resistance at the cardiac end of the stomach. *Röntgenogram* revealed a cardiospasm with marked dilatation of the esophagus.

Patient was sent to the mountains in New York State as a last resort to gain some strength; while there she was referred to Doctor Einhorn, of New York, who correctly diagnosed the case. Received first treatment August, 1912. The spastic cardia was dilated with a large olive tip on the end of a flexible metallic rod, which was held in the cardia for a number of seconds. Received a treatment every other day for two weeks, since when the intervals have been lengthened till at present she receives one treatment a month. Since the fourth treatment she has been able to swallow liquid and semisolid food without difficulty, but solid food still causes dysphagia. Since the first treatment patient has gained twenty-two pounds in weight and has been so thankful for the relief that she cannot be induced to use my dilator, which, I am sure, would enable her to swallow solid food. At times when she is greatly agitated or worried, the dysphagia temporarily returns.

Case V. Called in consultation by Dr. B. Weiss, November 2, 1913, I obtained the following history: B. Z., aged thirty-seven years, married, had four children, all living and well. Family history negative. Previous medical history negative, except that she was operated on for retroversion of the uterus four years ago. Denied lues. Occupation housework. Always enjoyed fair health until onset of present illness. In 1911, began to suffer from a distressed feeling in the epigastric region after meals. Once every two or three weeks the food would stop behind the lower end of the sternum, where it caused a dull boring pain, which radiated over the right side of the chest. This pain would persist until she "vomited," but in the meantime she experienced no difficulty in swallowing her food. Complained of mucus flowing from her mouth while sleeping. Patient was usually very constipated. This state of affairs continued till August, 1913, when patient began to complain of constant nausea and that the food would not "go down"; it would stop behind the lower end of the sternum, and she had to regurgitate to relieve the pain. Warm or hot water increased the dysphagia, while cold water had no effect. For the past two months had marked difficulty in swallowing either solid or liquid food, and during this time lost twenty pounds in weight. The passing of a stomach tube met with marked resistance about 40 cm. from the incisor teeth.

November, 1913. Patient, a woman, medium stature. Musculature flabby. Thorax, heart and lungs normal. Pulse rate 72 a minute. Abdomen, nothing abnormal noted, except that slight amount of visceroptosis was present. Stomach test meal normal. Urine normal.

A provisional diagnosis of cardiospasm was made with dilatation of the esophagus, which was confirmed by the treatment. On November 3rd, the cardia was stretched with a fully distended dilator for ten minutes. Since then the patient has received four treatments, with the result that after the second treatment the dysphagia entirely disappeared and she is now able to swallow all varieties of food without difficulty. A more detailed account of this case will be published later.

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1715 NORTH SEVENTH STREET.

LYMPHOSARCOMA.*

Involving the Right Tonsil, Lateral Pharyngeal Wall, Soft Palate, and Uvula.

By HARMON SMITH, M. D.,
New York.

Case. D. R., aged twenty-three years, was sent to me June 11, 1913, by Doctor Weil from the General Memorial Hospital for the purpose of removing, if possible, sufficient of the tumor to permit of deglutition and to lessen the disturbances of respiration. The mass at this time was so great in extent that it filled at least three fourths of the oropharynx, and not only impeded respiration so that the patient at times became cyanotic, but rendered deglutition almost impossible. The patient had been treated with Coley's toxins without evidence of improvement. He gave a history of having fallen on his head when a child, after which he had been subject to epileptic fits. These fits were occurring at the rate of three or four a day when first admitted to the hospital, and increased in severity subsequent to the operation, until at one time he was having twelve or more a day.

Without giving to the family any hopes of recovery, and without suggesting that the operation would bring about the end desired in regard to deglutition and respiration, I consented to operate, June 12, 1913. Feeling assured that there would be profuse hemorrhage, I first performed a preliminary tracheotomy. The anesthesia was then administered through the tracheotomy tube. I began my operation by first inserting a row of sutures through the soft palate as close to the left tonsil and pharyngeal wall as the induration of the palate would permit. With these sutures I controlled a large part of the hemorrhage as I proceeded with my incision. A curvilinear resection was made with scissors, beginning close to this row of sutures, and carried along the junction of the soft and hard palate over to the right tonsillar mass, embodying in the removed parts the uvula and three fourths of the soft palate. The next removal step was begun at the base of the right tonsil by making blunt dissection from below upward and detaching the tumor from what appeared to be a capsular formation. This was easy of accomplishment until the upper portion of the tonsil and pharyngeal wall were reached, when it became necessary to cut away with scissors that part of the pharyngeal wall involved in the tumor which extended up nearly as far as the Eustachian prominence. The hemorrhage

*Patient and history presented before the Section in Laryngology, New York Academy of Medicine, February 25, 1914.

was not severe, as had been expected, and it was only necessary to tie off a few bleeding vessels and control the oozing by hot boric acid applications. Some of the indurated soft palate was cauterized with the Paquelin cautery, which effectually controlled the hemorrhage. The tracheotomy tube was left in place and the whole pharynx and epipharynx packed with sterilized gauze, which was left in place until the following day. Upon removal of the gauze there was but little hemorrhage and the packing was omitted and the raw surfaces were dusted with iodoform. The tracheotomy tube was left in for several days, as it was feared the hemorrhage might occur at any moment and be difficult to control without the ability to repack the pharynx. In four days the tube was removed and the tracheotomy wound closed.

In consultation with the surgeons of the Memorial Hospital, it was advised that the remaining parts of the tumor should be fulgurated. This was done for several weeks at intervals of three to five days. The patient was discharged from the hospital, July 9th, and did not again return until January 27, 1914. Much to my surprise he came to the clinic giving every evidence of increased constitutional vitality, was able to breathe freely and swallow without difficulty. On the side where the greatest operative procedure had taken place there was no evidence of recurrence of the tumor, and nothing remained but a clean white scar. On the left side, running up behind the remains of the palate, there was a bluish red linear mass, which I believed to be a recurrence of the growth. Two fulgurations were made under local anesthesia, but without any apparent effect upon it. Under cocaine I then removed as much of this with the electric cautery knife as could be taken away without extensive surgery, which under microscopical examination proved to be lymphosarcoma. The patient informs me that he has had no more epileptic fits and that he feels perfectly able to continue his work.

Considering the beneficial operative results which followed the first operation, it seems perfectly justifiable to endeavor radically to remove a smaller growth on the opposite side.

44 WEST FORTY-NINTH STREET.

TWO OF THE PRESENT DAY FADS.

BY A. MORGAN MACWHINNIE, M. D.,
Seattle.

That fads have existed since the beginning of history is an acknowledged fact. The public, every few years, takes hold of a new fad with an affection not excelled by that of a mother for her erring child. The human mind is governed by environment, association, and sentiment—sound sense and self judgment being present in comparatively few persons. It is only necessary for some one to say "this is so," and the multitude, never giving it thought or investigation, follows the dictum for a period sufficiently prolonged for much harm to be done; finally discovering that the promulgation is not correct.

The morning cold bath was not only a fad, but became the rage for a number of years. It is still followed by many as a most admirable procedure for toning up the nervous system; and so is the morning glass of whiskey. Cold plunges are very much in evidence, even at the present time in athletic house swimming pools and public baths. In England the cold bath is very much in vogue, almost to the stage of fanaticism. It is often related that so-and-so broke the ice daily, when necessary, in order to obtain his cold plunge. If it were possible to measure the shock to the human mechanism and the extra work thrust upon the individual, what a change of sentiment would immediately take place!

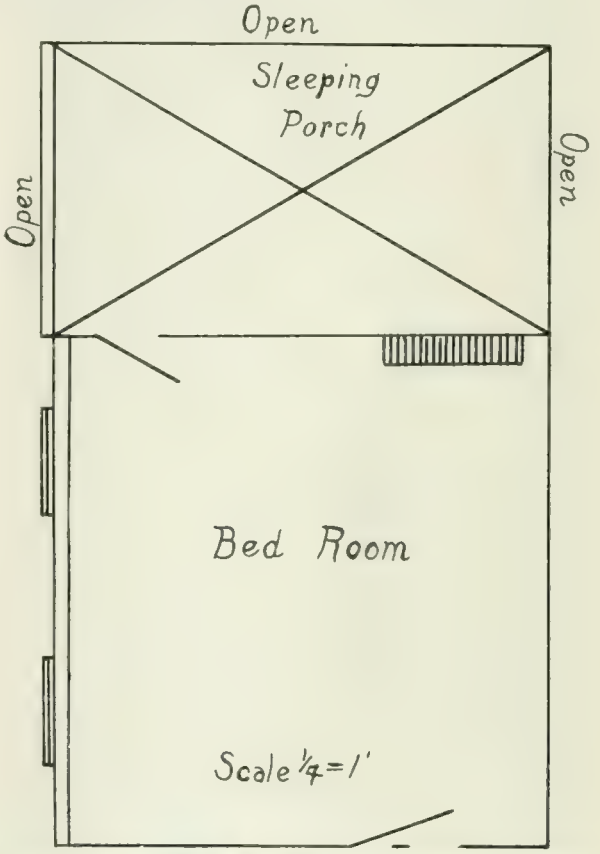


FIG. 1.—Porch exposed on three sides; no provision for keeping the bed warm during the day.

No thought is given to the fact that the human body is a piece of mechanism which will stand but a given amount of strain. No greater shock was ever transmitted to this mechanism than we see at the swimming pools at a temperature of 70° F. This temperature, in itself, if continued for too long a period, adds more work to the internal organs. But for this to be followed, as we ordinarily see, by a hot shower and then by a cold shower, is the most abominable practice imaginable.

It is not to be wondered at that we see so many nervous systems wrecked; it is from nothing more or less than overstimulation. True, many persons are able to withstand this for a while, but the overstimulation is followed by depression, which must be counterbalanced by an overaction or regeneration through an increase of the physiological processes; metabolic changes of all the internal organs

and their secretions follow. This, in turn, means a large consumption of food in order to take the place of the losses.

The physiological processes of the various organs are capable of doing a definite amount of work. Such work is governed by the amount, as well as the character of ingested material, and by the capabilities of these organs to produce the necessary conversion, or by their power and that of their secretions to convert this latent energy or fuel, to usefulness.

These internal organs have no known method of measurement that will give us a criterion in our regulation of the intake. The astonishing fact always before the observing mind, is the degree of overload that these organs will often take care of and yet not become diseased, unless the overloading is maintained for too long a period. This is evident in the liquor drinker, who daily imbibes his spirits.

It is noteworthy that a few years ago our champion wrestler was indulging in shower baths at the local athletic club. It was observed that at no time did he dash, or shower his body with cold water. Upon being asked why he did not take a cold shower after his hot bath, the laconic reply was, "I am not quite so strong as you men are." Draw your own inferences.

Fresh air never harmed any individual when taken under proper conditions; and it is necessary for healthy existence. In this day we hear much about fresh air; this has resulted in the establishing of numerous sleeping porches, so called. Sleeping in the open air, under proper conditions, is to be commended, but under the conditions we ordinarily see, it is to be severely condemned.

Upon investigating one hundred sleeping porches in this vicinity the following conditions were found to exist: In ninety-six cases the sides of the sleeping balcony were partially protected from the wind and rain by a tarpaulin or some other material. Two had no protection whatever, and one was inclosed with glass windows which could be thrown open horizontally at night on retiring. This was

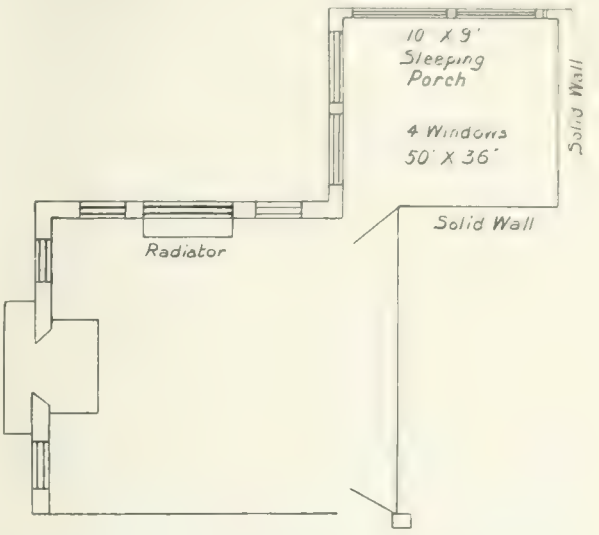


FIG. 3.—An ideal sleeping porch. All the windows can be arranged horizontally and closed in the day to keep the porch as warm as the rest of the house. (Sleeping porch of C. O. B.)

the only one that could be closed in the daytime, and had hot water radiators connecting with the boiler in the cellar that kept the bed and its covering as warm all day as the rest of the house. In ninety-eight cases the bed, mattress, linen, and covers were exposed all day to the dampness of the atmosphere. Only forty-six had a tarpaulin to protect the bed covers from the moisture. It is needless to say that this covering was insufficient for proper protection.

On interrogating the persons who occupied these sleeping porches, the answer was that they found a considerable amount of dampness throughout the covers and mattress. A number found it necessary to warm the bed by hot flat irons; others used an electric pad. The nervous system should not be subjected to the shock which dampness produces, especially at night when we find our physical forces at their lowest ebb. The body must in all these cases furnish heat enough to warm and practically dry out the bed covers or linen before the individual is able to go comfortably to sleep. This again makes it necessary for all the physiological forces to work more than is natural at that time of night, in order both to dry out the bed clothing and to keep the body warm.

A chill is quite frequently the result, and it is some little time before normal equilibrium is established. This will not harm such individuals as are robust and able to overcome the shock; but there are those who are pale and anemic, and not so robust—persons whose physiological forces are not so easily aroused to excessive work, and are able to maintain only their daily physiological processes without being called upon for any additional strain in the form of drying beds, mattresses, and covers. When such people occupy sleeping porches as described, their physiological forces fail to exert themselves to do the additional things called for.

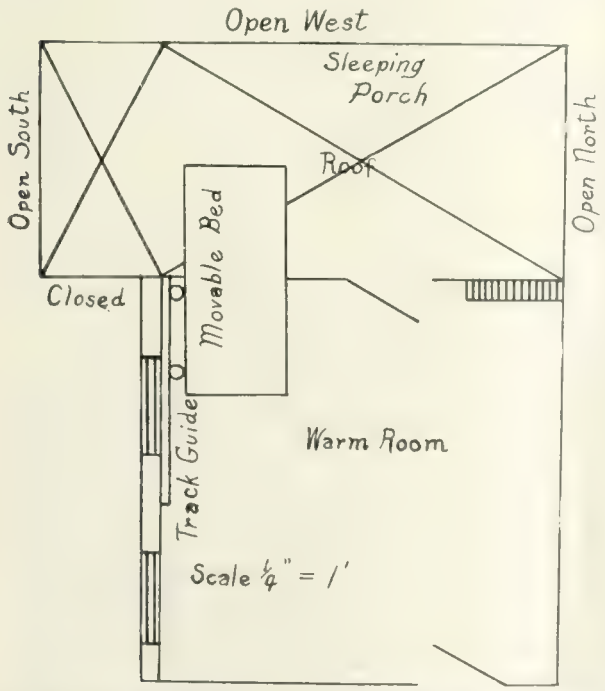


FIG. 2.—Ideal sleeping porch. When the bed is [illegible] on the porch, the foot board closes the room from the [illegible] when bed is in warm room, head board closes opening to sleeping porch.

The inevitable result is a lowering of the bodily resistance to the point where attack is easily made by the various diseases.

One very striking case occurred in a physician's family. The physician himself had, for a period of about five years, slept, regardless of weather conditions, on the sleeping porch. The wife had never been able to maintain the bodily vigor that would naturally be expected from sleeping in the open air. There was a feeling of lassitude, never one of well being. Examination of all the functions of the body failed to reveal any pathological changes. A careful inquiry brought out the fact that the sleeping porch was used every day; and that the usual chilliness was experienced every night during the winter season, requiring about half an hour to compensate for the lost bodily heat. It was suggested that the bed be brought into the warm bedroom for the entire day and then moved out when about to be occupied at night. Inasmuch as this was found impossible, it was suggested that the wife occupy a sleeping room in which all the windows could be opened on retiring, the heat, of course, to be shut off during the night. Considerable persuasion was necessary, but it was tried for a period of three months, during which time the patient gained seven pounds and acquired such bodily vigor as for years she had not been able to attain. This case could be duplicated in a number of others of the one hundred investigated.

The suggestion offered for sleeping porches is that they be so arranged as to be completely protected from the weather. Doors should be large so that the bed can be kept in the heated room during the entire day. When ready for the night, it should be wheeled on to the sleeping porch, thus obviating the disadvantageous conditions previously described.

Fig. 1 illustrates an improperly constructed sleeping porch. There is lack of protection on all sides and no heat during the daytime. Referring to Fig. 2, you will note a novel style of sleeping bed, designed and constructed by Dr. D. C. Hall. An opening is made in the wall large enough for the bed to roll through on to the porch. The head and foot boards are so constructed that the opening in the wall is entirely closed when the bed is at full length on the porch or in the room. The room is thus kept warm for dressing in the morning. The bed is supported by four large roller bearing wheels, one hand of a child sufficing to move it out or in. Grips are so arranged that the bed can be drawn out or in, while the occupant is in the reclining position.

606 Leary Building.

MARKED IMPROVEMENT IN TABES.

By Vertner Kenerson, M. D.,
Buffalo, N. Y.

Case. John H. M. is an engineer on one of the local roads, for which I am retained as surgeon, and during the last summer, he lost a good deal of time because the officers reported that he was unsteady on his feet, could not get in to his cab, did not sleep, had paroxysms of pain, so severe that he would stop and suddenly cry out. His wife reported that these attacks of pain were much more severe at night, that he would suddenly start up, scream, yell, and shout that the lightning pains about his body were killing him. His gait was markedly spastic, he could not go up and down stairs, if there was not a rail, was frequently jeered at by the men as he came from work and thought to be drunk, but was an absolute abstainer, had the full confidence of the railroad officials, his wife, and family. His arms were strong, and his head was perfectly clear. Gave a history of having had syphilis when he was twenty years old, having followed the advice and treatment recommended by a well known practitioner in another State, for two years, having gained weight as soon as he stopped the treatment, having been perfectly well and steady, and now one of the oldest engineers on the railroad, but he had had no treatment for fifteen years. He married a young woman of excellent family, after full explanations, and when she was pregnant of her first child, which was born dead and was undoubtedly syphilitic, she suffered from what was undoubtedly a syphilitic thrombus, had complete hemiplegia, was put on proper treatment for two years, and entirely recovered. Since that time, she has been perfectly well, has borne two healthy girls, and has had no treatment.

Mr. M. has been failing for two years last past, has lost weight, appetite poor, irritable, slept poorly, the lightning pains very distressing, gait markedly spastic, lost so much time that he lost his rank of service, had to take undesirable runs, was proposed for retirement, had refused further mercury and iodide treatment, had refused "606" two years ago, after a friend had had extensive sloughing following intramuscular injection, the point selected being the muscles of the back, but came to me when the case was desperate, as his wife insisted that something be done, so he would not disturb the neighborhood, by his yelling at night.

I had had no experience with tabes at this stage so far as neosalvarsan was concerned, but the reports that I have seen do not speak so favorably of this treatment in advanced cases as in primary lesions. I explained that I believed his best prospect was to undertake the old treatment, but I could not promise him anything in the way of improvement, but only hoped to arrest the case and could say less as to the neosalvarsan, and I left it to him. He chose the neosalvarsan, went to my private hospital, was carefully prepared, was injected intramuscularly in both buttocks after twenty-four hours, was kept in bed thirty-six hours, and received a cold plunge bath night and morning.

I attempted to suspend him in the Sayre apparatus, as one would for a plaster cast, but any attempt, although he professed to be anxious and willing and not at all afraid, was disastrous and he immediately fainted as soon as he was stretched enough to lift his heels from the floor, so this treatment had to be abandoned. However, he was very strong, and although I thought it would be better to relieve the tension on the intercostals for the whole length of the spine, including the cervical region, yet inasmuch as that could not be done, I compromised with suspension by the arms.

This man, who fainted at the least tension on his neck, would immediately get up from the floor to which he had of necessity been lowered, immediately reach for the crosspiece which holds the straps for the axilla, and "chin" himself several times, and then walk back to his room. I have recommended, and carried out many times, this old treatment for the lightning pains in advancing tabes, but have never met a case before that could not stand it.

Mr. M. remained in my hospital for the first week in September, 1913, went to his home and, after a day's rest, went to his old home in another State, rested a week, returned to Buffalo and reported for work, lost three days at Christmas at

the behest of his girls, but not on account of his health, and has not lost a day, except since the middle of September, and his work is every day in the month, including Sundays.

He walks upright, does not stagger at all, has no lightning pains, sleeps soundly and without lightning pains, so that, inasmuch as he reports at seven o'clock in the morning and works until six, he is tired when he gets home. After his cold bath and suspension, he goes to bed early, and is asleep, as he reports, as soon as he touches the bed, and remains so until the alarm goes in the morning, and he does not know when his wife and girls come to bed.

His treatment since he left my hospital has been cold baths, no medicine, and, if possible, an hour's suspension taken at different times through the days. He hangs by his fully extended arms a few minutes in the morning in the kitchen before he goes to work. A dozen times through the day, when his engine is for a few moments idle, he hangs on the hood of the engine.

We see a certain number of neurotic cases in engineers of long service, but none that so completely fill the description for tabes, as this one does, and there is no doubt in my mind that this man was suffering from specific locomotor ataxia, resulting from the insufficient treatment for syphilis years ago. This is supported by the fact that his wife undoubtedly gave birth to a dead syphilitic child and suffered from a syphilitic thrombus and hemiplegia, as evidenced by her complete recovery.

To those in the profession who have seen some of their patients go from bad to worse steadily, in spite of all mercurial and iodide treatment, and who have been hopeless of salvarsan, especially for recent cases, I am sure this will be of interest.

181 Allen Street.

VENTILATION.*

Fallacies, Facts; Experiments, Experience.

By John B. Todd, M. D.,
Syracuse, N. Y.

The study of prevention of disease resolves itself into a study of the conditions existing in the locality under investigation. The problem of obtaining pure water is universal. In our rigorous northern climate the greatest problem, after pure water, is to provide health conditions in the places occupied by people during the indoor months of the year. During the fresh air months the incidence of measles, scarlet fever, bronchial and pulmonary troubles gradually declines, only to increase in frequency with the shut in months, until in March and April the diseases occur with greatest frequency.

Thus it is that the subject of ventilation is receiving much attention at the present time (14-15-28-48-49-64), and as the actual application of means to effect the ventilation of rooms is largely dependent upon the theoretical conception of the object to be obtained, a brief discussion of current theories will not be out of place.

The principal factor of bad ventilation, according to the school of Flügge and his followers, is a disturbance of the heat regulation function of the body. A temperature of 80° F. with moderate humidity, or of 70° F. with high humidity, interferes with heat elimination and produces (15-21) "depression, headache, dizziness, and other symptoms of badly ventilated rooms."

Carbon dioxide has no ill effect (48), neither have the odors of crowded rooms (14), nor has rebreathed air produced perceptible injurious effect (5); the breathing of sewer gas is harmless (14); air borne germs of disease are a negligible factor (14). In one of the experiments reported by Hill (21), he and several others were shut up in a small chamber. The thermometer stood at 87° F. after forty-four minutes and the humidity at 83 per cent.; CO_2 5.1 per cent.; O 15.26 per cent. "The discomfort was great; all were wet with sweat and the skin of all was flushed." The occupants gradually ceased talking and laughing. When the air in the chamber was agitated by electric fans, the relief was immediate and very great, although the temperature had risen. The discomfort returned when the fans were stopped, and the occupants cried out for fans. "No headache or aftereffects followed this type of experiment, which has been repeated five times." Kindly bear in mind that the only effect reported in this experiment is described as follows: "The discomfort was great," with no after effects.

This and similar experiments by others have furnished the basis for the assertion (48) that "all the ill effects observed in crowded rooms seem to depend on stagnation, high temperature, and moisture content of the air; in a word, on those factors that produce a disturbance of the normal heat regulation of the body."

Buried in the pages of the *American Labor Legislation Review* (65) is a report of the examination of 1,413 workers in cellar bakeries and in some of the best tailor shops in New York city. The report is not even referred to, so far as I have observed, in any discussion of the ventilation problem, but it is a chapter from life and is worthy of careful study and attention, as it gives some real information, incomplete as it is.

The nativity and personnel of the bakers and tailors differed very little. The tailors' hours of labor were slightly less; the bakers worked nights. Both worked in dusty air. A comparatively small number of the bakers near the ovens worked in a temperature rather high. The CO_2 did not differ very much in either place, ranging from six to twenty-five per 10,000. The cloak shops were in exceptionally good sanitary condition, not overcrowded, ventilated by ordinary windows with no other fresh air inlet. The bakeries were underground with no ventilation, except through small windows or gratings, "but owing to the heated ovens the change of air was probably not less than in the tailor shops."

	Bakers		Tailors	
	No.	Per cent.	No.	Per cent.
Total examined	[illegible]	[illegible]	[illegible]	[illegible]
Free from disease	[illegible]	43.4	[illegible]	[illegible]
Had the following diseases:				
Anemia	[illegible]	[illegible]	[illegible]	[illegible]
Asthma	[illegible]	[illegible]	[illegible]	[illegible]
Bronchitis—				
Acute	[illegible]	[illegible]	[illegible]	[illegible]

*Read before the Syracuse Academy of Medicine, January 6, 1911.

Chronic	...	....	36	5.9
Laryngitis	...	....	5	0.8
Pleurisy	2	.03	4	0.7
Tuberculosis—				
Positive	19	2.4	4	..
Suspected	...	....	7	1.2
Diseases of the digestive system	7	9.5	18	30.3

Of the bakers, 27.4 per cent. had disease of the respiratory organs and of the tailors 14.9 per cent. had the same trouble. Out of the total number of persons two thirds were diseased.

Price (65) expresses clearly a correct appreciation of the problem. He says: "It is not difficult to study the extreme variations of pressure, temperature, and humidity of the air upon the health of workers in factories." He mentions accidental air impurities, gases, fumes, etc., and states that the lesions so produced are distinct and certain. "Not so," he states, "with the effect of ordinary impurities, which are understood by the term, confined air. The effects of confined air are less distinct, more difficult to prove, less direct, and more insidious, although not less deadly. There is no doubt that the higher rate of mortality among indoor workers is due to the confined air of shops and factories." Continuing the discussion of the subject, he states:

> Confined air does not produce distinct pathological lesions, nor does it directly cause any diseased conditions; and therefore it is difficult to prove. The best method of studying the effects of confined air upon the workers is to study the comparative morbidity rates of workers in different occupations who habitually breathe stale air in the course of their several employments. Lassitude, fatigue, headaches, anorexia, anemia, indigestion, defective oxygenation, lack of vital resistance, and a predisposition to catarrhal affections of the air passages, are the inevitable results of a chronic intoxication with vitiated air.

Thus it is plainly seen in the discussion of the theories of ventilation, that the substitution of the factors which produce the sensation of depression or discomfort which can be relieved by a fan or a drink of whiskey (62), for the factors which produce a chronic intoxication by vitiated air results in the diseased conditions given by Price, and those sanitarians who follow Flügge and his pupils, have persistently befuddled the public. It would seem almost that they have been deliberately preparing the groundwork of public opinion for the patent air machines; as stated by an editorial writer in the *Lancet* (63):

> There seems to have been an impression that a fan has something to do with ventilation, when, instead of being held in a lady's hand, it is attached to an electric wire. On shore, as well as at sea, an electric fan is sometimes placed on the ceiling of a restaurant or of a railway dining car, and when it whirls around, it produces a sensation of coolness. But what has this to do with ventilation? Ventilation does not consist of churning up the air. Fresh air is not manufactured on the same principle as fresh butter, nor does ventilation consist in making a draft.
>
> The ideal ventilation consists of the introduction into, and the extraction of air from an inhabited place, house, assembly hall, theatre, railway carriage, saloon or cabin, in such a manner as to be imperceptible to the persons breathing that air.

The sensations of the body are unpleasant sensations or sensations producing discomfort, indifferent sensations, and pleasant sensations. In the experiments of Hill cited, the experimenters were conscious of the sensation of discomfort, with no aftereffects. The effects produced by bad ventilation are in an entirely different category from those of the sensations, namely, the category of disease. As reported by Price, we find asthma, anemia, bronchitis, laryngitis, pleurisy, tuberculosis, and diseases of the digestive system. Discomfort with no aftereffects is unpleasant, but diseases like pleurisy and tuberculosis are bad. If any one thinks that the unpleasant is the same as the bad, or that the pleasant is the same as the good, let him first refute Plato before he tells us that the ill effect of bad ventilation is discomfort with no aftereffects.

The use of experiments to establish a contention has become almost an obsession at the present time. Any assertion made in a plausible, vigorous manner with reference to numerous experiments which are alleged to establish the truth of the contention, seems to be readily and eagerly accepted by the public, who rely on the authority of the person making the statement backed by the experiments.

An experiment is an attempt to gain knowledge or information under conditions determined by the experimenter. Our knowledge is largely obtained from experience. We invent laboratory experiments, hoping to extend an experience, and, as knowledge comes from experience, our knowledge of life conditions in health and disease is obtained in this way. But the conditions of the experiment are determined by the experimenter and are generally limited, while in life the conditions that are to result in health or disease are many if not infinite, so that the result is pseudoknowledge which has no relation to wisdom. We do not always remember that the use of experiments to establish a contention is really reasoning by one form of analogy and is subject to all the limitations and conditions of that form of reasoning. An analogy is of value only to the extent that the parts of the analogue are the same as the parts in the contention to be established.

In the experiment of Hill the following limitations exist:

1. The number of persons in the experiment were too few.

2. Nothing of their age, physical condition, blood count, or pressure, before or after, is given.

3. The duration of the experiment was limited to a short time. It should extend eight or ten hours a day for six months or a year, with record of daily observations of the air conditions.

4. All degrees of temperature and humidity are excluded, except as stated: "78° F. after forty-four minutes and wet at 83° F." (? per cent.)

An experiment of a few hours' duration upon a few people is of no value in establishing a basis to explain the ill effect of bad ventilation, because the analogy of the conditions in life is lacking. As Richards's philosophy states (66): "Superficial observation of the complex phenomena of life can do but little; patient study of the fundamental laws of the universe can alone help to unravel the interwoven threads. Health, well being, and a profound philosophic outlook are alike dependent upon the result." The public has been misled by persistent assertions based on false analogy, and befuddled by bad logic. Whether the exploiters have consciously or unconsciously assumed this position may be left for their future writings to explain.

The factors of bad ventilation are many. These are problems for the physiological chemist who is

only at the threshold of his science, and to whom we are looking for the next great advance in the science and art of medicine and prevention of disease. "Each of the sciences works within its own region and colligates its details in the light of its own hypothesis; . . . and ever and anon, as some isolated thinker passes home his own hypothesis, he finds his thoughts beating on the limits of his science, and suggesting some wider hypothesis. The walls that separate the sciences are thin, and at times the light penetrates from one to the other" (67).

Clinician and internist will pass final judgment upon theories and practice of ventilation, and the theory and practice must be as broad and inclusive as the lives of the people. Does your theory and system produce healthy men, women, and children in home, office, factory, school, or shop?

We will admit that they do not have "depression, headache, or dizziness," but neither do they have the ruddy glow of health, and cases of tuberculosis develop from their midst, together with anemia and its long train of disasters to health and happiness.

We will grant that the excessive amounts of carbon dioxide in the experiments produced no apparent ill effects; we also know a person who has not bathed in years, and is apparently in good health. Clinicians are not recommending either practice as hygienic. It is true that all attempts to prove the existence of poison in expired air have failed (41), nothing but ammonia being found, but will the physiological chemist write the family tree of the ammonia in expired air to its mother substance, unstable proteid? One can find ammonia almost everywhere. It is an end product of proteid disintegration, but what of the intermediate bodies? Who will contend that the rebreathing of air (28) is conducive to the continued existence of good health?

It is also stated that the odors and emanations of the body are harmless and any supposed ill effects are purely psychic. It is admitted that this is a true statement of the personal experience of the experimenters, and this evidence can be supplemented by corroborative statements of the owners of many halls, picture shows, and fertilizer factories, but who will contend that the defenses of the body against infections are maintained at a high level when the breathing air is loaded with foul smelling odors? We pass the odors on to the physiological chemist, and at the same time we advise our friends not to breathe such air. The human body may be divine, but, as Thoreau says, "there is no odor so bad as that which arises from goodness tainted."

The subject needs clarifying. The word ventilation is an unfortunate word to use to define the idea, and most of the confusion upon the subject comes from this source. The effects, nausea, dizziness, etc., noted in the experiments of Flügge and Hill, may have been due to heat block, but thermolysis is not ventilation. Even these symptoms in all essential points are experienced in mountain sickness, which Henderson (36) believes to be due to an insufficient supply of oxygen, and that eminent physiologist states that "the subject needs investigating along new experimental lines rather than a rehearsal of old data."

What we mean by ventilation is an adjunct to body metabolism, and is not obtained in a brief experiment of a few hours or days. Good ventilation is such condition of the air in which we live that the metabolism and functions of the body may obtain their optimum condition. Bad ventilation is that condition of the air in which we live which lowers the metabolism and functions of the body and its resistance to disease; clinically, anemia is generally present, the subject is pale, and both physical and mental vigor are lowered.

Attempts have been made to classify sanitarians. We have pseudosanitarians and yellow sanitarians, and there are also sanitarians who have not quite the courage of their theoretical convictions, for, notwithstanding their belief of the harmlessness of carbon dioxide, of bad odors, sewer gas, rebreathed air, or air borne germs, they are quite unanimous in recommending outdoor air conditions. An editorial article in the *Journal A. M. A.* for October 11, 1913, states: "In point of fact, nothing can discredit the rational open air treatment." Hobler (38) states: "The most favorable conditions for maintaining blood pressure at normal are those present in the open air. To obtain such results indoors, such methods of ventilation should be employed as to approximate the condition of out of doors." Hough (68) says that after all, the final test is the experience of the occupants of the room.

I wish now to call attention to an experience in ventilation made under actual conditions of life (69). In a close, stuffy, conventionally ventilated schoolroom, filled with body odors, occupied by pupils, restless, easily fatigued, hacking, and coughing, and where it was not uncommon for one to faint, I placed wood frames covered with medium weight, unbleached cotton cloth in the lower sash opening of five windows. Fifty square feet of opening were so screened. The restlessness, hacking, and coughing disappeared; instead of becoming easily fatigued, the pupils showed increased energy, did better work, and discipline was easier to maintain. Sumner school, in Syracuse, in which I tried this out, is now fully equipped with fresh air screens in every class room, hall, and coat room. There are seventy-eight windows screened with a total opening of 645 square feet through which filtered air is diffused; odors have disappeared, with a great freedom from dust. Out of door conditions of air purity exist in the building, together with a temperature of comfort.

Subsequent examinations revealed a scientific basis for the improved conditions. The humidity was found to be practically that of the out of doors air. The dust was practically eliminated, except where mud was brought into the room by the children's feet. The odors entirely disappeared and the lighting of the room was not interfered with, the screens giving a diffused light that was comfortable to the eyes.

The conclusion is inevitable that in this experience the resulting conditions were not only those of comfort, but those that are at the foundation of health. "After all," as stated by Hough (9), "the final test is the experience of the occupants of the room," and therefore to give that experience I will

quote what the principal and teachers have to say who have worked and lived in fresh air school rooms: The principal, Alice S. Town, of Sumner School, writes: "When you first suggested screening one room for an experiment, while I agreed to try it, I was doubtful of its success. After weeks' trial I was completely convinced of the success of the experiment. Since then eight rooms have been equipped with the screens at the request of the teachers in those rooms, and I hope before another year we shall have them in every room in the building."

Miss Whalen writes: "The open air room was enjoyed from November to May. The class entering the room at midwinter made no objection to change in temperature. Twice only were the windows lowered because of strong wind. Attendance was unusually good. There were no colds until April. One case of measles and one of scarlet fever occurred. The children are quiet and attentive, showing little, if any fatigue to the end of the day. Upon entering the room the fresh clean air was always noticeable; winter seemed forgotten here."

Miss Hinsdale, head of the Kindergarten, writes: "Your fresh air window screens have certainly been most satisfactory in our kindergarten. Our attendance of little folks during the winter months was unusually good. Reason for this: The children seemed free from colds, thanks to plenty of fresh air. Children more wide awake, less restless, and not tired when session closed. As teachers, we both found our voices stronger and throats less sensitive."

Miss Reisig, of the 2-2 grade, writes: "Since having the open air windows I find the children less restless. It is very much easier to keep their attention. They do not seem tired, even at the close of the school. The attendance has been good. The children themselves like the fresh air and do not complain of feeling the cold. Personally, I have felt benefited by the fresh air."

Miss Marie Keefe, of the 5-1 grade, writes: "After using the screen windows for the past term, I feel as if I should never want to teach in a schoolroom without them. There are five windows in our room, and I can recommend and praise them most highly, as they are a wonderful help. The discipline is easier, as the children do not become so uneasy and restless. I have also noticed that there has been less coughing in school during the past winter than ever before. It is my opinion that the screen windows would prove a great help in every class room."

Miss Amelia A. Morris, of 8-1 grade, writes: "In four of the eight windows in my schoolroom I had cloth screens placed in last December. They were there until May, and I was greatly pleased with the results. The air was much fresher all the time than by the old method of ventilation. The windows were open during all kinds of weather, only a strong wind making it necessary to close them partly or entirely. I had no cold during these months and very few pupils were absent because of colds. I am heartily in favor of the cloth screens, as I think it the only safe way to keep the air fresh and pure in a room occupied by so many people."

Miss Kinsella, of the 5-2 grade, writes: "We have enjoyed our open air room very much this term. The air has always been pure and fresh and the room did not at any time seem close, as it often does with closed windows. When we moved during the middle of the term from an open air room to a closed room, both the children and I were greatly disappointed. The principal said we might take the screen windows with us, but as it was impossible for them to be transferred for a few weeks, the children and teacher who were then in our former room had enjoyed the open air room so much that they did not want to give up the windows. The principal then very kindly had some made for our room and we were happy again. I have found the discipline of the room to be much better since we have had the screens. The children do not get so restless or tired as formerly. During the winter the children had fewer colds than usual, which I believe to be due to being in the fresh air all the time. I also found this to be true in my own case. We are all very glad that you tried the experiment in Sumner School."

From Madison School Annex, an old furnace heated building, Miss Frances T. Daley writes: "We tried your cloth screen method of ventilation as an experiment in our school this year, and were highly pleased with the results. The temperature of the room was not lowered, and there was absolutely no draft. The air, being sifted, entered gradually, yet was changing constantly. Only in case of severe rain or snowstorm was it necessary to lower windows. I think it surpassed artificial ventilation, for in the latter air usually comes in over the heads of the children, increasing danger of colds from drafts. A naturally dark room might be made too dark, yet in our rooms we all liked the subdued light. To a certain extent screens might be receptacles for germs. I think they should be occasionally sterilized. I will be pleased to discuss the method with other teachers, and recommend their use in other schools."

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Abstracts and Reviews.

CHRONIC ULCERS OF THE STOMACH AND DUODENUM.*

By WILLIAM J. MAYO, M. D., Sc.D., LL. D.,
Rochester, Minn.

The development of the diagnosis and treatment of chronic ulcers of the stomach and duodenum in St. Mary's Hospital, may be divided into three periods. The first case of pyloric obstruction was operated on in 1895, a Heineke-Mikulicz pyloroplasty being performed. The second operation was a gastrojejunostomy with the Murphy button. While an increasing number of such operations was performed, the only cases operated in were those in which there was a marked obstruction at the pyloric end of the stomach, which was believed to be due to gastric ulcer. During the second period, from 1900 to 1906, it was recognized that obstruction was a terminal condition, and studies were undertaken with a view to the earlier termination of the malady. The suture took the place of the Murphy button, and the posterior method of gastrojejunostomy replaced the anterior method. In the third period, from 1906 to 1914, the relation of the clinical symptoms to the lesion came to be better understood, the Röntgen ray took the first place in the diagnosis of these lesions, the value of the purely laboratory examination of gastric contents was found to have been overestimated, and the necessity for the excision of gastric ulcers, because of the menace of cancer, was recognized. It is probable that a large number of the supposed ulcers reported in women heretofore were in reality the result of pyloric spasm due to cholelithiasis or to some intestinal lesion.

In differentiating between an ulcer in the pyloric end of the stomach and one in the first portion of the duodenum, the situation of the pyloric veins is the determining factor. Just at the pylorus, from above and below, short, thick veins, usually one or two cm. in length, come into view from behind and pass forward. There is a distinct notch at the points of emergence of the veins. From these veins there usually extends an arching vein from each side, sometimes uniting, forming the pyloric vein, sometimes ending in a spray. This superficial pyloric vein is not so characteristic as the thick veins just described, but, when present, it is a ready means of differentiation.

The terminal three fourths inch of the pyloric end of the stomach is not often involved in ulcer. The more common seat of gastric ulcer is along the lesser curvature, often saddle shaped. The ulcer is more often on the posterior than the anterior wall. But whether situated anteriorly or posteriorly, a superficial ulcer at the point of contact often appears on the opposite wall; the "contact" ulcer. The gastric ulcer itself is, as a rule, clean cut, with a hard grayish white base, and is round or oval in shape. Outside of its crater there is often a massive infiltration into the outer layers of the muscularis and peritoneum. Over this very frequently protective adhesions are found, sometimes binding the seat of the ulcer to other organs, such as the pancreas or liver, a condition of incomplete or protected perforation. The induration is always very much more extensive than the actual crater and is not entirely dependent on the size of the ulcer. The situation of the ulcer, however, may be at any point in the wall of the stomach.

Multiple ulcers are not frequently found at operation, which is contrary to the early views based on clinical observations and post mortem findings in deaths due to acute ulcerative processes in the stomach. These processes were usually gastrotoxic in origin and not often the source of chronic ulcer. Multiple ulcers of the stomach and duodenum or separate ulcers of the stomach and duodenum coexist in about five per cent. of the cases.

The character of ulcers of the duodenum differs in many respects from that of ulcers of the stomach. They are usually to be found in the upper two inches of the duodenum and more often in the anterosuperior wall. When found on the posterior wall, they are usually of the same character as when found in the stomach. A typical crater and the contact ulcer on the anterior wall may give rise to an independent induration. As a rule, the duodenal ulcer has its origin below the pylorus, but when it extends toward the stomach it usually stops short at the pylorus, which it may undermine. In exploring for ulcers of this description there is occasionally a difficulty in discovering the posterior ulcer because it was concealed underneath the projecting pyloric ring. The mucous membrane of the upper

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duodenum is thin and glandular, and ulcers confined to the anterior wall, if they take eventually the craterlike character of the gastric ulcer, will develop into a localized mass over the site of the ulcer. Many times, however, no crater is found in the mucous membrane in duodenal ulcer, but rather a discolored, motheaten patch in the centre of which may be a dimplelike ulcer and outside of this a typical induration. It is probable that this variation from the ordinary type of gastric ulcer explains why duodenal ulcers have been so frequently overlooked at autopsy.

In the early history of the disease long periods of remission may occur in which it would appear from the symptomless course that the ulcer had healed. Yet case after case operated in during the period of remission does not show the ulcer to be healed—thereby repeating the history of appendicitis and gallstone disease inasmuch as the recovery from each attack is erroneously supposed to be a cure. Permanent healing of chronic ulcers of the stomach and duodenum by nonoperative means must be of rather infrequent occurrence. That a large number of acute, subacute, and some chronic ulcers are cured permanently cannot be doubted, but if they fail to show permanency after a reasonable attempt at cure under ordinary conditions of life, the patients should be treated surgically, not only from the standpoint of the disability of the patient, but also from the standpoint of mortality. Gastrojejunostomy is the most generally useful operation for gastric ulcer and has a wide field of application. Especially is this true when there is obstruction in the vicinity of the pylorus. While posterior gastrojejunostomy is the operation of choice, in certain cases adhesions may prevent its use. In these cases the anterior operation has given good results. For those ulcers which lie in the body of the stomach and in which the gastrojejunostomy must be made beyond the point of ulceration, the results are less favorable. Because of the menace of cancer all ulcers of the stomach, without regard to their situation, should be excised if possible. Local excision of the ulcer without gastrojejunostomy has sometimes failed to effect a cure. Therefore, as a rule, gastrojejunostomy should be done in addition to excision.

For posterior ulcers of the body of the stomach which have become adherent, especially to the pancreas, transgastric excision of the ulcer has been of service. In *hourglass* stomachs gastrogastrostomy is a desirable operation, although resection in continuity when it can be done has given good results. In some cases, gastrojejunostomy fulfills the indications admirably. When the ulcer occupies the pyloric end of the stomach, the pylorectomy of Rodman gives excellent results, both immediate and remote. In those ulcers of the body of the stomach that cannot be excised and in which gastrojejunostomy cannot be done, temporary jejunostomy is distinctly useful, especially in cases in which a differential diagnosis between malignant and simple ulcer cannot be established.

Gastrojejunostomy is a most satisfactory operation in all those cases of ulcer of the duodenum in which there is actual or potential obstruction. Moynihan has been followed in infolding the ulcer with fine silk and placing one or two sutures in such manner as to block the pylorus to prevent food entering the ulcer area during the healing period. This blockage by suture cannot be expected to be permanent, but in connection with the permanent obstruction produced by healing of the ulcer it usually answers the purpose. If there be neither actual nor potential obstruction, this blockage should be accomplished by more efficient means. The fascia closure of Wilms and the omental strip closure of Kolb have been used, in each case applying the living tissue to the groove previously made by the suture blockage. Several of these patients were reexamined some time after the operation and the pylorus was found blocked.

At the present time we are excising a considerable percentage of duodenal ulcers when they are situated so that it may be readily done. In earlier cases simple excision was practised and a certain percentage of them failed to obtain complete relief. It was found necessary to make thorough provision for drainage at the pylorus after excision, either by the Heinecke-Mikulicz pyloroplasty or, what was found still better, the gastroduodenostomy of Finney, which lends itself admirably to the excision of the duodenal ulcer.

Duodenal and gastric ulcers at the pyloric end of the stomach yield equally good results following operation. The greater the distance of the gastric ulcer from the pylorus the greater the technical difficulties in its operative relief, the greater the mortality and, on account of the deformities which may be occasioned, the less certain the cure. But taking the patients as they come, at least 95 per cent. of those with gastric ulcer will be cured or greatly relieved by operation. The operative mortality in the gastric ulcers, counting all cases dying in the hospital without regard to length of time thereafter nor cause of death, was 3.8 per cent. The results in duodenal ulcer are extraordinarily good, 98 per cent. of the patients either being cured or greatly relieved by the operation.

In a small percentage of the cases of both gastric and duodenal ulcers there has been a definite recurrence of symptoms and in which it would appear an actual redevelopment of the original ulcer had taken place. A small number of these patients have been reoperated on and in each instance the source of trouble proved to be a gastrojejunal ulcer in the suture line of the original gastrojejunostomy, as a rule due to the sloughing of the continuous sutures of silk or linen which had been used in the gastrojejunostomy. Occasionally fixation of the pyloric end of the stomach in the adhesions about an ulcer has continued to give rise to such pain and distress as to lead to the belief that the ulcer had recurred or at least to the idea that the operation was a failure. In these cases the unilateral pyloric exclusion of von Eiselsberg as a secondary operation has given permanent relief.

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Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXLIV.—How do you treat diphtheria? (Closed.)

CXLV.—How do you treat alcoholic cirrhosis of the liver? (Answers due not later than April 15th.)

CXLVI.—How do you treat scarlet fever? (Answers due not later than May 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The Prize of $25 for the best essay submitted in answer to Question CXLIII was awarded to Dr. S. J. Essenson, of New York, whose article appeared on page 686.

PRIZE QUESTION NO. CXLIII.

THE TREATMENT OF GALLSTONE COLIC.

(*Concluded from page 738.*)

Dr. M. Milton Eckert, of New York, states that:

The first indication is the relief of pain, and this is best controlled by the hypodermic injection of morphine sulphate, grain one quarter combined with atropine sulphate grain 1/150, to be repeated in one half hour if necessary. The action of the morphine is to decrease the pain and allay the spasm; the atropine relaxes the spasm of the muscular coats of the ducts and thus allows the stone to pass through.

Locally, hot applications are applied to the right hypochondrium, in one of the following forms, hot mustard paste, hot flaxseed poultice, or hot water bag. If practicable, the patient should be placed in a hot water bath for its relaxing effect. If collapse is present, camphor, three grains, in oil or ether is indicated and given by hypodermic injection. After the colic has been controlled by these measures, the next indication is the aftertreatment, which should be immediately begun.

The patient should be kept in bed for two or three days, and, for the first twenty-four hours, should have a fluid diet. The bowels should be kept open by enemata, Carlsbad salts, or sodium phosphate. The hot applications to the right hypochondrium should be continued until the tenderness has disappeared.

Hexamethylamine, grains forty-five to sixty daily, should be given for its antiseptic action upon the biliary passages. If medicinal treatment is not controlling the attack, surgery should not be too long delayed.

Dr. Frank Bortone, of Jersey City, N. J., remarks:

Our aim in treatment will be, 1, to facilitate the passage of the stone; 2, to relieve pain; and, 3, to combat associated depression. In order to facilitate the passage of the stone we must relax the spasm of the biliary musculature. This will also relieve the pain, vomiting, and associated depression.

If the attack is mild this can be accomplished by applying hot fomentations over the region of the liver and the drinking of a pint of water as hot as can be taken. Better results may often be obtained by placing the patient in a hot bath at 115° F. and by the administration of twenty-five drops of Spiritus ætheris nitrosus in two drams of chloroform water every fifteen minutes. Sometimes a high cold colon irrigation gives relief. How it acts, I do not know. In the majority of cases the attack is severer and other methods must be used. To relieve spasm and pain one quarter of a grain of morphine sulphate with 1/100 of a grain of atropine should be given hypodermically. If necessary, a few whiffs of chloroform may be given now and then, just to take the edge off the pain. An hour later, if required, one sixth of a grain of morphine combined with 1/100 of a grain of atropine may again be given hypodermically. Coaltar products, as a rule, should be avoided, as they add more depression to an already depressed system. When the pain has subsided, the vomiting will stop; if not, bismuth subnitrate, grains ten; cerium oxylate, grain one; magnesium oxide, grains ten, all in one powder, may be given every two or three hours. During the attack no food should be given. The depression may be combated by brandy, whisky, or by hypodermic injections of camphor.

If medical treatment should fail and complications dangerous to life should occur, for example, impaction of the stone or stones in the common bile duct, causing acute obstruction accompanied by profound general symptoms, surgery must be resorted to.

Dr. Melvin T. Woodhead, of Fort Plain, N. Y., avers that:

All medication by mouth, at least for the time being, is contraindicated. Since most homes of the present day have adequate bathroom facilities, a very practical thing and something that is not liable to form a drug habit is a tub bath at a temperature of about 110° F. for fifteen or twenty minutes. Many times the relief is instantaneous. While the hot bath has the effect of relieving the congestion in the liver and gallbladder, and by so doing diminishes the pain, the psychic effect diverts the patient's mind. Should the patient still be suffering with pain at the completion of the bath, give morphine sulphate grain one fourth hypodermically and place the patient in a warm bed. In order further to relieve the constipation and the load of toxins, the colon should be irrigated with about two quarts of hot decinormal saline solution.

The next procedure is the application of a large cold-hot pack placed over the upper zone of the abdomen. The preparation of this pack is as follows: A compress of flannel is wrung out of water at room temperature and applied over the region of the abdomen previously specified. Immediately afterward, a hot flannel compress is bound over it. When the cold compress is dry, it is again moistened, while the hot compresses are changed every hour. The cutaneous vessels are first contracted by the cold and later dilated by the heat, bringing about an active hyperemia of the skin and stimulating.

through the nerves, the secretion of mucus in the gallbladder. The circulation is also improved. This latter treatment is continued until all signs of inflammation in the liver and gallbladder have subsided.

Where the irritability of the stomach persists and the vomiting of bile and retching do not respond to these measures, it is well to perform a gastric lavage. On the following day, the more acute symptoms having subsided, the patient is given a course of calomel followed by a saturated solution of magnesium sulphate, two ounces, served cold. Calomel is one of the best drugs we possess for removing the bile from the congested liver and gallbladder.

The diet during the first twelve hours, provided that the stomach is in a receptive condition, consists of hot tea and plain toast or milk with lime water. As the patient shows improvement, the diet is gradually increased. Special emphasis is placed on a strict dietary, excluding eggs, fruits, and acid vegetables for several weeks. Our patient should be encouraged to drink freely of spring or plain water, since by so doing the biliary passages are kept active and the bile does not become concentrated.

As prophylactic measures, I would recommend the use of Carlsbad salts for two or three months:

℞ Magnesii sulphatis, ...ℨii;
Sodii sulphatis, ...ℨi;
Sodii bicarbonatis, ...ℨiiss.

M. Sig.: One teaspoonful in a tumbler of hot water before each meal.

On account of its action in inhibiting the growth of bacteria in the bile and preventing the nucleus of a calculus, hexamethylenamine, grains five, every four hours, is given for several weeks.

Moderate exercise is necessary to stimulate the blood and indirectly prevent congestion in the liver and the resulting cholangitis and cholecystitis. Excessive exercise is to be avoided, since, in a patient predisposed to chronic cholelithiasis, riding, golf, automobile tours, or any exercise which jolts the body, may be sufficient to give rise to another attack of gallstone colic.

There are frequently recurring acute attacks of gallstone colic, as well as many chronic cases which do not respond to medicinal measures, and rather than temporize, such cases should be dealt with surgically.

Dr. Harry B. Gudgel, of Hazleton, Ind., points out that:

The methods of prophylaxis are very limited. If, however, calculi have been formed, it remains with the physician to endeavor to modify the disturbance and guard the complications to a favorable termination, and if possible remove the calculi. The treatment of this condition is best divided into three stages: 1. The relief of pain; 2, endeavor to assist in expulsion of the stone; 3, guard against renewed suffering and new formation. In an attack of moderate severity salicylate of sodium or strontium salicylate in two to four grain doses, every two to four hours, or the following may be given:

℞ Morphinæ, ...gr. ss;
Tincturæ nucis vomicæ, ...ℳx;
Aquæ, q. s. ad.....ℨii.

M. Sig.: Teaspoonful every twenty to forty minutes until effect.

It is well to bear in mind, as the pain ceases abruptly as soon as the stone obstructing the passage is removed, that the toxic effects of opium and its alkaloids are to be carefully avoided. If the stomach will not retain internal medication, the hypodermic injection of 1/100 grain of atropine sulphate, repeated every one or two hours for two or three doses, will often assist. But if the pain is severe, more urgent measures will be found necessary. The most satisfactory is the inhalation of chloroform or the hypodermic injection of one quarter grain of morphine sulphate and 1/150 of atropine sulphate, repeated every hour for two or three doses, if necessary.

Enemata of twenty drops of the tincture of opium in five or six teaspoons of warm water, or opium suppositories are to be recommended and used if occasion demands.

For the nausea and vomiting which are sometimes troublesome, the following mixture is helpful:

℞ Acidi carbolici, ...ℳvi;
Bismuthi subnititratis, ...grs. xx;
Elixiris pepsini, q. s. ad.....ℨi.

Sig.: Half teaspoonful every half hour.

Should the nausea continue, small doses of cocaine, followed by small bits of cracked ice, will generally quiet the condition. If the symptoms of collapse appear, a cup of strong hot coffee or fifteen to thirty drops of the aromatic spirits of ammonia, given in wine or whiskey, repeated as necessary, will usually control. Should more active measures be needed, then the hypodermic use of camphor is to be recommended.

In conjunction with the internal treatment, hot poultices or hot water applications to the hypogastric region are very grateful; the ice bag is to be mentioned, but only exceptionally is cold to be preferred. Painting the liver area with equal parts of chloroform and olive oil, followed by application of heat (hot water bottle) is helpful.

After the acute symptoms have subsided, the expulsion of the stone is of next import. Olive oil, from two to four ounces, two to four times daily, does good; however, the fecal concretions formed by this oil must not be misleading. Liquid and refined petrolatum in one to three ounce doses twice daily, is a good lubricant, and has this in its favor, that it does not, so far as determined, produce fecal concretions. Insist upon the patient taking absolute rest (preferably in bed), give a gentle laxative followed with succinate of sodium in doses of three to five grains or the pill of one fifth grain each of podophyllin and calomel four to six times daily, continued for from ten to fifteen days, watching the bowel actions for evidence of calculi.

Have the patient drink a tumbler of one of the better alkaline waters (Vichy, or any of the many good ones in the market) an hour before the morning and evening meal. Alkaline waters serve a double purpose, assisting to expel the calculi and preventing more or less the new formation. Externally, frequent and systematic massage is advised of the liver region and frequent bathing in hot water.

It must be observed that the only proof that the attack was true gallstone colic is the expelled

stone in the bowel evacuations. The condition granted, it remains to ward against renewed suffering, and to prevent the formation of new calculi. To accomplish this the patient must lead a quiet, inactive life. Food must be light, easily assimilated, but nutritious. Heavy foods, fats, acids, and spices must be forbidden; the afterbreakfast cup of coffee or tea is permissible, also an occasional glass of one of the light wines. Insist that the patient take at least a quart of some good alkaline water daily.

Medicinally, Durande's remedy of three parts of ether and two parts of essence of turpentine, given in doses of three or four drops five or six times daily, or the oleate of sodium in moderate doses will be helpful. Either of these is capable of giving good results. Turpentine, however, is injurious to the kidneys.

Of unusual cases, it might be mentioned, that occasionally in women the condition is so very light, and all symptoms that refer to the gallbladder are so obscure that it is almost impossible to make a diagnosis, and as the symptom of most prominence is nervousness, a diagnosis of neurosis is given, which results in the patient visiting the various sanatoria and watering places with little or no benefit. Rest, loose clothing, careful diet, alkaline drinks, and suitable medication would probably greatly relieve the condition.

If medicinal measures fail, then the last resort is to surgery, which of late years has been attended with very brilliant results. The first attack of gallstone colic, although severe, hardly convinces the patient that an operation is necessary, and the conscientious physician will hesitate to recommend an operation which is attended with so many undisputed dangers. Then, lack of evidence that the former attack was true gallstone colic causes further hesitation, consequently the patient is rather upheld in his opinion not to be operated upon. Yet with proof clinically and the observance of the expelled calculi, together with frequent and severe attacks, an operation must be advised, especially so when symptoms of abscess or purulent cholecystis appear. However, it behooves us in every ordinary case to make a careful and thorough trial of rest, regulated diet, and medicinal measures before resorting to surgery.

Therapeutic Notes.

Treatment of Gonorrheal Rheumatism.—Sainz de Aja, in *Revue de chirurgie* for August, 1913, is stated to have found sodium salicylate injections far more efficient than either serum or vaccine therapy in gonococcal arthritis. A solution of the drug was injected in the vicinity of affected joints on alternate days. Increased pain results at first, but this is soon followed by a sedative effect similar to that produced by morphine, and a considerable lessening in the joint swelling. Improvement is already noticeable after two or three injections have been given.

Where several joints are involved the best plan is to inject a twenty-five per cent. solution of sodium salicylate intravenously. The dose employed by the author was one dram (4 c. c.) of this solution. Remarkably good effects are sometimes obtained from this measure. One patient with arthritis of the knee was cured by two injections. Another, suffering from epididymitis, was enabled to walk five hours after an injection. In others the effects were less prompt and in a few, nil, but on the whole, the author considers salicylate injections a most valuable measure in gonorrheal arthritis. The effect is vastly greater than when the drug is given by mouth.

Treatment of Erysipelas.—Léon Labbé, in *Paris médical* for May 24, 1913, is credited with the following combination for local use in erysipelas:

℞ Ætheris, ...ʒiv (100 grams);
Camphoræ pulveris, ...ʒiii (100 grams).
Solve.

This is to be painted repeatedly over the affected surface in phlegmonous and especially in gangrenous erysipelas.

Treatment of Earache.—J. F. Crump, in the *Journal of the Arkansas Medical Society* for September, 1913, advises, in the commoner forms of earache for children, the instillation every three hours of five drops of the following anodyne combination.

℞ Atropinæ sulphatis, ...gr. ¼ (0.015 gram);
Cocainæ hydrochloridi, ...
Phenolis, ... āā gr. v (0.3 gram);
Epinephrine (1:1000 sol.) .....ʒss (14 grams);
Glycerini, q. s. ad.....ʒiv (16 grams).
M. et ft. solutio.

This will relieve the pain in almost every case. If, however, it fails, and a purulent condition supervenes, incision of the drum membrane and drainage are indicated.

Ether in the Treatment of General Septic Peritonitis.—L. Jeanneret, in *Revue médicale de la Suisse romande* for December, 1913, reports a case of generalized peritonitis following appendicitis in a boy seven years of age, in which Morestin's procedure of introducing ether into the peritoneal cavity seemed to yield excellent results. Operative intervention was not decided on until twenty-eight hours after the child had exhibited sudden, acute symptoms of perforation. The prognosis was considered hopeless at the time, the temperature having already fallen considerably below normal, the pulse being at 150 to 160, and abdominal palpation being no longer felt by the patient. At operation pus with Bacillus coli odor was found covering the gut and filling the pelvis, while the appendix was gangrenous and perforated. After cleansing the abdominal cavity a glass drain was introduced into the pelvis and one and two thirds ounce (50 c. c.) of ether poured in through it. The pulse and temperature soon improved; recovery from anesthesia was slow, but there was no vomiting. Rapid betterment followed until the seventh day, when, two hours after the drain had been changed, fever developed. Next day, there was nausea, coated tongue, and rigidity. In the evening 50 c. c. more of ether was poured in through the drain. The child complained of severe pain, but only for a brief interval, and soon after became somnolent. Next morning, all the symptoms had disappeared, and recovery thereafter was uneventful and complete.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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GLIMPSES OF MODERN SURGERY.

The meeting of the American Surgical Association in New York during the week of April 6th, followed by the fourth congress of the International Surgical Association, which has just closed, serves to accentuate the development of surgery from a merely mechanical matter of amputation and stitching into a specialty which includes such diverse subjects as morphological changes in bacteria under the influence of ultraviolet rays and the study of gastric and duodenal ulcers under the aspect of infectious diseases. The modern surgeon cannot be content with the amputation of a limb or the excision of an offending ulcer; he must know the etiology of the disease, the effects of which he is called upon to remove; he must be a diagnostician of the first order so that he may know when to operate; he must be a pathologist of wide knowledge and acute observation in order to recognize at sight unexpected pathological conditions which may be uncovered in the course of an operation; he must have a wide and thorough knowledge of therapeutics in order to direct the postoperative treatment of his patient, and, in addition to all these qualifications, he must have that manual dexterity, that mechanical ingenuity, and that promptness of action in emergencies without which no man, however comprehensive his theoretical knowledge, may hope to become a really great surgeon.

The meeting of these two organizations in New York brought together a remarkable company of men, and those who were privileged to hear their discussions could not fail to be inspired with a keen appreciation of the wide and accurate knowledge and the sincere and serious devotion to the service of mankind possessed by our representatives gathered from almost every section of Continental Europe, the United States, and Canada. The brief abstract of the proceedings which will be given in this and subsequent issues of the JOURNAL, while recording the salient features of the meeting, necessarily fail to convey an adequate idea of the interest and enthusiasm manifested at the scientific sessions. Socially the meetings were remarkable in the variety and extent of the entertainment provided by the American surgeons and their families for our European confrères, all of whom, we hope, will retain pleasant memories of New York, its institutions, and its people.

THE BOYLAN BILL.

We have been asked—by laymen—why we have voiced objections to the Boylan bill passed recently by the New York Legislature and now awaiting the Governor's signature. Like all physicians, we are gravely concerned with the problem of drug addiction and are obviously in favor of any measure that will safeguard the dispensing of narcotic poisons so as to confine their use to cases where the indications are unmistakable. We believe, however—as do the sponsors of the bill—that addiction is a question of health and comes therefore strictly within the purview of doctors only, particularly of boards of health; we fear that no layman, however well read or instructed by physicians at second hand, is competent to handle it. Physicians, for example, would not say, as paragraph 249-a of this bill does, that "constant use by any person of any habit-forming drug . . . is . . . dangerous to the public health." They would make sharp distinctions between people who might and might not be benefited by narcotics. In the former class are some diabetics, for example, victims of inoperable growths, of advanced tabes dorsalis and other spinal cord lesions, and of certain obscure neuroses, attended with tachycardia, excessive timidity, and other distressing symptoms, such as probably made habitués of De Quincey, Coleridge, Wilkie Collins, to mention only a few afflicted men of great talent whose work we would not willingly allow to perish. On the other hand, physicians would be unanimous in barring narcotics from children; and this bill fails to mention the young. While more or less harass-

ing restrictions are put upon the physician, there is nothing to prevent the rascally peddler from filling his pockets in an adjoining State and selling opiates in obscure corners to any boy or girl with a dime. Physicians would like to imprison such peddlers for a long term of years.

The exception in the Boylan bill of domestic and proprietary remedies, "actually sold in good faith (!)" and containing the equivalent of one quarter grain of morphine to the ounce, invalidates largely the whole bill. A victim who takes a quarter grain of morphine or heroine daily is just as firmly hooked as the ten grain addict; and there is reason to believe that the victims of certain patent cough cures outnumber all other habitués ten to one. That many of them are ignorant of their habit is beside the point. The sponsors of the bill profess to be anxious to learn where they can ascertain how one addict began the habit; we take a melancholy pleasure in pointing out where many thousands began.

The final paragraph in a bulletin issued by the sponsors of the Boylan bill is to our mind so vicious in principle that its mere perusal ought to excite public indignation. It reads: "Especially do we urge that all people send us in confidence the histories of known cases of the drug habit. *Knowledge of how one addict* BEGAN *the habit may enable us to prevent it in a thousand others.*" This passage will appeal to the basest instincts of a host of congenital informers and busybodies who will salve their consciences with the flattering unction that they are "saving" somebody; thus were secured the blessings of the Inquisition, the Star Chamber, the *Vehmgericht*, the Venetian Council of Ten.

We cannot make it too clear that we are in absolute sympathy with all intelligent effort to control drug habituation. We object to what seems on the part of the public a growing disposition to withdraw gradually from physicians all the rights and privileges that we believe would be accorded them by a highly intelligent community with confidence and pride. Our attitude toward the bill is admirably expressed by the editor of the English *Universal Medical Record* in the issue for March, 1914, who, in commenting upon Doctor Terry's conclusions as to the narcotic problem in Jacksonville, Fla., remarks:

> Doctor Terry writes, of course, for the conditions he finds in the United States, where it would seem much easier to pass coercive measures than it is in Europe, but where, on the other hand, much less effect is given to the laws than is the rule on this continent. Doctor Terry's suggested legislation does not seem to make it difficult to procure drugs by post from other towns, nor does he touch the extensive bribery and corruption to which this kind of legislation invariably gives rise.

What is really new and terrible is the acquisition of drug habits by children. Were it in our power we should devote our attention exclusively to that factor of the problem and hunt down relentlessly all purveyors to the young, not only of narcotic alkaloids, but of cough remedies and similar mixtures containing them. Following up middle aged and old habitués will not, in our opinion, be productive of permanent results; such victims have so perverted their metabolism and nervous and cardiac action that they would be no better off without their drug than with it, or, at all events, treatment, to be successful, would have to be extended over so long a period of time as to be out of the question for wage earners; while no treatment, however thorough or ingenious, would prevent speedy relapse on the part of weak kneed, self indulgent, wealthy or well to do subjects.

INTRASPINAL INJECTIONS OF MAGNESIUM SULPHATE IN TETANUS.

The approach of the so called "glorious fourth" with its numerous deaths from tetanus, renders the treatment of tetanus a particularly interesting subject at this time. The therapeutic means at our disposal, chloral hydrate, opium, chloroform, and other purely symptomatic remedies, as well as the antitoxic agents, phenol and antitetanic serum, have proved of uncertain value in fully developed cases —the condition of most patients when first seen— but the actual worth of intraspinal injections of magnesium sulphate is still to be definitely determined. Last year, Kocher and Arnd published interesting data upon this method of treatment, based on their own experience. During the period of eleven years between 1900 and 1911, the Hôpital de l'Isle, of Berne, received eighty-nine cases of tetanus which gave a mortality under methods other than magnesium injections of fifty-five per cent. Compared even with these unusually good results, the magnesium treatment, employed since, proved more satisfactory, since twenty-seven cases gave a mortality of only fifteen per cent. Obviously, this might be accounted for if the cases had all been of a mild type, as was believed to have been the case when the Baccelli phenol method with its wonderful results was first introduced; but this explanation would hardly apply here. While in Italy, tetanus may not have been so severe as in other countries, as some held, we are dealing in Kocher and Arnd's series with cases which in many instances were severe. The showing made, therefore, can legitimately be said to be distinctly favorable to the magnesium treatment of Meltzer.

Still, considerable additional clinical evidence will

be necessary to establish the treatment on a firm footing. Two cases reported recently by H. Vulliet (*Revue médicale de la Suisse romande,* March 20, 1914) tend to suggest that the older methods might prove more effective in some instances. Thus, both of his cases occurred in children and were equally severe; the patient who received magnesium sulphate injections died; the one who received chloral hydrate and antitetanic serum survived. While expressing faith in the magnesium treatment, Doctor Vulliet recalls also its drawbacks. Arrest of respiration through the direct action of the magnesium on the centres is not infrequent. Kocher met with this untoward effect four times in succession. Tracheotomy, intubation, forced insufflation, and intraspinal lavage are mentioned by Vulliet as resources which always must be available. Sufficient stress does not seem to have been laid, from our viewpoint, upon the injection—preferably intravenous—of calcium salts for the purpose of overcoming magnesium nervous paralysis where this has extended so far as to threaten the vital functions. It seems not improbable that if this rapidly acting remedial agency were used in magnesium poisoning, many of the deaths from respiratory paralysis might be prevented.

The production of respiratory arrest may in some way be related to the strength or quantity of magnesium sulphate solution employed. Thus, while Meltzer and Auer advocate doses of three centigrams of the magnesium salt per kilo of body weight, and inject five to six cubic centimetres of a twenty-five per cent. solution, Kocher used a fifteen per cent. solution and injected as much as ten cubic centimetres. This discrepancy may explain the untoward effects noted. Indeed, the margin of safety between the effective and the lethal dose of magnesium sulphate is narrow, as one may readily convince oneself—as we have done—by injecting the drug subcutaneously in animals. On the whole, in tetanus one is dealing with a disease the fatality of which warrants energetic methods, even though they entail some risk. The end to be attained is the saving of life, and this the magnesium method has undoubtedly accomplished in a number of instances.

THE BOVINE TUBERCULOSIS MENACE.

From recent statements issued by Mr. Paul E. Taylor, secretary of the New York Milk Committee, which, coming from such a responsible source, must be considered trustworthy, it would appear that, notwithstanding the large sums expended by the State of New York for the destruction of tuberculous cattle, the work is carried on very inefficiently by the Department of Agriculture, and also that there is much corruption and crookedness in the department. Up to 1901 little doubt was entertained as to the infectiousness of the bovine tuberculosis virus for man. Koch then came out with his startling statement that the human variety of tuberculosis could not be transferred to cattle, and that the results did not indicate the occurrence of bovine tuberculosis in man; immediately researches were started anew; the evidence left no doubt of the infectiousness of the bovine virus for children, though in the case of adults this was not established. As is well known, a very important series of studies was made by Park and Krumwiede, in 1911, at the research laboratory of the Department of Health of the City of New York. Nearly all the cases examined had been selected because they were thought likely to be due to bovine infections, and it seemed, with the knowledge at hand, that a large series of nonselected cases of every type of disease attainable, and, further, cases under average conditions of exposure to infection, would add to our knowledge of the true extent of bovine infection, and so afford information of great importance in sanitary control. Among the conclusions reached were: Tubercle bacilli, as isolated from man, fall into two groups, one of which is identical with those found in cattle; that is, all tubercle bacilli from man and cattle fall into two groups, which have been designated the human and bovine types. These two types are probably different, owing to the residence in different hosts over long periods, and as such are stable. The evidence of rapid change of type is incomplete and inconclusive. Bovine tuberculosis is practically a negligible factor in adults, and very rarely causes pulmonary tuberculosis. In children, however, the bovine type of tubercle bacillus causes a marked percentage of the cases of cervical adenitis, and also a large percentage of the rarer types of alimentary tuberculosis requiring operative interference or causing death, directly or as a contributing cause in other diseases. In young children it becomes a menace to life and causes from 6.33 to ten per cent. of the total fatalities from the disease.

The necessity for well directed effort for the suppression of bovine tuberculosis is therefore evident. In the New York Medical Journal for October 11, 1913, Dr. J. Rosenberg called attention to a vaccine evolved by him which he stated was capable of immunizing milk producing animals, and in a paper, A Method to Decrease the Frequency and Mortality of Tuberculosis, in the *Interstate Medical Journal* for March, he again urges its employment. It should be the duty of every State and town, he says, first to discover the disease and destroy the sick cows, and then prevent new infec-

tion by vaccination. At present we have only the author's word for the efficacy of this vaccine, but if, after thorough investigation, the statements made concerning it should be substantiated, a material advance in the warfare against tuberculosis will have been made.

DRINKING WATER AND DENTAL CARIES.

Dr. J. Basil Cook contributes to the *Lancet* for March 28, 1914, some studies he has made concerning the relation of the quality of the drinking water in various urban localities to the incidence of dental caries; his inquiry was limited to children over twelve years of age, and four or more carious teeth was the standard selected. The conclusion seems to be warranted that hard water has not only a favorable influence on the teeth, but also—and for that reason probably—on the death rate in children. Doctor Cook believes that the matter deserves further study and would like to have information from rural communities.

AVOIDANCE OF MEDDLESOME OBSTETRICS.

E. Hastings Tweedy, F. R. C. P. I., in an article on lacerations of the perineum and their treatment by his simple methods, in the *Dublin Journal of Medical Science* for March, 1914, takes occasion to point out that obstetrical surgery differs in many respects from general surgery, and that in Dublin they have learned this fact to the great advantage of their statistics. The best results in obstetrical practice, he says, are not obtained by costly surgical appliances, and it is upon the recognition of this fact that the success of the Dublin School has been built. No published figures from any obstetrical hospital approach the Rotunda in lowness of morbidity percentage, and in no other institution are the efforts of Nature exploited to a greater extent. In proof of this assertion, he points to the incidence of persistent occipitoposterior position. A comparison of figures will show that forceps are less often applied to overcome this abnormality in Dublin than elsewhere, and failure in normal rotation is observed in less than one per cent. of infants born. Similarly throughout the whole history of the hospital there has been shown a clear appreciation of the limitations of surgery. The general surgeon surrounds himself with elaborate paraphernalia, and relies greatly upon the cooperation of his assistants. He can afford to finish his work to its most minute detail, and can with impunity permit himself mental lapses which might spell disaster in midwifery practice. In the latter the actor relies wholly on himself. He has to perform his part without any stage properties, and win success despite adverse surroundings. In order to do so, his resources must be skillfully husbanded, and, discarding the mere trimmings of his art, he must hold firmly by the essentials.

Mr. Tweedy must not be taken as condemning the scientific arrangements available in the modern up to date hospital. In such hospitals it is possible to demonstrate the brilliancy of obstetrical surgery, and to show how foolproof the conduct of a normal delivery can be made. Nevertheless it remains true that unnecessary interference cannot be practised even in these aseptic institutions without increasing the morbidity percentage rate.

THE DANGER OF SMALLPOX.

The Department of Health of the City of New York has very properly issued a warning to employers of labor that in case of the outbreak of smallpox in any place of employment, the latter will be promptly placed under quarantine; this should be sufficient to insure the vaccination of all workers, who, owing to the unique crowding in tenement dwellings in New York, would otherwise furnish an ideal fuel for this virulent disease. Calculating from the recent epidemic in Toledo, the department *Bulletin No. 236* states that a similar outbreak in New York would mean 30,000 cases in a year. The department deserves credit for its courage in overriding for the general good all ill informed or spiteful denunciations of vaccination *viva voce* or by pamphlet or periodical.

News Items.

Change of Address.—Dr. I. S. Hirsch to 96 Park Avenue, corner Fortieth Street.

A Cooperative Hospital has been opened at 401 Marlborough Street, Boston; it is said to be the first cooperative hospital established in the United States. Dr. Andreas Forest Christian is the general superintendent and manager.

The St. Lucie County, Fla., Medical Society held its annual meeting at Fort Pierce recently and elected the following officers: President, Dr. David Rose, of Sebastian; vice-president, Dr. C. M. Conkling, of Fellsmere; secretary-treasurer, Dr. C. G Roehr, of Fort Pierce.

A Million Dollars for the University of Pennsylvania.—The final settlement of the estate of Dr. Lewis A. Duhring, for many years professor of dermatology in the University of Pennsylvania, shows that the university will receive approximately a million dollars, this sum being willed to the university hospital, to the general library, the department of dermatology, and the department of archaeology. The College of Physicians of Philadelphia is also one of the residuary legatees and will receive probably more than $100,000.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, April 20th, Philadelphia Clinical Association, and the Medical Society of the Woman's Hospital; Tuesday, April 21st, West Branch of the County Medical Society, and the Philadelphia Laryngological Society; Wednesday, April 22d, County Medical Society; Thursday, April 23d, Pathological Society and the Germantown Branch of the County Medical Society; Friday, April 24th, Neurological Society, Northern Medical Association, South Branch of the County Medical Society, and the Medical Club.

Examination for Assistant Surgeons in the United States Public Health Service.—Boards of commissioned medical officers will be convened to meet at the Bureau of the United States Public Health Service, Washington, D. C., and at the Marine Hospitals in Boston, Mass.; Stapleton, N. Y.; Chicago, St. Louis, New Orleans, and San Francisco, on Monday, April 27th, for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service. For full information regarding the scope of this examination, address the Surgeon General of the United States Public Health Service, Washington, D. C.

A Home for Nurses in Syracuse, valued at $15,000, and with accommodations for twenty nurses, has just been opened.

The Death of Doctor Bryant.—The Association of the Medical Reserve Corps, United States Army, New York Division, at a recent meeting passed appropriate resolutions on the death of Dr. Joseph Decatur Bryant, who was one of the first appointees to the corps and had maintained an active interest in the local organization up to the time of his last illness. Many members of the corps in a body attended the funeral of Doctor Bryant.

Resolutions on the Death of Doctor Bryant.—At a special meeting of the Medical Board of St. Vincent's Hospital, held April 8, 1914, the following minute was adopted:

WHEREAS, It has pleased God, in the infinitude of His mercy, to remove from his sphere of usefulness in this community, Joseph Decatur Bryant, M.D., LL.D., for twenty-seven years visiting surgeon to this institution; therefore, be it

Resolved, That in the death of Doctor Bryant, St. Vincent's Hospital has lost an officer whose great surgical skill and vast experience have always been at the service of its sick and suffering poor; the sisters in charge have lost a loyal friend and wise counsellor, and his colleagues have lost an inspiring example of duty and a genial companionship difficult to replace.

Resolved, That a copy of these resolutions be spread upon our minutes, and that copies be sent to the public and medical journals, and a copy be sent to the family of deceased.

JOSÉ M. FERRER, *President*.
CHARLES EDWARD NAMMACK, *Secretary*.

Personal.—Dr. Robert A. Hatcher, professor of pharmacology at Cornell University, is conducting a course of pharmacology in the Rush Medical School, University of Chicago. The course began about April 1st and will cover a period of about two and a half months. It will comprise both lectures and laboratory work.

Dr. Winford A. Smith, superintendent of Johns Hopkins Hospital, Baltimore, has been engaged by the University of California to supervise the planning and erection of a new hospital in San Francisco, which will cost a million dollars.

Dr. John B. Johnston, professor of comparative neurology in the medical department of the University of Minnesota, has been selected by the board of regents of the university as dean of the department of science, literature, and arts, succeeding Professor John F. Downey, who has been connected with the institution for thirty-four years.

Resolutions on the Death of Doctor Le Fevre:—

WHEREAS, The Medical Board of the Beth Israel Hospital has learned with deep sorrow of the death of Dr. Egbert Le Fevre, consultant physician to the hospital for the past twenty years, and

WHEREAS, Dr. Egbert Le Fevre was a man of noble character, sterling integrity, and high medical attainments, and was always ready and willing to devote his valuable services to the welfare of the patients, and by his uniformly kind and courteous treatment of the members of the visiting staff as well as the patients, gained for himself the sincere appreciation of the medical board and the gratitude of the sick poor, be it

Resolved, That as a mark of the esteem in which Doctor Le Fevre was held by the medical board and in appreciation of his services to the Beth Israel Hospital, the foregoing resolutions be spread on the minutes of the medical board and that a copy be sent to the family and be published in the medical press.

Committee on Resolutions: { L. J. LADINSKI, M.D., chairman;
D. ROBINSON, M.D.,
A. A. HIMOWICH, M.D.

The American Surgical Association held its annual meeting at the Hotel Astor in New York on April 9th, 10th, and 11th. The meeting was presided over by Dr. William J. Mayo, of Rochester, Minn., the president of the association. Many of the members of the International Surgical Association arrived from abroad in time to attend some of the sessions of the American Surgical Association and take part in the discussions. The New York Fellows of the American Surgical Association tendered the out of town members a dinner at the Hotel Biltmore on the evening of April 10th. At the executive session of the association, held on April 11th, the following officers were elected. President, Dr. George Armstrong, of Montreal; vice-presidents, Dr. Lewis L. Pilcher, of Brooklyn, and Dr. Frank E. Bunts, of Cleveland; secretary, Dr. Robert G. LeConte, of Philadelphia; treasurer, Dr. Charles L. Gibson, of New York; recorder, Dr. Archibald MacLaren, of St. Paul; members of the council: Dr. A. G. Gerster, of New York; Dr. Charles A. Powers, of Denver, and Dr. William J. Mayo, of Rochester, Minn. The next annual meeting will be held at Rochester, Minn., the date to be determined by the council. A condensed account of the proceedings of the New York meeting will appear in an early issue of the JOURNAL.

Civil Service Examinations in Philadelphia.—Among the examinations for which the Philadelphia Civil Service Commission will hold examinations in the near future are the following in the medical service: April 24th, at 9:30 a. m., chief resident physician, with a salary of $4,000 a year; April 27th, at 9:30 a. m., assistant chief resident physician, salary $1,500 a year; chief nurse, $1,400 a year; assistant chief nurse, $900 a year; head nurse, $600 to $900 a year. On May 4th, at 9:30 a. m., there will be an examination for district supervisor of medical inspection of public schools, which is open to assistant medical inspectors, bureau of health, and to school medical inspectors.

Legislation against Fraudulent Advertising.—The New York Board of Aldermen has finally passed the bill introduced by Hon. William H. Chorosh which provides that anyone who publishes an advertisement containing assertions, representations, or statements which are untrue, deceptive, or misleading, shall be subject to a fine, of not less than $25, or imprisonment of not less than five days or more than six months, or by both fine and imprisonment. In Chicago, a similar ordinance has proved most effective in a campaign directed against venereal quack advertisers and steps are being taken by the Department of Health to make similar use of the new law in this city.

Women's Medical Society of New York State.—The eighth annual meeting of this society will be held at the New York Academy of Medicine on Monday, April 27th. An interesting program has been arranged, which includes papers by Dr. Katherine Bement Davis, commissioner of corrections of New York; Dr. Lillian South, third vice-president of the American Medical Association; Doctor O'Malley, of Washington, D. C.; Dr. Grace Peckham Murray, Dr. Mathilda Wallin, Dr. Lillian K. P. Farrar, and Dr. Rosalie Slaughter Morton. The officers of the society are: Dr. Marion Craig Potter, of Rochester, president; Dr. Sarah G. Pierson, of Rochester, secretary; Dr. Edith M. Hatch, of Buffalo, treasurer; Dr. Mathilda Wallin, of New York, is chairman of the committee of arrangements.

Doctor Bainbridge's Complimentary Dinner.—Dr. William Seaman Bainbridge was the host at a complimentary dinner to specially invited members of the International Surgical Association at the Hotel Biltmore on Monday evening, the 13th inst. Nearly 200 of the most distinguished local and foreign surgeons enjoyed the excellent menu, the superior service, the genial hospitality of the occasion, beside hearing with great interest the communication of Dr. Emil Hertoghe, of Antwerp, on Hypothyroidism, which was illustrated with striking lantern slides. Addresses were also given by Doctor Bainbridge, Doctor Wyeth, Dr. A. C. Jordan, of London, England; Dr. Benjamin Merrill Ricketts, of Cincinnati (also illustrated); Dr. Jabez Jackson, of Kansas City; Dr. Ernest LaPlace, of Philadelphia; Dr. G. E. Pfahler, of Philadelphia; Dr. H. A. Fairbank, of London; Dr. Robert T. Morris, of New York; Dr. C. E. de M. Sajous, of Philadelphia, and Dr. M. B. Tinker. Some twenty-five guests arrived late in the evening from the dinner of the American Surgical Association at the Hotel Astor and joined in the discussions.

Civil Service Examinations in New York.—Among the positions for which the New York State Civil Service Commission will hold examinations on May 9, 1914, are the following:

Assistant physician, homeopathic. This examination is intended to provide eligibles for the position of assistant physician in the State homeopathic hospitals at Middletown and Gowanda. Salary $1,200, increasing $100 each year to $1,600, with maintenance. The examination is open to men and women who are licensed medical practitioners in this State. Unmarried men preferred.

Bacteriologist, State Department of Health. Women only. Salary $1,200 per annum. Applicants should have a thorough knowledge of the principles of bacteriology. They must have had considerable practical experience in the bacteriological diagnosis of infectious diseases. A good general knowledge of clinical microscopy and of gross and histological pathology are desirable.

For further information regarding the scope of the examinations address the Civil Service Commission, Albany, N. Y.

The International Surgical Association,

Fourth Triennial Congress,

HELD IN NEW YORK, APRIL 13, 14, 15, AND 16, 1914.

FOR the first time in its history the International Surgical Association has met outside of the kingdom of Belgium, where it was formed twelve years ago, and where three congresses have been held at intervals of three years. The occasion brought together in New York a number of distinguished surgeons from all parts of Europe and North America, and even the brief abstract of the proceedings which we are able to present will prove of value and of interest as an index of the advances in the three main lines to which discussion was limited.

THE PROGRAMME.

Over a hundred eminent European surgeons, many of them accompanied by relatives, came to New York to take part in the Fourth Congress of the International Surgical Association. The programme included the discussion of three main topics, amputation, gastric and duodenal ulcers, and grafts and transplantations. Only one American surgeon presented a paper under each of the three heads, the programme being truly international in character. In honor of the occasion operative clinics were arranged for in all the leading hospitals of Manhattan. The officers of the congress were Professor A. Depage, of Brussels, president, and Dr. J. P. Hoguet, of New York, secretary. The following are the officers of the International Surgical Association: Professor Charles Willems, of Ghent, president; Professor J. Lorthioir, of Brussels, treasurer; Professor L. Mayer, of Brussels, secretary. American committee: Dr. L. L. McArthur, of Chicago; Dr. C. L. Gibson, of New York; Dr. R. H. Harte, of Philadelphia. The following committee was designated by the American Surgical Association: Dr. L. L. McArthur, Dr. C. L. Gibson, Dr. R. H. Harte, Dr. Rudolf Matas, of New Orleans, and Dr. R. G. Le Conte, of Philadelphia.

At an executive session held on Wednesday afternoon the officers of the association were reelected as named above. Dr. W. W. Keen, of Philadelphia, was elected president of the Fifth Congress, which will meet in Paris in 1919. A secretary for the congress will be selected later.

The Inaugural Session.

The opening meeting of the Congress was held in the grand ballroom of the Hotel Astor and the audience was large. Many ladies from Europe who had come with their husbands and fathers relieved the meeting of the somewhat sombre tinge which is apt to color medical meetings. Unfortunately owing to stress of national affairs the President of the United States was unable to perform the opening ceremony, but he had an excellent substitute in the person of Dr. W. C. Gorgas, Surgeon General of the United States Army, who in his opening address, said that he had been sent by the President as his representative warmly to welcome the foreign visitors and to express the deep regret of the President at his unavoidable absence. Press of public affairs rendered it impossible for the President to come to New York at this time. Both the President and Government considered it the greatest honor to have the meeting in America. Colonel Gorgas felt that the meeting would stimulate thought and would be of the greatest value in every respect. Dr. W. J. Mayo, of Minnesota, as president of the American Surgical Association, welcomed the surgeons from Europe and laid emphasis on the fact that they, the American surgeons, owed Europe a deep debt of gratitude. He had been asked had America developed a typical school of surgery? and he had been compelled to answer No. For nearly a century America had depended, from the standpoint of surgery, upon Europe, and although very able surgeons had been bred in America, yet they owed their start to Europe. A surgery had arisen with American characteristics, but it had its origin in Europe. In the absence of Professor Charles Willems, of Ghent, the president of the Association, Dr. J. P. Hoguet, of New York, the secretary of the congress, read his address in French. Doctor Willems pointed out the losses which death had caused in the ranks of the association, mentioning by name those who had died. Dr. L. L. McArthur, of Chicago, chairman of the American Committee of the Association in the place of the recently deceased Dr. Roswell Park, of Buffalo, also delivered an address of welcome, in the course of which he referred in feeling terms to the death of Doctor Park.

Professor DEPAGE, in his presidential address given in French, said in part: The first three meetings of the International Surgical Association took place in Belgium—a preference was given to a neutral country, so as clearly to define the scientific and at the same time the fraternal character of the association. It was not necessary for him to say that it was the privilege of little Belgium to offer a meeting place to the learned men of all nationalities, covered by Europe herself with the shield of peace and liberty. The International Surgical Association

in quitting the neutral soil of Belgium and in choosing New York as the seat of meeting, showed the high esteem in which they held their American colleagues, and at the same time the confidence they felt in the final triumph of the ideas of peace and civilization, that the United States personified throughout the whole world. Surgeons necessarily represented by their profession itself a mute and constant protest against the evils of war, by organizing help for the wounded, and working during the periods of peace, to anticipate all the horrors of the battlefield, so as to be ready and waiting with their help. The surgery of war owed much to America; in 1861, Americans were surprised, so to say, by the Civil War; nothing had been prepared to sustain the gigantic struggle into which they were drawn; the medical service, as well as the army, was in its infancy; then improvised soldiers started up throughout the length and breadth of the land, and help for the wounded was organized by countless numbers of committees and associations which acted in unison, thanks to the initiative of a man that America may rank amongst her great citizens, Pastor Henry Bellows. The sanitary commission was acknowledged and established by President Lincoln under the name of "Commission of Enquiry and Information for all that Concerns the Sanitary Interest of the Union Armies."



DR. A. DEPAGE,
Of Brussels, President of the Congress.

He wished to draw attention to the existing state of affairs; that the international understanding should be reinforced more and more by the organization of help for the victims of war, was a thing to be desired. The Red Cross has done much. When Doctor Depage arrived at Constantinople in November, 1912, with the Belgian ambulance he found the American ambulance already installed under the direction of Doctor Ford. The Balkan war had only emphasized the lesson taught by the Manchurian war; the fate of the wounded depended more than all on the aid which was given in the front of the battle, for as long as an engagement lasted, the exposed ground was inaccessible for the ambulance men, of whom more than one had sacrificed his life, in spite of all precautions; thus hours passed, during which the men remained without help. Schaefer[1] had drawn a heartrending picture of this deplorable state of affairs. Haga[2] acknowledged that it was no longer possible for the ambulance men to circulate on the battlefield exposed to the hail of the shrapnel. What was to be done? The following was without doubt the solution: Each of the combatants must carry with him side by side with his cartridges, the objects necessary for a first dressing.

Surgeons would not reproach the modern gun for not killing with every shot; what they did desire was to reduce the so called efficacy of the shrapnel; it was too horrible. At a meeting of the Imperial Surgical Society at Constantinople, December, 1912, just at the time when the thunder of the cannons of Tchataldja could be heard, every day the fervent wish was expressed that the use of the shrapnel might be abolished on the same grounds as the explosive bullet. He hoped soon to see the "United States of Europe" in friendly intercourse with the United States of America, and if they saluted the eminent men present at this congress with profound respect, the deepest admiration was reserved for those among them who, following in the footprints of Franklin, Lincoln, Roosevelt, and Carnegie, worked to assure universal peace.

THE PROCEEDINGS

Amputations.

The meetings of the strictly scientific proceedings of the Congress were held in the north ballroom of the Hotel Astor. The first of these took place on the afternoon of April 13th, the papers and discussion being concerned with the subject of amputations.

Doctor Witzel, of Düsseldorf, read the first paper on amputation of the arm and forearm. The indication for an amputation can only be decided if one is in touch with all the modern resources capable of assuring the preservation of wounded, diseased, and deformed limbs. The aseptic treatment of open wounds, contusions, and fractures introduced into surgery by von Bergmann allows the postponement of amputation in time of war as well as in ordinary practice. The process of suture, anastomosis, and transplantation of the bloodvessels make possible the preservation of parts of limbs wounded or affected by arteriosclerosis. Bier's method of prophylactic hyperemia, in the case of suspected wounds, his method of hyperemia together with small carefully made incisions in the suppurating parts, preserve limbs when septicemia

[1] Schaefer, *Archiv für klinische Chirurgie*, 1906.

and pyremia would have otherwise demanded amputation. Modern operative orthopedics by means of osteotomy and musculotendinons transplantation restore their powers to useless limbs. In cases of simple tumors and even in myeloid sarcoma excision followed by transplantation is more than ever justified. Even in malignant tumors the adjunction of radiotherapy and chemotherapy allows the hope of a less radical position than formerly. Amputation of itself can never endanger life, and should procure for the patient a useful and painless stump. (a) The danger of the actual operation is decreased by the following measures: Increase of resisting powers, whether it is a case of emergency or not, complete arrest of hemorrhage in cases of accident, strengthening of heart action by camphorated oil, saline infusions, inhalation of oxygen, application of heat, respiratory exercise. Esmarch's tourniquet, preservation of warmth during the operation, and the choice of the anesthetic is also an important factor. General anesthesia is preferable on account of the psychic effect resulting from amputation. Hackenbruch's process is suitable for minor operations. Braun's endoneural anesthesia for bigger removals, always with the addition of narcotics and with strict attention to discipline in the working of the operative theatre; Bier's rhachianesthesia will rarely be indicated. (b) After the operation life will be preserved by the following measures: Simple and thorough asepsis, the carrying out of which depends as much on the choice of the point of amputation as in the technic itself.

The possibility of operating on healthy tissue admits of the use of more complicated methods; the necessity of touching upon infected regions causes the creation of elementary wounds. The section of tissues should be clean; in order not to injure their vitality it is necessary to work with gentleness, heat, and moisture. For this end the use of antiseptics must be rejected, and there must be a strict hemostasia. Cardiac tonics and respiratory exercise prevent thromboembolism. (c) To obtain a painless and serviceable stump, Witzel recommends the following rules: Clean section well above the nerve stumps; disarticulation and epiphyseal amputation, avoiding the opening of the narrow canal, prevent the formation of neuritis by fixation of the nerve roots on the surface of the sectioned bone; sealing the narrow canal by the processes of Bier, Wilms, or Ritter, or that of Bunge also prevents this accident. Methodical movement of the soft tissues by massage and early utilization of the stump in temporary processes serve the same purpose. For a good utilization of the stump as a lever for prothetical apparatus, regard must be had of the unequal retraction of the muscles and tendons. The suture of neighboring muscles and those of opposing ones between themselves help to maintain the functional equilibrium. Certain tendinous groups, particularly in the forearm, may be transformed into rings covered anew with skin giving the most lifelike protheses. The creation of levers possessing active movements and digital autoplasty give hope of remarkable success.

Dr. P. von Kuzmik, of Budapest, who should have read a paper on the amputation of the hand, was not present, nor was Doctor Ceci, of Pisa, who should have read a paper on the amputation of the thigh.

Dr. J. F. Binnie, of Kansas City, discussed amputations of the leg and stated it to be his opinion that no particular improvement had been made in the methods of amputating below the knee joint. Amputations through the leg, below the knee, all seemed to be equally safe no matter at what level they were performed. If a good weight bearing stump were secured, then the more of the leg that was retained below the knee, the more useful would it be to the patient. The improvements attained in amputations of the leg were all in the attainment of better weight bearing stumps, and the designs of artificial limbs must in the future adapt themselves to these improvements. Hirsch's and Bunge's aperiosteal treatment of the bony stump in any amputation and osteoplastic amputations under particularly favorable circumstances, were very valuable means toward obtaining ideal weight bearing stumps. Free transplantation of a fragment of bone to the end of the divided tibia may replace the more difficult and complicated osteoplastic methods of Bier and others. Doctor Binnie showed three men who had been fitted with artificial limbs to one or both of their upper extremities. One of these men had only one inch and a half of stump left of the arm which had been amputated. Another man had both arms amputated at the elbow, and the arm of the third man had been amputated considerably above the elbow. These men could pick a dime from the floor, write, light matches and unbutton and button their shoes. In fact, their artificial arms appeared to be really excellent substitutes, although no doubt practice had been an important factor in their dexterity.

Dr. M. Durand, of Lyons, France, dealt with amputations of the leg and foot. Concerning amputation of the toes he had this to say. One of the three middle toes may be amputated (a) by disarticulation of the second phalanx; (b) by metatarsophalangeal disarticulation; (c) by amputation in continuity of the first phalanx. These operations do not alter the functions of the foot. No other operation is recommended. The foregoing conditions also apply to the small toe. The great toe is amenable to all operations in continuity or contiguity. Total disarticulation, especially if carried out by the subperiosteal method, gives excellent results. Simultaneous disarticulation of the five toes makes but slight difference to the walk. Amputation of one of the four last metatarsal bones presents few difficulties. The disarticulation of the first metatarsal is a little more serious from a functional point of view. It has not, however, the disadvantages ascribed to it. The subperiosteal method is particularly favorable in this case. Amputations and disarticulations which affect the anterior tarsus without suppressing it entirely, must be recommended. These results are very similar to those of Lisfranc's disarticulation. Chopart's disarticulation, on the contrary is an unreliable operation; it risks a reversion of the stump and it should, if not entirely proscribed, at least be reserved for very exceptional conditions only. Ricard's operation and subastragaloid disarticulation are both excellent and have practically the same value in an amputation of the posterior tarsus.

Supramalleolar amputations and amputations of the lower third of the leg, mutilating but slightly, and rendering means of provision of solid skin tissues obtained from the heel, sometimes permit of the direct pressure of the stump extremity on the prothetical apparatus, the length of the leg lever and the power of the muscles which they preserve giving them a usefulness very similar to the tibiotarsal disarticulations.

Amputations of the middle third of the leg do not admit of the terminal weight bearing if performed according to classical methods. There is hope, although this point is not yet established, that the former osteoplastics will improve in their results.

Amputations of the leg above the middle part have ceased to deserve the name of amputation at the seat of election and should no longer be performed, save only when the extent of the injuries does not permit of a lesser sacrifice.

This appears preferable to the disarticulation of the knee. Amputations of the leg and foot no longer deserve to be studied from the point of view of their operative prognosis; these amputations owe their gravity solely to the affection which necessitates their performance and to the general condition of the patient. The progress of surgical technic and of asepsis have done away with the primitive formation of stumps. They have ensured a more correct adaptation of the stumps to the prothetical apparatus and a considerable increase of the utilization of these stumps. The great progress obtained in the principles of prothetical apparatus and in their technical realization have considerably improved the utilization of stumps in amputation of the foot and especially of the leg. It is due to this progress that we can now usefully perform amputations of the middle and lower third of the leg.

Dr. E. Ranzi, of Vienna, drew the following conclusions from what had been said concerning the amputation of the leg below the knee. 1. The most important condition for the portability of the stump is caused by removal of the excessive formation of the callus on the surface of the stump. Bier and Wilms avoid the fault by closing the narrow hole, the one with a flap of periosteum and bone, the other with sinew; Bunge, by the removal of periosteum and endosteum on the lower stump end. 2. The transference of the cut outside the portable surface, the prevention of adhesions between the soft parts and the stump are of less importance for the portability of the stump. 3. Of the methods which are most sought after for portability, the method of Bunge seems to be the best for war as well as in peace, because on the one hand it is the simplest and on the other hand, the results are the best if no prima intentio occurs. 4. In every method of operation it is of the greatest importance for the result that the patients take walking exercise and have massage as well as putting the weight on the wooden leg as soon as possible.

Those who took part in the discussion were Doctor Depage, Brussels; Doctor Steinthal, Stuttgart; Doctor Morestin, Paris; Doctor Pranke, Braunschweig; Doctor Lorthioir, Brussels; Doctor Zahradinbey, Doctor Lambotte, Antwerp, and Doctor Ritter, Posen.

Gastric and Duodenal Ulcers.—Doctor De Quervain, of Basel, Switzerland, who should have contributed the first paper on gastric and duodenal ulcers, was not present and his paper was taken as read; he had pointed out only the problems in diagnosis which are still uncertain. The following are some of the questions in doubt: 1. What is the frequency of spasm in the superficial ulcer of the small curve? under what conditions does this spasm occur in the absence of any ulcer? 2. What influence have ulcers removed from the pyloris on the latter? 3. What are the surest and most practical distinguishing signs between pyloric spasm and pyloric stenosis in the beginning? 4. What is the diagnostical meaning of the persistent repletion of the duodenal bulb? 5. What is the etiological value of the duodenal movement of the stomach? 6. What differentiation is there between duodenal ulcers encroaching upon the pylorus, true pyloric ulcers, and duodenal ulcers of low situation from the point of view of their action on the pyloric reflex, and on the gastric chemistry? 7. What are the surest radiological signs of the adhesions from the stomach and the duodenum?

Dr. H. Hartmann and Dr. P. Lecéne, of Paris, said in part: Duodenal ulcer is certainly more common than was thought some years ago; nevertheless its frequency has been exaggerated and in France, at the very least, they notice on an average one ulcer of the duodenum for eight or ten ulcers of the stomach. They think that the clinical criteriums, symptomatology described by Moynihan, and the anatomical pyloric vein, given as characteristics of duodenal ulcer, are far from being above criticism; the symptomatology described by Moynihan is simply that of pyloric spasm; as for the pyloric vein, it is very unreliable as regards situation and disposition. 2. At the base of the callous ulcers of the stomach, which are situated especially on the small curvature, are frequently to be found lesions of neuritis, accounting for the persistent pain which is among the principal elements in the symptomatology of these ulcers. With Hayem the authors agree that the carcinomatous evolution on the borders of the ulcer is noticed in about one fifth of the cases of callous ulcer. This frequency is still great enough to justify the treatment of these ulcers by resection when possible. The examination in a certain number of cases, of fragments of the gastric parietes, previously withdrawn at a distance from the ulcer, has very often shown us the existence of lesions of gastritis, either parenchymatous, hyperplastic, or mixed. This anatomical notion is important, for it proves to us that in ulcerous cases we have most often to deal with gastric tissues wholly diseased, in which lies the great importance of the postoperative medical treatment in these cases. 3. The importance of radioscopy and radiography in the diagnosis of gastric ulcers is today universally recognized; with a good technic, and avoiding the causes of error, a great part of the radioscopy can be printed, especially for the diagnosis of penetrating callous ulcers, Handeck's recesses, stomachs bilocular from ulcer, ulcerous pyloric stenosis, and perigastritis. For the diag-

nosis of ulcers of the duodenum, the services rendered by x rays appears to us much less evident. 4. The surgical treatment of gastric or duodenal ulcer must therefore not be opposed to the medical treatment; the first is only the frequently necessary complement of the second. The real results of the medical treatment observed at a lapse of time after the medical treatment are far from being as good as was formerly supposed; without speaking of serious complications, such as hemorrhage, perforation, and stenosis, they consider that all ulcers, gastric or duodenal, showing resistance to medical treatment belong to the surgeon. Posterior gastroenterostomy, performed on the pyloric cavern itself, at its most sloping point, seems to them the operation to be chosen in all cases of juxtapyloric ulcers of stomach or duodenum. The objection made to the operation, nonfunction of the passage if the pylorus is pervious, appears to them unfounded; experimentally and clinically they have shown that the gastrointestinal passage functions perfectly if exactly on the pyloric cavern. Indications for exclusion of the pylorus need still to be more clearly shown; the simple blocking of the pylorus has appeared to them generally sufficient; the absolute exclusion must be reserved for certain very limited cases, hemorrhage. In cases of pyloric callous ulcers where a cancerous degeneration is suspected, it is preferable to have recourse to pylorectomy when anatomically possible, closing the two edges and finishing by gastroenterostomy. In cases of callous ulcer of the small curvature, simple gastroenterostomy is often shown to be inefficacious. The authors think that in these cases it is better to have recourse to excision of the ulcerous zone, either by excision limited to the ulcer of the small curvature, or by segmentary resection of the stomach with suture end to end of the two gastric edges. The still fairly high mortality of these gastric resections will certainly decrease in proportion as their indication and technic become more clearly defined.

Dr. W. J. Mayo, of Rochester, Minn., read a paper on Chronic Ulcers of the Stomach and Duodenum, of which a full abstract is given at page 787 of this issue.

Unfortunately Sir Berkeley Moynihan, of Leeds, England, was not present, nor did he contribute a paper. His absence was greatly felt.

Dr. E. Payr, of Leipsic, read a paper dealing with the same subject and pointed out that with regard to etiology there were two principal theories: (a) That of a gastric or duodenal vascular lesion; (b) nervous origin by vasomotor spasm leading to a localized ischemia of the mucus; the cause of this spasm is a disturbance of the vegetative nervous system. None of these theories, thinks Payr, are sufficient to explain every case. Some mechanical causes occur in the localization and the form of the ulcers. The bacteriotoxic lesions also play a certain part. As for variety Payr points out that there are two types of duodenal ulcers according as their position is on the anterior or posterior wall. The first presents more of a tendency to perforation, the second to hemorrhage. Between the ulcer of the duodenum and that of the stomach there exist very appreciable anatomical and chemical differences. As to degeneracy the author draws attention to the fact that there cerainly are cases of malignant transformation of ulcers. These cancerized ulcers may be readily distinguished from ulcerous cancers. But it is often difficult to differentiate these two types from simple callous ulcers, especially when it is a question of cancers possessing much fibrous tissue such as Thomson's fibroids. Ulcer and cancer may also coincide in the stomach. It is actually impossible to establish the frequency of the cancerous transformation of a gastric ulcer, nor to establish before the operation a decided distinguishing diagnosis between callous ulcer and gastric cancer.

According to Payr, ulcer of the duodenum very rarely exhibits a carcinomatous degeneracy. With regard to operation Payr states emphatically that the callous ulcer of the stomach should be resected on every occasion that the general condition of the patient permits of the operation, especially when it is a question of small ulcers situated at a distance from the pylorus at the small curve and on the posterior surface. In all other cases posterior gastroenterostomy is the operation of choice. The excision of gastric ulcers generally gives unsatisfactory results on account of the persistent pylorospasm, unless accompanied by gastroenterostomy. Among the rules laid down by Payr for the technic of operation are the following: The excision or resection of duodenal ulcers must be absolute, except in persistent hemorrhage, imminent perforation, or suspected cancer. For duodenal ulcer the most efficient intervention consists of a gastroenterostomy combined with a unilateral pyloric exclusion after von Eiselsberg's method. If this operation is impossible of execution, the procedure to be followed is to shorten the pylorus by means of an aponeurotic band or a suspensory ligament. The exclusion of the pylorus may be combined with suspension of the stomach. Payr holds that Von Eiselberg's technic alone gives certain results. If a neighboring ulcer of the pylorus is resected at the same time, the advice given is to suture the stomach after the method of Billroth. For ulcers of the small curve and those of the posterior surface, total segmentary resection with axial suture of the stumps gives the best results. For some cases of neighboring ulcers of the pylorus, especially if the rate of acidity be increased, the speaker advises performing after resection a wide implantation of the gastric stump in the first jejunal handle after the technic of Reichel. Gastroenterostomy for simple or callous ulcers necessitates a subsequent treatment of atropine and alkalines for at least a year. Gastroenterostomy gives excellent results in cicatricial stenosis of the pylorus. In active ulcers, especially when they are distant from the pylorus, the results are less reliable. The mortality in resection of ulcers, especially by the total segmentary technic of Riedel, is ten per cent. or less. It remains higher, however, than that of gastroenterostomy, but to this must be added the later deaths from perforation, hemorrhage, etc. The clinical results of resection are good.

Some suggestive results obtained by Doctor Rosenau appear to have a bearing on the etiology of gastric and duodenal ulcers.

(*To be concluded.*)

Pith of Progressive Literature.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

February 5, 1914.

Significance and Origin of Protective Ferments.—Abderhalden is of opinion that the protective ferments arise from the organ cells and not, as formerly supposed, from leucocytes. These ferments appear in the blood after excretion from the organ cells. This can be demonstrated after the parenteral injection of foreign proteid. It is quite possible that certain cells may excrete their ferments into the blood stream under certain conditions, even without the substrate having first to appear in the blood. It requires further investigations to determine whether the presence of bacteria brings about the development of specific ferments and in what organ they are formed. The conclusive proof that the ferments arise in the organs is furnished by the absence of ferments in castrated dogs after the parenteral injection of testicular extract.

Abderhalden Serodiagnosis.—Allman has had fairly good results with this test in pregnancy, but in cases of myoma his results have been conflicting. In carcinomata of the genital organs his results, as well as those obtained with inflammatory conditions of these organs, have been conflicting.

Cotton a Source of Error in the Wassermann Reaction.—H. Langer has found that if serum is permitted to remain in contact with cotton and then expressed, the serum gives a positive reaction, in cases where the serum ordinarily reacts negatively. Out of ten serums tested, three reacted positively, while two others were anticomplementary. If the cotton is purer less influence is exerted on the serum. The explanation is to be found in the fatlike bodies which the serum absorbs from the cotton. It is therefore advisable to use only containers for serum that are sealed with either cork or rubber stoppers.

Osteitis fibrosa after Typhoid Fever.—A. Welz reports a case of remarkable thickening of the skull and both tibias in a man aged fifty-six years who had had typhoid fever when eighteen. These thickenings appeared when he was convalescing from the disease without any fever. He had a remarkable thickening of the bone on the left side of the skull and of both kidneys. X ray pictures show this was due to an osteoperiostitis of the bones of the affected region. These foci may continue to retain living typhoid bacilli even when no suppuration occurs for a long period of years.

Secondary Coli Infections of the Pelvis of the Kidney.—These affections of the kidney can only be considered as secondary when they occur in conjunction with other affections of the urinary organs. As a rule, these are secondary to gonorrheal infections. Coli infection occurs either as a pyelitic, nephritic, or pyelonephritic form. In women, as a rule, the bilateral infection is present, and if only one kidney is affected, it is the right. It arises either by direct ascent through the lymphatics from the bladder or by direct extension through the ureter. It is chiefly due to overtreatment that the urine becomes infected. If diagnosed and treated early it is almost uniformly curable.

February 12, 1914.

Abderhalden Test for the Diagnosis of Pregnancy.—L. Michaelis and L. v. Langermarck report their results with the Abderhalden test. Despite the extreme care with which they carried out the test according to the directions of Abderhalden, they were not able to demonstrate "that the serum of pregnant women contained a ferment which differed from that present in other women or men, and which was demonstrable in a regular clinically practical way." The biuret reaction cannot be considered of any aid since it is subject to so much variety of opinion. The variable character of the dialysers is another obstacle to the value of the test. The fact that a good many dialysers give a pseudobiuret reaction, and with ninhydrin and other tests are apparently impermeable to proteid, combine to render this test clinically without value.

Psychoses and Fermentative Processes.—Max Kasztan concludes from the fact that dementia præcox never develops before puberty and that in the catatonic form testicle and thyroid are broken down while in the hebephrenic form the testicle alone reacts that the secretions of the thymus, thyroid, and testicle have a decided influence on the development of the psychosis. The disturbances seem to be called forth by changes in the ganglion cells produced by nucleinic acid. Nucleinic acid is excreted together with phosphoric acid from the thymus at the time of puberty, into the glands of internal secretion and in cases of disturbance of these organs they are deposited in the organism.

Germ Carriers in Infantile Paralysis.—Carl Kling and Alfred Petterson have been able to demonstrate in eight cases of poliomyelitis, virus in the nasal and pharyngeal secretions of relatives who were in immediate contact with the patients, but had remained perfectly well. By evaporating the solution of the secretions at 38° C. and passing through a Berkefeld filter they were able to inoculate a monkey intraperitoneally and intracerebrally with a positive result. This proves the existence of virus carriers in this disease.

Atrophy of Hypophysis with Fatal Termination.—M. Simmonds reports a case of postpuerperal affection of the hypophysis lasting for eleven years, manifesting itself by the following symptoms: Menopause, muscle weakness, vertigo, and attacks of unconsciousness; in addition to this a marked anemia with rapid aging, a senium præcox set in. The patient died in coma and at autopsy nothing could be found to indicate cause of death until a careful examination showed the marked atrophy of the hypophysis which the history pointed to as being postpuerperal in origin as a result of a sepsis.

Infection with Bacillus fæcalis alkaligenes.—W. Krais and H. Straub report a case of general infection with Bacillus fæcalis alkaligenes occurring in a nineteen year old girl where the bacillus in question was isolated from the circulating blood. In another case, a man, the bacillus was isolated from the urine. Both cases simulated typhoid fever. The bacillus isolated corresponded culturally with that described by Schottmüller. The pathogenicity of this bacillus for human beings seems to be recognized

more and more, Hamm having described a case of pyelitis of pregnancy with a fatal outcome, in which the bacillus could be isolated in the peritoneal exudate.

Lead Neurasthenia.—Samson Hirsch describes a neurasthenic symptom complex which he had observed in patients suffering from lead poisoning, more marked in the ambulatory forms of the disease. The author is of the opinion that this manifestation of plumbism is one of the most common and that it is to be considered as a psychic form of lead dyscrasia.

Physiology and Pathology of Cholesterin Metabolism.—Bacmeister and Havers have been able to determine that in cases of gallbladder fistula in human beings as previously observed in dogs, the quantity of cholesterin seems to be increased in the bile, increases on an albumin diet and diminishes on a carbohydrate diet. Havers has also been able to determine that in dogs the cholesterin content of the blood shows the same variations and also diminishes in febrile conditions. This has also been demonstrable in the bile of dogs after feeding with albumin or fat bodies. In the latter months of pregnancy, cholesterin is increased in the blood, but is not excreted through the liver as it should be, and only in the puerperal period is the quantity in the bile increased.

February 26, 1914

Eugenics and Gynecology.—J. Veit discusses the lack of positive knowledge in the field of heredity which makes it impossible to formulate any rules with regard to the limiting of offspring. He cites the case of a chondrodystrophic dwarf who was delivered by Cæsarean section of a perfectly formed baby, while a well developed girl of eighteen gave birth to an anencephalic monster.

Extirpation of a Pancreatic Tumor.—W. Korte reports successful extirpation of a pancreatic cyst without suturing the wall of the cyst to the umbilicus or to any other part of the abdominal wall. By the insertion of a few pieces of gauze to facilitate drainage there need be no fear of any eventual complications.

Behavior of Certain Chemicals to Cancer and Luetic Serums.—Emmerich Wiener and Arpad von Torday have found that on the addition of the aldehyde reagent of Ehrlich to pure inactivated serum which contains a five per cent. solution of potassium gold cyanate, a precipitate is thrown down which dissolves only in the presence of carcinoma serum or luetic serums. This phenomenon occurs in about seventy-two per cent. of the cases of carcinoma tested and in seventy per cent. of luetic sera. This is not a cachectic reaction.

Quantitative Determination of Urea in Urine.—A. Hahn and J. Saphra contribute a new method for the determination of urea in urine which is very simple, and does not consume as much time as the older methods. This test depends on the presence of a urea splitting ferment found in the Soja bean which converts urea in the urine by the absorption of water into ammonium carbonate. It is merely necessary to determine the alkalinity of the urine before and after fermentation, with N/10 hydrochloric acid multiplied by 0.003 to get the quantity of urea present in one c. c. of urine. The ferment is best obtained by powdering the Soja bean and preserving in a dry form.

Treatment of Compound Depressed Fractures of the Skull.—Erich Gore suggests the replacing of the fragments of bone which had been previously washed in saline, for the closure of the bony wound. These healed very well by bony union without any subsequent epileptiform symptoms. Of seven cases, six were successfully treated in this manner.

Prostatic Hypertrophy and Wilms Prostatectomy.—D. Kulenkampff says that every prostatic hypertrophy, even though it does not cause symptoms, is deleterious to the function of the kidney and bladder, and since it is impossible to determine whether a cancerous change is present or not, it is better to recommend an early operation in these cases. In the partial enucleation methods the chief things to be considered are the paraurethral accessory prostate bodies. All enucleated prostate bodies should be immediately examined since the carcinomatous nodules in their early stages are capable of enucleation. There are many exponents of the lateral sacral operation which can be preceded by parasacral infiltration anesthesia. This operation is not followed by any fistula formation, and with a little care it is possible not to overlook any concrements.

Treatment of Obstipation with Istizin.—K. Klare reports his results with istizin and finds it an excellent laxative, its mild and lasting action rendering it very efficient.

CENTRALBLATT FÜR GYNÄKOLOGIE

February 7, 1914

Abderhalden's Reaction in Pregnancy and Menstruation.—Kjaergaard examined the blood of ten healthy women before and after menstruation, individuals in whom pregnancy could be ruled out. In them all there was an increase in the proteolytic activity before menstruation, an increase that approached and even went beyond the lowest limits of activity that may occur in the serum from pregnant women.

Etiology of Cancer of the Vagina.—Edelberg reports a case in which the exciting cause was evidently a ring pessary that had remained within the vagina for twelve years. At the line of contact was a large, deep ulcer extending laterally. Microscopic examination proved the lesion to be a squamous cell carcinoma. As a radical operation seemed impossible, the ulcer was curetted and cauterized.

Vaginal Fixation of the Uterus.—Voigt reports two cases, one a woman of thirty-seven, the other of sixty years, upon whom he had operated. In the first instance as a result of heavy work, the uterus was suddenly torn loose. In the second woman, a similar mishap resulted from a fall.

PARIS MÉDICAL.

Emetine Treatment of Amebic Dysentery.—C. Dopter states that he continues emetine injections four or five days after the first formed stool. Doses of even one and one third or one and one

half grain (0.08 or 0.1 gram) may be injected daily in apparently severe cases. Only exceptionally is there any difficulty after these doses. In spite of such treatment, recurrence may be noted eight or even ten days after apparent recovery, especially in the tropics. Dopter accordingly approves of giving repeated courses of emetine injections in order, presumably, to kill the young amebas as they emerge from the encysted, refractory stage. Examination of the stools will not always show these cysts where they are present, and it is therefore best, for the present, to follow Chauffard's plan, which consists in giving a second series of injections two weeks after the first, then a third after three weeks, and even a fourth, after a like interval. In cases of long standing, a series of injections should be given every month on five or six successive days.

PRESSE MÉDICALE.

March 14, 1914.

Leprosy in Rats.—E. Marchoux, from studies of leprosy in rats, finds a great similarity between rat and human leprosy as to signs, pathogenesis, course, and termination. The specific organism is fragile, succumbing to a temperature of 60° C. for fifteen minutes. It is easily inoculated into sensitive animals. Biting insects do not transmit leprosy. Sarcoptes and flies may, however, play an accessory role in its transmission. The germs ordinarily enter through an erosion of the skin, and infected flies were definitely observed by the author to produce leprosy through contact, even momentary, with abraded surfaces. The intact preputial mucous membrane permits entrance of the infection. Clinically recognizable leprosy is rare in comparison with incomplete (*fruste*) leprosy. Marchoux found five per cent. of Paris rats infected, though but 0.6 per cent. were clinically leprous. Spontaneous recovery from incomplete leprosy may occur. Incomplete leprosy changes to the complete after secondary infection or physical deterioration of the general system. Hygienic treatment, found useful in tuberculosis, is also of value in leprosy.

Diagnosis of Leprosy by Laboratory Methods.—L. M. Pautrier discusses three laboratory methods of diagnosticating leprosy: 1, Removal of a bit of tissue—even if it be only a macule or erythematous patch—and staining for the leprosy bacillus. 2. Examination of nasal mucus. Where the coryza usual in the leprous is absent, four grams of potassium iodide should be given on two successive days to bring on secretion. Karlinski's acidfast bacillus, apt to be mistaken for Hansen's leprosy organism, can be distinguished from it by its ready growth on ordinary media and the fact that it is pathogenic to guineapigs upon intraperitoneal injection. 3. Intracutaneous injection of 1/20 c.c. of Rost's leprolin, previously heated at 120° C. for twenty minutes. Leprolin is made by maceration of leprosy nodules and filtration, contains toxins, and was originally intended as a therapeutic agent analogous to tuberculin. In normal individuals, injection of leprolin causes a nonspecific local reaction similar to that due to concentrated tuberculin. In the leprous, on the other hand, there follows the formation of a small red nodule which in three days attains the size of a dime, with surrounding roseate area the size of a silver dollar. About the fourth there appears in its centre a purplish spot, and later a small scale, which falls off on the twelfth to the fifteenth day. In a doubtful case, Wassermann's reaction, which is positive in leprosy, might be of some service.

Syphilis in Chronic Aortitis.—C. Lian and A. Vernes, from observation of sixty-four cases, conclude that at any period of life, in a patient who has not had acute articular rheumatism, an aortic lesion is almost without exception of syphilitic origin. Syphilitic lesions of the sigmoid valves seem always to coexist with similar changes of the walls of the aorta. Nonsyphilitic chronic aortitis appears to be associated practically never with aortic insufficiency. In the middle aged chronic aortitis without insufficiency, a high arterial tension, arteriosclerosis, and nephritis, are often syphilitic. In the elderly and aged, on the other hand, these conditions are often due to causes other than syphilis.

March 18, —.

Abbott's Method in Scoliosis.—J. Calvé discusses critically the corrective methods of Abbott and Forbes for scoliosis. He agrees with Forbes that Abbott's manner of dealing with the lateral deviation of the spinal column may aggravate the already existing torsion, but asserts that this is true only of cases in which malposition of the ribs is very marked, the angle formed at the point of chief costal curvature being acute. In such cases the spinal rotation must be corrected before lateral pressure is applied. In the less pronounced cases, the lateral pressure corrects the spinal curve without acting on the rotatory displacement, and is therefore effectual in the way that Abbott intends it to be. Forbes has rightly laid stress on the fact that maximal rotation of the shoulders on the pelvis is essential for securing a powerful rotatory corrective force. But his method, taken alone, is insufficient, and must be supplemented by Abbott's. Abbott's method, with the improvements suggested by Forbes, and with modifications of technic in the individual case, as worked out by Calvé himself, is to be considered the best treatment in severe scoliosis, yielding results not now obtainable in any other way.

BRITISH MEDICAL JOURNAL.

March 28, 1914

Blood Pressure.—J. A. MacWilliam and G. Spencer Melvin have compared most methods in common use and conclude that the auditory method is the simplest and most accurate in the reading of systolic and diastolic pressures. They call attention to the marked influence which changes in the rate of the heart exert on the diastolic pressure in the absence of other modifying factors, and emphasize the necessity of considering this factor whenever the diastolic pressure is to be taken. The relation of diastolic to systolic pressure, other things being equal, is a most important means of determining the degree of sclerotic rigidity in the smaller vessels. If the heart were pumping into an absolutely rigid and inelastic system of tubes there would be

a high systolic pressure and the diastolic would be extremely low, or would actually fall to zero. An elastic system of tubes lowers the systolic and greatly increases the diastolic pressure. The same is true when the tubes are the human vascular system or when they are part of an artificial circulation system in the physiological laboratory. Indications derived from a consideration of the relation between systolic and diastolic pressures—other disturbing factors being absent—are not so simple as they seem. A tendency to increased diastolic pressure due to peripheral resistance may be associated with some rigidity of the larger vessels which tends to counteract the effects of peripheral resistance by lowering the diastolic pressure. Under similar conditions of rest, position, etc., a change of fifteen to twenty mm. in the diastolic pressure, if unattended by an alteration in the heart rate sufficient to account for its occurrence, is of vastly greater significance with regard to the condition and behavior of the peripheral resistance than is a greater change in the systolic pressure. In general a diminished pulse pressure is an indication of a decreased rate of flow from the arteries into the capillaries, except in cases with valvular lesions or gross cardiac disturbance. In their experience with the auditory method two facts stand out of importance. First, the necessity in reading the systolic pressure of making simultaneous control observations by the method of palpation. This is necessary because there are patients in whom a systolic sound is present even when the pressure in the cuff is far above that required to obliterate the pulse; probably due to conduction by the bone of a sound produced above the cuff. Second, in reading the diastolic pressure the point to be taken is that at which the sound rather suddenly diminishes in intensity. In some cases the brachial artery is obviously in an abnormally resistant condition, possibly due to spasm, so that the readings are too high. This resistance may be overcome by digital compression of the vessel for two to three minutes, when it is found to have lost its spasm and correct readings may be secured. By laboratory observations on a circulation scheme, the authors have been able to confirm the correctness of the use of the sudden weakening in the sound as an index of the exact diastolic pressure. From a series of observations on healthy young adults they find the average diastolic pressure to be about sixty-five mm. with a range of from fifty to eighty mm.; the average pulse pressure was about forty-six mm.

J. R. Murray, working in the same laboratory, studied by the foregoing method the blood pressure in cases of aortic insufficiency. His observations were chiefly concerned with differences in pressures in the upper and lower extremities, their upper and lower portions, or corresponding extremities. In cases in which little difference was found between systolic pressures in the arm compared with those in the forearm, there was also little difference in the readings between the thigh and leg. In aortic insufficiency the systolic pressure in the forearm averaged 7.4 mm. by the tactile method and 7.8 mm. by the auditory, above that in the upper arm. In the lower extremity the leg reading was sixteen mm. and twenty-four mm. by the two methods respectively, above the thigh reading. In normal persons the differences are not so great and are in the opposite direction. "The higher systolic pressures in the distal segments of the limbs may be interpreted as being due to an augmentation of the height of the systolic wave by a reflected wave from the periphery. Such augmentation can be easily demonstrated, as occurring under certain conditions, with a circulatory schema." The systolic averages by both methods fall into a descending scale: calf, thigh, forearm, and arm; the calf being about fifty mm. above the upper arm, with the thigh and forearm lying between. The diastolic pressure is about the same in all the arteries in the normal person, but in cases of aortic insufficiency it was found to be lowest nearest the heart, and to rise with increasing distance from it. The order of descent is the same as in the case of the systolic pressures.

Emetine in Pulmonary Tuberculosis.—James A. Raeburn was prompted to try the subcutaneous injections of emetine in pulmonary tuberculosis as a result of observations of Flandrin and Joltrain, who reported that its use checked many cases of hemoptysis. Raeburn confirmed their observations: he goes farther and finds that emetine seems to have considerable power of checking bronchitis, often causing its complete disappearance. It seems not to have any influence on the presence of bacilli in the sputum, or on the tuberculin reaction, its effect being solely on the bronchial inflammation. When there is a weak heart the drug should not be used, and in such cases its use has been found to be without beneficial influence on the bronchitis. He uses about 1.5 mgm. for the control of expectoration or to lessen the congestion of the bronchi. He has observed no ill effects with these doses.

LANCET.

Physiology and Pathology of Uterine Hemorrhage.—H. Beckwith Whitehouse limits his discussion to forms of uterine hemorrhage which occur without pregnancy and neoplasms, or to the physiology and etiology of menstruation. The menstrual blood is normally almost free from clot, but a close study of normal women shows that clots of small size are normally present in about half when looked for. Fibrin is found in menstrual blood in very small amounts, or it is entirely absent. This blood contains more calcium than normal blood; it contains fibrinogen, prothrombin, and thrombokinase, and it normally clots promptly after shedding. As fibrin is normally very scanty in the blood that escapes from the uterus, as antithrombin is not present in excess in such blood, we are left without an explanation of the disappearance of the clots. Whitehouse has carefully collected blood from the interior of the uterus in a number of normally menstruating women and finds that it clots very promptly, even in the catheter after it has been coated with paraffin. Thrombin was always demonstrable in abundance in such blood. Menstrual blood when mixed with clotted normal blood ob-

tained from a vein, had no delaying effect on the clotting. The clotted mixture was incubated at body temperature for six to twenty-four hours. Menstrual blood from the uterus was tested twelve times, and the clot was completely resolved in six and partially in the other six, while control clots without menstrual blood were unchanged. With menstrual blood from the vagina, that is, mixed with the cervical secretions, complete resolution of the clot occurred seven times and partial resolution five, out of a total of twelve experiments. Further experiments have shown that the thrombolytic substance which causes this resolution of the clot in menstrual blood acts in a quantitative manner; it is contained in the fluid portion of the blood after centrifugation, and it is sharply specific, not acting upon fibrin obtained from ox blood. Whitehouse says, therefore, that menstrual blood contains an abundance of elements which are needed for clotting and which actually lead to clotting with the tendency to check bleeding; in addition it contains a specific thrombolytic agent which subsequently dissolves the clots. As to the causation of menstruation, the author believes that this function is possibly under the control of an ovarian hormone which is partly absorbed and leads to dilatation of the uterine vessels and initiation of menstruation. The role of the other endocrin glands is not known in its relation to menstruation.

Operations for Hemorrhoids.—Arthur Neve has performed 850 hemorrhoid operations, almost all by the clamp and cautery method, and reports most excellent results and a striking freedom from aftereffects, as catheterization, bleeding, recurrence, etc. There was only one death, and this in a weakly old man. Neve describes his technic and lays special emphasis on the necessity of complete dilatation of the sphincter. When the entire anal circumference is occupied with hemorrhoids, he places the clamps alternately parallel to the long axis of the rectum and at right angles to this, or parallel to the anal margin. In this way the operation may be performed without fear of undue contraction of the scar tissue.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Conservative Operative Treatment of Long Standing Inversion of the Uterus.—H. S. Crossen refers to the different conservative operations and expresses the opinion that vaginal operation is by far the safer. The Spinelli method (complete division of the anterior wall of the cervix and corpus uteri) he considers altogether the most satisfactory. He describes in detail a case in which it was adopted, with the following advantages: 1. Being vaginal, it minimizes the amount of peritoneal contamination. 2. As reposition is accomplished by incision, there is not the bruising and perforation of the friable uterine wall which has so often accompanied attempted reposition by dilatation of the constriction ring. 3. Division of the anterior uterine wall is preferable to that of the posterior wall; the work is more easily and accurately accomplished. When the operation is anterior the bladder may be lifted away, giving a wide space for investigation of the inversion funnel and of the various pelvic structures, and more room for the operative manipulations of incision, reposition, and suturing. If there is a marked backward tendency, effective forward fastening of the uterus may be carried out through the anterior incision. A suture line on the posterior surface of the uterine wall extending to the fundus is more likely to form troublesome adhesions.

Spinal Transplant.—H. B. Thomas pleads for fair judgment, favorable or unfavorable, of the bone transplant of Albee for tuberculous spondylitis. He cites ten cases in which no attempt was made to choose good risks; operation was performed in each. He states the following conclusions: 1. The operation is not severe. It is double, the incision is longer than in most; yet recovery from the immediate effect is quick and suffering is not great. 2. Cases with discharging sinuses near the field of operation should not be refused unless the sinus lies within the field of incision. 3. Pulmonary tuberculosis is not a contraindication in all cases. 4. If the ends of the transplant are loose, they absorb; if they extend beyond the spinous process, the portion not attached will absorb back to the firm attachment. 5. Loose ends and broken ends, as in the middle of a bone graft, grow through fixation by position and rest. 6. Three cases with Pott's paraplegia have not markedly improved. The longest time since operation in a paraplegic case has been six months, during which time the position has been good, and such as to give hyperextension. 7. Young patients do better than adults. 8. The operation has a distinct place in the treatment of selected cases of tuberculous spondylitis. 9. Albee's method is preferable in most cases, on account of the site of the disease and the size of the cyphosis. 10. Operation should be followed by months of perfect quiet for the transplant.

Practical Application of the Röntgen Method to Gastric and Duodenal Diagnosis.—A. W. George and I. Gerber sum up their studies on this subject by stating that the Röntgen examination of chronic gastrointestinal diseases affords positive diagnostic evidence unobtainable by any other means. We can usually separate chronic cases into medical and surgical. The authors emphasize the point, that this method is merely one kind of physical examination and by no means an independent method. Thorough physical and laboratory examination should always precede the Röntgen examination.

Paratyphoid Fever; Report, Including post Mortem Examination, of a Fatal Case of the "A" Type.—L. D. Bristol, from a study of this case, and of the literature believes the following conclusions permissible: 1. Paratyphoid is considered rare and usually not fatal. These ideas might change with closer scrutiny of "clinical typhoid" without positive Widal tests and blood cultures. 2. The spleen is not necessarily enlarged or involved in paratyphoid of the "A" type. 3. In the laboratories serum should be tested for paratyphoid agglutinins, both A and B, after it has been negative three times, so far as the true typhoid Widal test is concerned. 4. Blood studies and cultures should be more accurately made in all cases which resemble typhoid. 5. Antiparatyphoid vaccines should be tried as a means of prevention; such vaccines should be

used either alone or in combination with typhoid vaccine.

MEDICAL RECORD.

April 4, 1914.

A Method of Plicating Voluminous Cecums.—J. A. Blake and J. N. Worcester state that patients have been operated upon without any deleterious effects and apparently with sufficient benefit to warrant the procedure. The condition for which it was devised is well defined; the major symptom is pain in the right lower quadrant, occurring in ill defined attacks and associated with gas. As a rule there is constipation, and, in many cases, general evidences of intestinal autointoxication. There may be a more or less well developed colitis. Upon examination one finds evidences of distention of the cecum, marked by tympany and splashing, and usually the balloonlike cecum may be felt, or even seen. Radiography, with the aid of bismuth, shows the cecum large in diameter and length, and often hanging or lying in the true pelvis; it fails to empty itself in the normal period. Upon operation the cecum is found to have a more or less free mesentery and to be more than usually movable; hence the term cæcum mobile, which is generally used to describe the condition. It is Blake's conviction, however, that it is not the mobility of the cecum, but rather its lack of tone and its dilatation which are the causes of the symptoms.

Nonoperative Treatment of Benign and Malignant Growths, as Seen at the Clinics Abroad.—S. Stern speaks first of the benign growths in his account of what he recently saw at the most important clinics he visited in Europe. The chief of these are the uterine fibroids. About three years ago Krönig and Gauss, of the Freiburg school, devised a new technic, the principal features of which are: 1. Dividing up the abdominal, dorsal, and gluteal regions into a large number of small fields. 2. Crossfire administration of Röntgen rays through these fields, enabling one to direct very large doses of the rays to the uterus and ovaries without any danger of dermatitis. 3. The use of rays of certain degrees of penetration. 4. Filtration of all rays through three mm. aluminum. 5. Massive doses. With the improved technic they have succeeded in curing 100 per cent. of their cases—treating all kinds except pedunculated fibroids partly showing through the cervix, cases in which gangrenous degeneration is suspected, fibroids accompanied with carcinoma or those which have undergone sarcomatous degeneration, fibroids which led to acute incarceration of the bladder. The Freiburg technic, *in toto* or with some slight modification, has been almost universally adopted in the gynecological clinics. As to nonoperative treatment of malignant growths, the author summarizes his observations as follows: 1. The extreme enthusiasm displayed at the Congress at Halle was entirely "too previous." Unquestionably remarkable results are accomplished with radioactive substances in the treatment of cancer, but the matter is entirely in the experimental stage. 2. Even in the short time since the congress, optimism has cooled off considerably, and men who made positive statements then are becoming much more guarded. 3. The question of proper dose, filters, and other technic is a very complicated one, which only years of work will solve. 4. Treatment with radioactive substances has shown sufficient results to justify the surgeon in discontinuing operations in cases of surface cancer and cancer of mucous membranes easily reached, in patients who can be kept under long continued observation; but in no other cases. Operation, followed by prophylactic raying carried out systematically for years, is still the best method. 5. There is practically no noticeable difference between the action of mesothorium and that of radium, except that the former may possess a deeper penetration.

Autoserum Injections in Certain Obstinate Dermatoses.—W. S. Gottheil and D. L. Satenstein report twelve cases in which this method was employed, six of very extensive general psoriasis, three of generalized eczema, two of pemphigus, and one of leprosy. Benefit was most noticeable in psoriasis, in which serum had a marked influence on the reactivity and susceptibility of the skin. In eczema the results were less decisive, though great improvement was noted. In the two cases of pemphigus there were no results. In the case of leprosy benefit was unmistakable and quite rapid, though there is no reason to hope that the treatment will do more than improve the symptoms and promote the patient's general condition. The authors state that in some very obstinate and serious dermatoses, serum treatment is deserving of further careful trial and experimentation.

ANNALS OF SURGERY.

February, 1914.

Bismuth Paste.—Emil G. Beck states that the prevention of bismuth poisoning consists of not allowing large quantities of the paste to remain in the body for absorption. Should the symptoms appear, the paste must be removed by washing out the cavity with warm olive oil. Sterile oil is injected and retained for twelve to twenty-four hours, in order to produce an emulsion, which should be withdrawn by means of suction. After its removal all symptoms will promptly disappear. Scraping out the paste with a scoop is a dangerous procedure, for it opens fresh channels for absorption. In discussing causes of failure in the use of bismuth paste as a therapeutic agent, the writer believes that in these cases the focus of the disease was not reached. The first injection should produce the desired result. If it does not, the paste has not found its way into all portions of the diseased tract, and must be tried again. It is a safe rule to wait at least one week. If the discharge changes its character from purulent to serous, and the microscopic examination of a slide and culture shows that the secretion is sterile, the sinus should not be reinjected for it will heal in a short period. If, however, the discharge continues to be purulent, and microorganisms are demonstrable, the sinus should be reinjected at least twice a week. If there is no change within a reasonable length of time, other causes of failure should be sought.

Shockless Suprapubic Prostatectomy.—W. E. Lower describes the technic as follows: An hour before operation, the patient is given a hypodermic injection of morphine and scopolamine. Immedi-

ately before operation, the bladder is irrigated, and 60 to 90 c. c. of a five per cent. solution of alypin is injected through a catheter, the catheter is clamped, and both catheter and solution are allowed to remain. Nitrous oxide-oxygen is administered by an expert anesthetist. The bladder is approached in the usual way, except that the skin incision and every division of tissue is preceded by a thorough infiltration with novocaine in one to 400 solution. The bladder mucosa on the projecting prostate is infiltrated with novocaine, and along the edge of the capsule a deep infiltration is made. With gentle and careful manipulations the prostate is enucleated with the finger. Narrow strips of gauze are packed along the sides of the catheter on top of the mucous membrane so that the raw surfaces of the capsule are brought in apposition, a procedure which effectively prevents hemorrhage. The two ends of the urethra are thus brought together so that a continuous funnel shaped mucous membrane is produced—a most important factor.

JOURNAL OF MEDICAL RESEARCH.

March, 1914.

Degeneration of the Islands of Langerhans Associated with Experimental Diabetes in the Cat.—According to Homans it is justifiable to assume that diabetes, even if its underlying cause is not disease of the pancreas, is at least closely related to changes in that organ. As to the epithelial elements, acinous tissue or islands of Langerhans, associated with failure properly to utilize dextrose, there is a controversy. The animals used in the experiments were cats, portions of the pancreas being removed. The author concludes that the islands of Langerhans must be concerned deeply with experimental pancreatic diabetes. Removal of more than three quarters of the pancreas of the cat, leaving the main duct *in situ*, usually leads to a disappearance of secretory granules in the islands of Langerhans, with suggestive evidence of overactivity, without the production of diabetes. This same procedure, however, occasionally causes a degeneration of the islands accompanied by fatal diabetes without disturbance of the remaining acinous tissue. Two of the cats became severely diabetic and remained so on a meat diet.

A Study of the Market Butter of Boston.—Rosenau, Frost, and Bryant give an interesting report concerning twenty-five samples of butter studied by them. The various methods employed are given and then a summary and conclusions. The average number of bacteria present in one grain of butter was five million seven hundred thousand. The number diminishes with age, from 85.8 per cent. at the end of two weeks to 95.6 per cent. in six weeks. Consequently, the number of bacteria may be an index of the age of butter. Bacillus coli was found in only six of the twenty-five samples and then only in small numbers. Streptococci were found in fourteen of the twenty-five. Although Bacillus Welchii (aerogenes capsulatus) is frequently found in milk, it was not present in any of the samples of butter. Tubercle bacilli were demonstrated in two of twenty-one samples examined for this organism, a percentage of nine and one half of the samples examined, which corresponds with the percentage in milk samples similarly infected. On account of the frequency with which butter may contain tubercle bacilli, and other pathogenic bacteria, the authors recommend the pasteurization of cream intended for butter.

OPHTHALMIC RECORD.

February, 1914.

Salvarsan and Neosalvarsan in Syphilis, with Especial Reference to Diseases of the Eye.—Alexander A. Uhle and William H. Mackinney report the results in fifty cases of syphilitic disease of the eye and its appendages, including one chancre of the eyelid, ten cases of interstitial keratitis, twenty of uveitis, seven of muscle paralysis, four of optic neuritis, and seven of optic atrophy. The Wassermann reaction was positive in forty-five cases at the time of treatment, negative in three, and not recorded in two. The results were good, but mercury and potassium iodide were used so extensively with salvarsan and neosalvarsan that no special credit can be given to the one or the other, but the writers think that effects were more prompt than they would have been with mercury alone.

PEDIATRICS.

March, 1914.

Heart Massage as an Aid to Resuscitation of Stillborn Infants.—Robert E. La Rue thus describes his procedure, which is one that he has not been able to find in available medical literature: "The procedure is best carried out with the infant lying upon its back in a wide basin filled with sufficient water at a temperature of 110° to 120° F., to completely cover the body, the head supported so that no water can enter the mouth or nose. Using both hands, grasp the body of the infant in such a manner that the thumbs rest upon the anterior surface of the chest, the fingers extending across the back, as in the Schultze method of artificial respiration. The thumb of the left hand should cover the third intercostal space almost against the left border of the sternum, while the right thumb is placed over the fourth intercostal space directly in the mammary line. Now make deep pressure, first with the right thumb, which forces the blood out of both ventricles; from the right ventricle through the pulmonary artery to the lungs, and from the left ventricle through the aorta to the arteries of the body; then with the left thumb, causing both auricles to contract and forcing their blood into the ventricles. This alternate pressure should be made at the rate of one hundred a minute, until the heart is distinctly felt to beat of its own accord; then it is safe to start artificial respiration efforts. Of course, the efforts would be in vain if the infant had been dead too long, or if, after starting the heart, normal respiration could not be established." He reports a case in which this method was employed.

Letters to the Editors.

THE FRIEDMANN SERUM AND THE SOCIETY OF GERMAN SANATORIUM PHYSICIANS.

New York, *April 7, 1914.*

To the Editors:

A sensational notice appeared at the beginning of last month in some of the leading New York American and German-American newspapers, in which it was stated that on the occasion of the annual meeting of the Association of German Sanatorium Physicians on February 28th, 120

of these physicians had carefully investigated the results of Friedmann's work. It was reported that 40,000 cases had been treated with Friedmann's serum and that the successes had been simply phenomenal. It was furthermore stated that Dr. Friedrich Franz Friedmann had been the guest of honor at a banquet given by the sanatorium physicians and that he had been effusively thanked by Privy-Councillor Professor Dr. Pannwitz for his work, in the name of the sanatorium physicians present. Finally, it was said in the newspaper report that Doctor Friedmann had made the statement to an American press representative that Professor Ehrlich had expressed the opinion that the Friedmann serum was absolutely harmless.

In a communication received by the undersigned, bearing the signatures of the president, Dr. O. Pischinger, the vice-president, Dr. J. Ritter, and the secretary, Doctor Schellenberg, of the Association of Sanatorium Physicians of Germany, Austria, and Switzerland, he was requested to enlighten the American medical profession concerning the incident connected with their visit to the Friedmann institute in Berlin, and to give the facts the widest possible publicity at least among medical men.

First of all, the officers of the association expressed their astonishment that the visit of the sanatorium physicians to the Friedmann institute should have been used as a means of advertising Friedmann and his remedy abroad. Because of the reports of cures which constantly crept into the German medical and lay press and the demands for the remedy from many sanatorium patients, it was natural that the sanatorium physicians while visiting Berlin should wish to see for themselves what was going on in the Friedmann institute. Thus they asked Friedmann to show them his cases and give them a talk on the indications for his remedy. About sixty of the 125 members of the association visited the Friedmann institute, February 26 and 27, 1914. They distinctly stated that their visit was in no way to be considered a pilgrimage to pay homage to Friedmann for his discovery, but rather an investigation to find out just how much truth there was in his claims. Many had already tried the remedy and had been disappointed, others were prejudiced, and it is for this reason that they wanted to examine critically into Friedmann's claims. It is absolutely untrue that a banquet was given to Doctor Friedmann. After the conclusion of the visit there was a confidential conference, without Doctor Friedmann, at which the members concluded to discuss the theme again next fall and in the meantime collect as much material as possible.

That the undersigned may not be accused of prejudice or misinterpretation, I wish to quote in German the most essential statements which were made as the result of the visit of the association to the Friedmann institute:

"Wir waren uns darüber einig, dass die uns von Friedmann gezeigten Fälle klinisch recht schlecht beobachtet waren und im Allgemeinen keineswegs als 'Erfolge' angesehen werden konnten. Wir haben uns gewundert, dass uns keine ordnungsmässig geführte Kurve gezeigt wurde. Die Roentgenplatten, die man uns zum Beweis zeigte, bewiesen tatsächlich garnichts. Wir geben zu, dass einzelne Fälle allerdings einen gewissen Eindruck auf uns gemacht haben, *wobei wir uns aber auch darüber klar waren, dass solche Fälle auch ohne jede Behandlung und bei jeder Behandlung vorkommen können*, und dass die Zahl dieser Fälle verhältnissmässig *viel* zu klein war, um ein günstiges Urteil über das Mittel abgeben zu können." (We were of the unanimous opinion that the cases shown by Friedmann had been clinically very badly observed, and as a whole could not be considered as successes or cures. We were astonished that no carefully recorded temperature and weight curves were shown. The x ray plates which were shown to us as evidence of cures did not actually prove anything whatsoever. We will admit that some cases indeed made an impression upon us, *but here we must also remember that such cases occur without any treatment or with any kind of treatment*, and that the number of them were *altogether* too few to permit a favorable judgment of the value of the remedy.)

I have since received a letter from Geheimrat Professor Dr. Pannwitz, in which he substantiates what has been said in the official communication from Doctor Pischinger, Doctor Ritter, and Doctor Schellenberg. He particularly expresses his indignation at the use of his name in connection with a banquet which never took place. He declared the whole thing to be a newspaper invention.

Professor Dr. L. Brauer, director of the Eppendorfer Krankenhaus, of Hamburg, who had also heard the American version of the sanatorium physicians' visit to the Friedmann institute in Berlin, wrote me a letter full of indignation and said at the same time that "he had tried Friedmann's remedy at the Eppendorfer Krankenhaus and the results had been unfavorable." He has reported these unfavorable results recently at the Balneological Congress and the Hamburger Aerzte Verein, and intends to publish more on the subject at an early date. He has since sent me the advance sheets of his forthcoming communication regarding Friedmann wherein he says: "The pulmonary cases tested in the Eppendorfer and Salemburg hospitals with Friedmann's method did not improve, but some of them without a shadow of doubt were rendered worse by the treatment. Five cases of bone and joint tuberculosis in children treated with the Friedmann serum by Doctor Trepler in the Salemburg institution were not influenced at all by the treatment and in one case, although the movement of the afflicted joint increased, the general condition of the lesions was rendered worse."

In paying a gratifying tribute to the earnest and unbiased work done with Friedmann's serum by American investigators, which likewise gave unfavorable results, Professor Brauer advised me, in the interest of the German medical profession, and especially in the interest of the unfortunate patients who naturally are inclined to accept such advertised endorsement as genuine, that it would be most desirable for the present status of the Friedmann remedy in Germany to be made clear to the American medical profession and the laity.

I am sure our German colleagues in general, and particularly the German sanatorium physicians, Professor Pannwitz and Professor Brauer, will be greatly indebted to you, if you will give the foregoing space in your esteemed JOURNAL and thus make clear the real status of Friedmann's remedy in Germany.

S. A. KNOPF, M. D.

BALLENGER AND ELDER'S *GENITOURINARY DISEASES AND SYPHILIS.*

ATLANTA, GA., *April 1, 1914.*

To the Editors:

Relative to the review of our book, *Genitourinary Diseases and Syphilis*, in your JOURNAL for March 28, 1914, we beg leave to make the following statement: The reviewer asserts that our description of Hagner's operation is categorically wrong. We were not quoting Hagner, as we thought the absence of quotation marks would indicate. We have performed this operation fifty-two times, and the technic described in our book has given excellent results. We did not wish to appropriate Hagner's thunder by calling it the Ballenger and Elder operation, nor did we feel that a slight modification of the technic was out of place if it appeared to us more satisfactory.

In reference to the criticism of the sentence, "Frequent and painful micturition may occur either from a severe inflammation of the pelvis of the kidney, or from an extension of the [tuberculous] process to the bladder," Guiteras says, "The reflex symptoms of this disease (renal tuberculosis) may lead one away from the affected region to look for the cause in other directions, the same as in nephrolithiasis; for there we have also the renovesical reflex by which the symptoms are referred to the bladder instead of the kidney, and also the renorenal reflex in which the symptoms are referred to the healthy or healthier kidney."

A further criticism is the following sentence: "After most cutting operations (for stricture) it is necessary to pass sounds" . . . This is only the first part of the sentence; the complete sentence is "After most cutting operations (for stricture) it is necessary to pass sounds or dilate at intervals in order to maintain the desired calibre, just as the same procedure is necessary in dilating gradually long standing strictures; these intervals may be greatly increased, however, after a proper course of treatment." In spite of the reviewer to the contrary, we still think this view is correct and in accord with both clinical results and the views of the majority of genitourinary surgeons. Guiteras says, "Small anterior strictures in the scrotal and pendulous portions of the canal that cannot be dilated should be operated (on) by internal urethrotomy, which should be followed by dilatations and irrigations of silver nitrate solutions every other day until the patient is cured. Strictures of small calibre in the perineal part of the ure-

thra that are not dilatable, should be operated (on) by external urethrotomy and then treated in the same way as the more anterior strictures."

Still another criticism is the sentence "If 'moments' are ever 'golden' it is the beginning of gonorrhea." It is at this time that the sealing-in, abortive treatment may be employed with remarkable success. The point we wish to emphasize is that success depends upon a very early application method, otherwise failure is sure to follow.

Your reviewer says: "These various statements have different degrees of truth; yet all of them turn the student's mind away from the important point." While this criticism is in part true, it does not seem to us unimportant to inform the student that renal tuberculosis may present misleading bladder symptoms, or that dilatation after urethrotomy is to be advised in order to prevent a contraction of the urethra at the site of incised stricture.

The cut of an abscess pointing to the penoscrotal junction is criticised because it happens not to point in the perineum, as in the majority of instances. Bidigital examination on several occasions proved that this abscess extended from beneath the symphysis pubis. It began as a swelling, just beneath the triangular ligaments, and gradually extended to the penoscrotal region. We should have called attention to the fact that such abscesses more frequently extend into the perineum, though they may point in the rectum or urethra.

Edgar G. Ballenger, M. D., and Omar F. Elder, M. D.

DISTURBING THE PRACTICE OF MEDICINE.

New York, *April 6, 1914.*

To the Editors:

What has recently been described by Judge Cullen as "the greatest mass of legislative nonsense yet collected," the statutes of New York State, is evidently about to be augmented by an amendment to the Medical Practice Act admitting to its privileges a religious sect founded upon a belief in the unreality of disease and a disbelief in the efficacy of medicine. The Medical Practice Act was based originally upon the necessity for a thorough grinding in the essentials of medical science, leaving free, at the time, the question of treatment to the selection of those thus prepared for the practice of medicine.

The legislature of New York State, like most of our legislative bodies, is made up almost entirely of lawyers. Of the members from this city, fifty-three in number, thirty-three belong to this class. Among the remainder are a few undertakers, but no doctors. Such a body may not have been uninfluenced as men of affairs by the knowledge just set forth of the three million dollar estate left by the labors of the founder of this sect, compared to the meagre accumulations of such non "progressive" practitioners as Janeway, Weir Mitchell, Spitzka, and others. Nor can the fact have escaped attention that something like $300,000 of this sum was divided among the lawyers who "assisted" in its distribution. While doctors are thus being "made" by act of legislation, it is to be noted that these creators are carefully conserving the privilege of admission to their own profession, and are opposing the entrance to it of those who, though otherwise competent, may have pursued their studies at night.

The therapeutic nihilism prevalent at the time of the adoption of the Medical Practice Act is now passing away under the brilliant discoveries and accomplishments of the present era of experimental medicine. In time the act will undoubtedly be amended to compel a practical experience in the real field of medical study, the hospital service, in addition to the purely theoretical tests now demanded. While this step may not diminish the ever increasing demand for admission to the practice of medicine by legislative favor, it will at least serve the purpose of showing the absurdity of thus granting this privilege when compared to the demands of the State on the plumbers, barbers, eccentric and other engineers who are also its licensees. Prominent among those appearing as advocates of this amendment before the legislature was the son-in-law of the author of *Frenzied Finance,* himself a long distance adviser in the Frenzied Politics at the same place last year.

It is to be regretted that no advice was forthcoming from the distinguished men serving the State in its health service, none of whom would entrust to the care of these newly made "practitioners" the humblest wards of the State for whose care and safety they are held responsible.

John P. Davin, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Pathogenic Microorganisms. A Textbook of Microbiology for Physicians and Students of Medicine. By Ward J. MacNeal, Ph. D., M. D., Professor of Pathology and Bacteriology in the New York Post-Graduate Medical School and Hospital, New York. (Based upon Williams's Bacteriology.) With 213 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1914. Pp. xxi-462. (Price, $2.25.)

In this revision of Williams's *Manual of Bacteriology,* Doctor MacNeal has very largely rewritten the text and made various alterations that have enhanced its value Although not a voluminous book, it nevertheless covers the ground thoroughly and clearly. In addition to the bacteria, the spirochætæ, protozoa, and sporozoa are discussed briefly but sufficiently. The illustrations are numerous, well selected, and show what they are meant to indicate. There is, however, one important exception. No one under ordinary laboratory conditions ever sees Bacillus tuberculosis, in a smear under a magnification of 2,100. The illustration given does not represent the picture commonly seen. Otherwise the book has much to recommend it.

Operative Surgery. For Students and Practitioners. By John J. McGrath, M. D., Clinical Professor of Surgery, Fordham University; Professor of Operative Surgery, New York Post-Graduate Medical School; Consulting Surgeon to the People's Hospital, etc. Fourth Revised and Enlarged Edition. With 364 Illustrations, Including Full Page Color and Half Tone. Philadelphia: F. A. Davis Company, 1913. Pp. xvi-838. (Price, $6.)

The appearance of the fourth edition of this work attests the popularity which it has enjoyed for the past ten years. This popularity is deserved in many ways. The arrangement is systematic, the description of the various procedures is unusually clear, and much detail belonging to general textbooks of surgery has been omitted. In the selection of individual operations the author has made use of his personal experience and omitted a description of many methods that have not proved of value. One is struck, however, that more attention is given to certain topics than seems justifiable when compared with the meagre description awarded others in which the author is apparently less interested. The chapters devoted to abdominal surgery are very full and the illustrations numerous. Operations on the neck and breast, on the other hand, receive little attention; the details of the various steps are omitted and the illustrations are few. Other instances might be cited. In writing a textbook on this subject for the student and beginner in surgery, no such favoritism should be shown, and each topic should receive the attention that it deserves in order to give the necessary information to the student. The book suggests in some instances the dissecting room rather than the operating room and in this way resembles the older works of Treves, Bryant, and Stimson. The best works on the subject today have transferred their emphasis from typical operations performed on the cadaver, such as ligations in continuity, amputations, and resections, which now belong to the exceptional procedures, and devote more attention to the modern and often atypical methods which have been devised by the surgeons, often on living tissues. The present edition has responded in some degree to this change, but still harbors a good deal that is obsolete.

Surgical Experiences in South Africa, 1899-1900. Being Mainly a Clinical Study of the Nature and Effects of Injuries Produced by Bullets of Small Calibre. By George Henry Makins, C. B., F. R. C. S., Senior Surgeon to St. Thomas's Hospital, London, Vice-president of the Royal College of Surgeons of England, etc. Second Edition. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1913. (American Branch, New York.) Pp. xvi-504. (Price, $3.75.)

The present volume is a reprint of the original, which appeared twelve years ago and represented a personal study

of gunshot injuries in the South African Campaign of 1899 and 1900. The conclusions reached and the methods of procedure are therefore twelve years old and necessarily differ from those of today in many particulars. The recorded observations, however, retain their value and are a distinct addition to the clinical data on this important subject. The chapters on gunshot wounds of the abdomen are particularly interesting to the surgeon in civil life. The differentiation in the prognosis and treatment of the various types is instructive and practical. The volume is well illustrated with x ray plates, diagrams, and photographs. It will be found an interesting work for the general surgeon as well as an important guide for the surgeon in the field.

Interclinical Notes.

A *Dentists' Diary* for 1914, "the book that breathes the new spirit in dentistry," as the publishers poetically remark, is a product of Lehn & Fink, of New York. We think that any dentist would be glad to have a copy, to enable him to keep track of his patients, to note which teeth are affected, to keep a day book, to recall the antidotes to common poisons, and to profit by a large number of well chosen quotations from various authorities in dental science.

* * *

In Dr. James Sands Elliott's *Outlines of Greek and Roman Medicine*, reviewed on page 758 of the JOURNAL, there is an appendix on fees in ancient times. Expressing the author's figures in American currency, we find that Seleucus paid Erasistratus $100,000 for curing his son Antiochus; the Æginetans, about 532 B. C., paid Democedes from the public treasury $1,520 a year; later he was paid by the Athenians $2,030 a year and at Samos he received an annual income of $2,110. Pliny mentions several physicians as making close on $10,000 a year and states that Quintus Stertinius favored the emperor by accepting $20,000 a year when he could have made more in private practice. The surgeon Alcon made nearly half a million by a few years' practice in Gaul. Again according to Pliny, Manlius Cornutus paid his doctor $10,000 for curing him of a skin disease (by grafting, perhaps), and Galen's fee for curing the wife of a consul was about $2,000.

Meetings of Local Medical Societies.

MONDAY, *April 20th.*—New York Academy of Medicine (Section in Ophthalmology); Yorkville Medical Society; Medical Association of the Greater City of New York; Medical Society of the County of Erie; Elmira Clinical Society.

TUESDAY, *April 21st.*—New York Academy of Medicine (Section in Medicine); Tompkins County Medical Society; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Tri-Professional Medical Society of New York; Medical Society of the County of Kings; Binghamton Academy of Medicine; Syracuse Academy of Medicine; Ogdensburgh Medical Association; Oswego Academy of Medicine.

WEDNESDAY, *April 22d.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society (annual); New York Society of Internal Medicine; Schenectady Academy of Medicine.

THURSDAY, *April 23d.*—New York Academy of Medicine (Section in Obstetrics and Gynecology); Ex-Intern Society of Seney Hospital, Brooklyn; Medical Union, Buffalo; Hospital Graduates' Club, New York; New York Physicians' Association.

FRIDAY, *April 24th.*—New York Society of German Physicians; New York Clinical Society; Manhattan Medical Society; Society of Alumni of Sloane Hospital for Women; Brooklyn Society of Internal Medicine; Italian Medical Society of New York; Audubon Medical Society.

SATURDAY, *April 25th.*—New York Medical and Surgical Society; West End Medical Society; Harvard Medical Society; Lenox Medical and Surgical Society.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending April 8, 1914:

Anderson, John F., Surgeon. Directed to proceed to Toronto, Can., for the purpose of attending the annual meeting of the American Association of Pathologists and Bacteriologists to be held in that city, April 9 to 11, 1914; returning to stop in New York, N. Y., for the purpose of attending the annual meeting of the Commission of Milk Standards, April 13, 1914. **Brown,** B. W., Surgeon. Granted one month's leave of absence to date from arrival in San Francisco, Cal. **Bryan,** W. M., Passed Assistant Surgeon. Relieved from duty at the Marine Hospital at Stapleton, N. Y., and directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for duty; then to proceed to Martinburg, W. Va., and report to Surgeon L. L. Lumsden for duty in field investigations of typhoid fever. **Clark,** T., Surgeon. Directed to proceed to the States of West Virginia and Virginia for the purpose of completing investigations on the prevalence of trachoma and other infectious diseases among the mining and mountainous population of those States; also directed to proceed to Huntington, W. Va., for the purpose of addressing the public health meeting to be held in that city, April 3, 1914. **Collins,** G. L., Passed Assistant Surgeon. Granted two days' leave of absence, on account of sickness, March 28 and 30, 1914. **Creel,** R. H., Passed Assistant Surgeon. Directed to proceed immediately to Havana, Cuba, on account of plague infection at that port. **Frost,** W. H., Passed Assistant Surgeon. Granted two days' leave of absence, March 29 and 30, 1914, under paragraph 193, Service Regulations. **Glanville,** W. E., Assistant Surgeon. Relieved from duty at the Hygienic Laboratory, and directed to proceed to San Francisco, Cal., and report to the medical officer in charge of the quarantine station for duty and assignment to quarters. **Guiteras,** G. M., Surgeon. Granted three days' leave of absence, on account of sickness, from March 22, 1914. **Knox,** H. A., Assistant Surgeon. Granted eleven days' leave of absence on account of sickness, from March 17, 1914. **Lanza,** A. J., Passed Assistant Surgeon. Directed, upon request of the Secretary of the Interior, in connection with bureau order of March 18, 1914, to make sanitary investigation of metal mines at Butte, Mont., and Cripple Creek, Col., and vicinity, also of the mining industry in Arizona with special references to "miners' asthma"; after carrying out these orders, directed to proceed by way of Franklin Furnace, N. J., for the purpose of inspecting the sanitation of the mines located there, and Pittsburgh, Pa., to become familiar with the operations of the laboratory maintained by the Bureau of Mines. **Olesen,** Robert, Passed Assistant Surgeon. Directed to proceed to New York, N. Y., for duty under Surgeon J. W. Schereschewsky in connection with investigations of the sanitary conditions of garment workers' trades and the physical status of employees engaged therein. **Ridlon,** J. R., Passed Assistant Surgeon. Directed, in connection with the investigations of pellagra, to assume charge of the Marine Hospital at Savannah, Ga. **Schereschewsky,** J. W., Surgeon. On request of the Joint Board of Sanitary Control of the Garment Trade and Commissioner of Health of New York, directed to proceed to New York, N. Y., and conduct, in cooperation with the above agencies, an investigation into the sanitary condition of the garment workers' trade and the physical status of employees engaged therein. **Simpson,** Friench, Passed Assistant Surgeon. Directed to proceed to New York, N. Y., for duty under Surgeon J. W. Schereschewsky, in connection with investigations of the sanitary conditions of garment work-

ers' trade, and the physical status of employees engaged therein. **Spratt,** R. D., Passed Assistant Surgeon. Upon request of the Secretary of Labor, directed to proceed, at the first convenient opportunity, to Wheeling, W. Va., for the purpose of making a reexamination of the aliens Sada and Barbara Nassif. **Stiles,** C. W., Professor of Zoology. Detailed to attend the meeting of the South Carolina Medical Association at Florence, S. C., April 15 and 16, 1914. **Thometz,** H. M., Assistant Surgeon. Directed to proceed to Seattle, Wash., about April 20, 1914, and report to the commanding officer of the Revenue Cutter *Tahoma* for duty during the summer cruise in Alaskan waters. **Treadway,** W. L., Assistant Surgeon. Granted fifteen days' leave of absence from April 4, 1914. **Voegtlin,** Carl, Professor of Pharmacology. Directed to proceed to Catlett, Va., for the purpose of collecting material and securing data for use in connection with investigations of pellagra. **Warren,** B. S., Surgeon. On request of the State Board of Health of Louisiana, directed to proceed to New Orleans in time to attend a conference on April 20, 1914, of local and State health officers, mayors, and other authorities, relative to public health work, with particular reference to the sanitary inspection and regulation of public buildings and places of public assembly. **Watkins,** J. A., Assistant Surgeon. Relieved from duty in the Hygienic Laboratory, and on request of the Secretary of the Interior, directed to proceed to Pittsburgh, Pa., for the purpose of making investigations of the sanitary conditions of metallurgical plants in the Pittsburgh district, as they affect the health of employees. **Wells,** W. F., Sanitary Chemist. Directed to proceed to Cumberland, Md., and vicinity for the purpose of making chemical and bacteriological analyses of samples of water in connection with investigations of the pollution of the Potomac River. **Williams,** L. S., Surgeon. Granted one days' leave of absence, on account of sickness, from March 26, 1914.

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending April 11, 1914:

Bradley, A. E., Lieutenant Colonel, Medical Corps. Ordered to inspect Fort Jay, Fort Wood, Fort Totten, Fort Wadsworth, Fort Hamilton, and Fort Hancock. **Carswell,** Robert L., Captain, Medical Corps. Relieved from duty at Fort Howard, Md., and will proceed to Fort Oglethorpe, Ga., and report to the commanding officer at the latter post for duty, and by letter to the commanding general Eastern Department, relieving Captain Edwin D. Kilbourne. **Eckels,** L. S., First Lieutenant, Medical Reserve Corps. Leave extended fifteen days. **Ford,** J. H., Major, Medical Corps. Granted four months' leave of absence from April 7th, with permission to apply for two months' extension about May 12th, with permission to go beyond the sea. **Foucar,** Frederick H., First Lieutenant, Medical Reserve Corps. Orders heretofore issued amended so as to direct to proceed to Honolulu, H. T., on transport to sail from San Francisco on or about June 5th instead of May 5, 1914. **Gorgas,** William C., Brigadier General, Medical Corps. Having been appointed surgeon general, and having reported to the Secretary of War, is relieved from further duty in connection with the Panama Canal, and will assume the duties of surgeon general of the army. **Hess,** L. T., Major, Medical Corps. On April 7th granted five days' leave of absence on completion of duty as directed by paragraph 5, Special Order No. 9, Headquarters Eastern Department. **Kilbourne,** Edwin D., Captain, Medical Corps. Granted three days' leave of absence, effective on his relief from duty at Fort Oglethorpe, Ga., by Captain Robert I. Carswell; resignation accepted, effective on the expiration of the leave of absence granted him in orders from the War Department of this date. **McEnery,** Douglas W., First Lieutenant, Medical Reserve Corps. Granted leave of absence for two months, effective on or about April 30, 1914. **Noble,** Robert E., Major, Medical Corps. Relieved from duty with the Governor of the Panama Canal, effective on or about April 20, 1914, and will proceed to the United States, and report on arrival by telegraph to the Adjutant General of the army for further orders. **Persons,** Elbert E., Major, Medical Corps. Designated as the medical officer to accompany the army war college personnel during its history and staff rides to begin May 1 and to end about June 17, 1914, and will report in person at the proper time to the president of the war college for duty accordingly. **Southwick,** H. H., First Lieutenant, Medical Reserve Corps. Joined Fort Sheridan, Illinois, April 6, 1914. **Weed,** M. D., Captain, Medical Corps. Joined Fort Ethan Allan, Vermont, April 7, 1914.

The following named officers of the Medical Reserve Corps have been relieved from duty in the Philippine Department, effective on or about August 15, 1914, will proceed to the United States, and upon arrival will report by telegraph to the Adjutant General of the army for further orders: Cook, George W., Captain; Beery, Harry R., Captain; Davis, Arthur O., Captain; Harris, Herbert I., First Lieutenant; Bradley, John R., First Lieutenant.

Births, Marriages, and Deaths.

Married.

Filbert—Loewen.—In Tamaqua, Pa., on Thursday, April 16th, Dr. Edward S. Filbert, of Pottsville, Pa., and Miss Hester Loewen. **Gilman—Laflin.**—In Philadelphia, Pa., on Thursday, April 2nd, Dr. Roland H. Gilman and Mrs. Mabel Laflin. **Green—Bennett.**—In Clifton, Ga., on Wednesday, April 1st, Dr. W. B. Green, of Macon, Ga., and Miss Gladys Eolyne Bennett. **Mackintosh—Smith.**—In Mission, Cal., on Saturday, March 28th, Dr. William C. Mackintosh, San Francisco, Cal., and Miss Cora Smith. **McConkey—Lindemuth.**—In York, Pa., on Tuesday, March 31st, Dr. Frank Vance McConkey and Miss Grace M. Lindemuth. **White—Shean.**—In Syracuse, N. Y., on Saturday, March 28th, Dr. Orton E. White, of Buffalo, and Miss Gertrude A. Shean. **Wright—Layton.**—In Monroe, La., on Tuesday, March 31st, Dr. Thomas E. Wright and Mrs. Genie Layton.

Died.

Applegate.—In Kosmosdale, Ky., on Wednesday, April 1st, Dr. Abel Brown Applegate, aged sixty-five years. **Baird.**—In Pomona, Cal., on Sunday, March 22nd, Dr. James C. Baird, aged sixty years. **Bartholomew.**—In Gothenberg, Neb., on Monday, March 30th, Dr. W. J. Bartholomew, aged fifty-six years. **Bond.**—In Healdsburg, Cal., on Sunday, March 22nd, Dr. J. M. Bond. **Bryant.**—In New York, on Tuesday, April 7th, Dr. Joseph D. Bryant, aged sixty-nine years. **Cory.**—In Geneva, Ill., on Wednesday, March 25th, Dr. John H. Cory, aged sixty-two years. **Dearing.**—In Lushton, Neb., on Saturday, March 28th, Dr. W. H. Dearing, aged fifty-five years. **Fitzsimmons.**—In Cambridge, Mass., on Saturday, April 4th, Dr. Philip M. Fitzsimmons, aged fifty years. **Gault.**—In Battle Creek, Mich., on Tuesday, March 31st, Dr. S. H. Gault. **Gerald.**—In Warren, N. H., on Sunday, April 5th, Dr. Francis L. Gerald, formerly of Hyde Park, Mass. **Hoyer.**—In Middleport, N. Y., on Friday, April 3rd, Dr. John B. Hoyer. **Kreutzer.**—In Milwaukee, Wis., on Sunday, March 29th, Dr. Charles A. Kreutzer. **Lauer.**—In Brooklyn, N. Y., on Thursday, April 9th, Dr. Charles F. Lauer, aged seventy-four years. **McCleary.**—In Indianola, Ia., on Thursday, April 2nd, Dr. John D. McCleary, aged eighty-four years. **Parker.**—In Port Royal, Pa., on Sunday, March 15th, Dr. N. Glenn Parker, formerly of Onawa, Iowa. **Slough.**—In Allentown, Pa., on Friday, April 3rd, Dr. Frank J. Slough, aged seventy-two years. **Sweet.**—In Bradford, Pa., on Wednesday, April 1st, Dr. Kay A. Sweet, of Brewsburg, N. Y., aged sixty-one years. **Wilson.**—In Jenkintown, Pa., on Tuesday, April 7th, Dr. Francis S. Wilson, aged seventy-two years. **Winston.**—In Knightstown, Ind., on Wednesday, April 1st, Dr. Oscar L. V. Winston, aged sixty-nine years. **Woodruff.**—In Columbus, Ohio, on Thursday, April 2nd, Dr. Lafayette Woodruff, aged eighty-four years. **Wurtz.**—In Philadelphia, Pa., on Thursday, April 2nd, Dr. John B. Wurtz, aged sixty years.

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Original Communications.

THE PROPHYLAXIS OF MEASLES.

BY JOHN RUHRÄH, M. D.,

Baltimore,

Professor of Diseases of Children, College of Physicians and Surgeons.

Of all the common diseases of childhood, measles is perhaps the most neglected when it comes to the standpoint of treatment, and this is one reason that the mortality in this disease is as high as almost any of the diseases of early life. In the United States, measles causes over 12,000 deaths a year, and there are undoubtedly many more fatalities which are recorded under the heading of pneumonia or some of the other complications. It should be remembered that the registration area of the United States does not cover much more than half of the entire population. Of measles Sydenham said, "they do more to fill Charon's boat than the smallpox itself." There are considerable variations in the mortality from measles and this varies with epidemics, most of which are peculiarly fatal, and in looking over statistics one finds that the death rate per 1,000 inhabitants ranges from 3.8 to twenty-seven. If one considers the disease at a little closer range, one will find that in private practice among the better classes of people it is not a very dangerous disease in children over two years of age, but that in the poor, especially in overcrowded institutions for infants and children, it is an exceedingly fatal malady. In hospitals for children the mortality may run as high as forty to forty-five per cent., and at times even these figures are exceeded. Age is a very important factor and we find that there are but few deaths in very young children; that is, in infants under six months of age. This is due to the fact that at this age measles is comparatively rare, but from six months to two years of age, the deaths increase along with the increasing number of cases, and after two years, the incidence and the deaths decline until about the fifth year, after which deaths from measles are comparatively infrequent, although fatalities may occur from complications or sequelæ. If one makes a study of the cases and deaths as regards season, it is noted that in cold, wintry weather more children succumb than in the summer; this is due to the fact that in winter the fresh air is carefully excluded and overcrowding is liable to take place. We also find that children living in the city are more liable to die than those in the country, partly on account of the lowered resistance, and partly on account of the overcrowding and lack of fresh air. A child is more liable to die if it is in poor health at the time that measles affects it than if it is strong and robust. Occasionally measles kills from the intensity of its toxin, and these deaths occur early, but as a rule the death is caused by a complication usually, either of the respiratory or gastrointestinal tract, although sometimes lesions in other organs may be responsible.

There are several lessons to be learned in considering the foregoing facts, not new lessons it is true, but unheeded ones. The first concerns the prevention of measles. Measles is so easily spread, and as almost every child sooner or later has the disease, many parents, and in fact many physicians, pay little or no attention to its prevention. Much can be done to prevent the spread of measles, also to prevent fatalities. One of the greatest factors in lessening the mortality is to prevent children under five years of age from contracting it. In place of trying to shield young children, one often sees them purposely exposed to the disease in order that they may get it and get it over with. Many parents have a feeling that if a child eventually is going to get measles, it might as well be allowed to get it early as well as late, but I have already pointed out the greater mortality of early childhood, which is an all powerful incentive to prevent infection in the very young.

The prevention of the disease is perhaps not as difficult as we imagine. If a child is isolated promptly in what is real isolation, measles is not particularly liable to jump its boundary. The fault usually is that the isolation is not carried out in a satisfactory manner. In some of the newer hospitals where infectious diseases are treated, it has been found that measles may be isolated in box compartments, in which the partitions do not reach the ceiling in the room, but in which a strict medical asepsis is carried out by conscientious nurses and physicians. With our shocking disregard of the so called "minor" diseases in this country, and with little or no municipal provision for their care in properly constructed hospitals, the problem becomes one for the individual physician and the individual family. One reason for failure up to the present time is the fact that measles cannot be properly isolated in apartments, especially where there is any overcrowding; but while this is true as regards any individual family, much can be done by keeping out children of other families, and adults as well, on the principle that the fewer persons that come in contact with a contagious disease, the fewer are liable to contract it.

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The second point in the prophylaxis of measles is the closing of schools in the face of threatened epidemics. This protects the young child indirectly in that it lessens the danger of the older children in the family becoming infected and so bringing the disease back to the home to start a new focus of infection. Raffle has made a study of this question, and the effect of closing the schools and his figures are of such interest that I reproduce here the short review of his article in the *Lancet* for February 3, 1912, that I made for *Progressive Medicine* for March, 1913.

In this epidemic 4,470 children were exposed to infection; of these 2,180 were susceptible to the disease; of these 853 were infected, 638 cases occurring during the time that the children were at school, and 140 during the period of fourteen days after which the school was closed, that is, 778 cases which might have been infected either at school or in home life. Thus, at the time the schools were closed, there were still more than 1,400 children who were susceptible to measles, but only 75 of these children actually contracted the disease. These figures show quite conclusively the enormous value of closing the schools in combating epidemics of measles.

TABLE SHOWING THE INFLUENCE OF SCHOOL CLOSURE IN AN EPIDEMIC OF MEASLES.

Name of school.	Extent of closure	Average attendance	Number of susceptible children.	Number of cases before closure	Number of cases within 14 days	Number of cases more than 14 days after.
Westoe	All	480	240	77	27	17
Ocean Road	All	380	190	51	16	7
St. Hilda's	All	170	80	19	1	2
St. Stephen's	All	175	80	18	0	5
Gilbert Street	All	400	200	71	28	20
Barnes	All	440	210	37	8	0
Baring Street	All	450	220	49	16	1
Mortimer Road	All	520	250	76	18	3
W. Harton	All	200	100	28	6	1
Cone Street	All	310	150	22	1	8
H. Trinity	All	345	170	51	10	6
Laygate Lane classes 5, 7, and 8		150	70	21	0	2
St. Bede's classes 6 and 7		100	40	28	1	2
Stanhope Road class N2		50	20	22	0	0
Mowbray classes 7, 8, 9, 9A, and 10		300	160	48	8	1
Total		4,470	2,180	618	140	75

The question naturally arises, what is necessary to prevent the spread of measles? The answer is, to prevent susceptible individuals—practically everybody is susceptible who has not had the disease—from coming in contact with individuals who have the disease or with objects that have recently come in contact with such an individual. Measles is transmissible from the beginning of the catarrhal symptoms, and there is great difficulty in the practical prevention, as the disease is usually not recognized until the eruption appears. Consequently in many instances the infection takes place before any attempt at isolation is made, and the date on which measles develops in the other members of the household or institution proves this. It is manifestly impossible to isolate every child who has a coryza and a sore throat, but it is not at all impossible to keep such children out of school, particularly if fever accompanies the catarrhal symptoms. To be effective, the isolation must be such that susceptible children do not get into immediate contact with, or in the neighborhood of the sick child; such isolation is difficult to provide in the average home as regards the other members of the family, but not for those living out of the house. This is very easy to secure in an ordinarily well run hospital. In schools, particularly boarding schools and institutions for children, much will be accomplished by prompt isolation of all sick children until the diagnosis is made; many institutions are now providing rooms or wards for the isolation of suspects, finding it much cheaper than to cope with the disease after it develops.

In this country we are very far behind the times in the matter of providing hospital facilities for the so called minor infectious diseases, upon which millions of dollars each year are spent in care rather than in prevention. In overcrowded tenements and houses, the only efficient isolation that can be obtained is by the prompt removal to a special hospital. Boston is perhaps provided for in this respect better than any city in the United States, yet it has provision for only sixty cases of measles, if I am correctly informed. The most modern hospitals for infectious diseases are built so that they may be used for more than one disease, especially in case of need, and some idea as to how far behind some of the other cities are may be obtained from comparing what is done in Glasgow, Edinburgh, and London, where there is accommodation for acute infectious diseases for one in every 10,000 of the population. In Boston there are accommodations for only three out of every 10,000, and in most American cities the beds available for infectious diseases under ordinary conditions practically do not exist.

In order to be of any service, the isolation should be started early, and in order to do this it is necessary to make at least a tentative diagnosis. The problem of diagnosis will depend on whether the child is under the supervision of a physician or not. In schools and in institutions for children in which there is anything like adequate medical inspection, the early cases of measles may usually be determined by a number of diagnostic methods, if not with certainty, at least with sufficient accuracy to isolate the child pending further developments. If measles is in an institution already, or if there is much just outside of it, and there is reason to believe that infection may occur, the children may be examined with reference to several signs, the first of which is loss of weight. This begins as early as the fifth or sixth day before the appearance of the catarrhal symptoms, and generally amounts to about ten ounces for children up to four years of age, and in some the loss may amount to as much as three ounces a day. This loss is independent of age or the severity of the attack. It is very easy to weigh a large number of children, one after the other, and have their weights recorded and compared with the weight on the previous day. It should be remembered, however, that to be of any value, the weights must be taken at the same time of the day and under the same conditions as regards clothing, meals, and drinking water, and the emptying of the bladder and the bowels. If strict attention is not paid to these points, the weighing will not be of much value.

If there is loss of weight or any other reason to

suspect that the child is getting measles, an examination of the blood may be made; it will be found that during the incubation period there is a leucocytosis. It should be borne in mind, however, that this leucocytosis lasts only into the first day or two of the stage of invasion, when the leucocyte count falls to normal or even below. When the stage of invasion is reached, the disease may be suspected if there is fever, especially if accompanied by catarrhal symptoms affecting all or almost all of the mucous membranes. Conjunctivitis, coryza, pharyngitis, and bronchitis are usually all very apparent. In addition, there is almost invariably marked drowsiness. Heim, many years ago, called attention to the odor of measles, which has often been described as like that of a mouse trap, and while there is undoubtedly a more or less characteristic odor about measles patients, this mouse trap odor is usually due to lack of care and cleanliness rather than anything characteristic of the disease.

Two other signs are of value; one, the cyanosis of the tongue which is seen a day or two before the eruption appears, and the other, of the greatest possible value, is Koplik's spots. These spots sometimes may be seen as early as four days before the appearance of the eruption, and usually two days or one day before it appears. If one is familiar with the appearance of Koplik's spots, the diagnosis can be made with absolute certainty. This has been questioned of recent years, but I have never seen an instance in which the spots were present in which measles did not develop. If the child is not under medical supervision, but is attending school, the problem of isolation will rest with the teacher or with the family. The school teacher should be instructed as to the beginning signs of the various contagious diseases, and all children with catarrhal symptoms should have the temperature taken, and if there is fever, should promptly be sent home. In the home the combination of catarrhal symptoms and fever should lead to such isolation as will at least prevent outside children from coming in contact with the child until the diagnosis is made with certainty, but it will be a long time before the laity will take such an interest in the prevention of the infectious diseases as to put this simple method into practice.

The most hopeful thing about the prevention of disease is the remarkable progress that has been made in the past two years by public health instruction in regard to the nature and prevention of infectious diseases. With the diseases of childhood one lesson should be taught, if nothing else, and that is that the fewer people who come in contact with a sick child, the fewer will contract the disease, and this applies not only to measles, but to almost all of the infectious diseases. There is less of the mother sending for the neighbor's child to come in to entertain the child who is ill than there used to be, but there is still far too much carelessness in this regard. I have been greatly impressed in recent years with the genuine desire of parents to protect their children from infections, particularly where a few words are said on this subject, not necessarily at the time in which there is danger of infection, but on the occasion of any medical visit.

The prophylaxis of measles will be seen to depend on the isolation of cases, particularly in preventing well children from associating with those who are ill until a diagnosis has been made, upon the closing of schools in the face of severe epidemics, and in the hospital treatment of the contagious diseases.

11 East Chase Street.

THE VALUE OF COCAINE IN DISTURBANCES OF METABOLISM.*

By William Henry Porter, M. D.,
New York,
Professor Emeritus, Pathology and General Medicine, Post-Graduate Hospital.

Erythroxylon coca, the plant from which cocaine is derived, is indigenous to South America. Its properties have been known to mankind, in a measure at least, for many centuries. It was first used by the natives of Peru, under the belief that it gave them greater powers of endurance and strength, even in the absence of what we now term ordinary food products. There seems little doubt that it did enable them to accomplish greater tasks than was possible without its aid, but that it has the power to take the place of ordinary food is decidedly questionable. The Incas prized and respected it highly in connection with their religious ceremonial rites. After the conquest of Peru by the Spaniards in the early part of the sixteenth century, knowledge regarding coca and its properties was gradually disseminated throughout the world.

In 1855, Gardeke discovered or isolated from coca an alkaloidal substance, to which he gave the name of erythroxylon. In 1859, Dr. Albert Niemann succeeded in isolating what may be termed the true or most valuable alkaloidal substance, which is now known officially as cocaine, having the formula of $C_{17}H_{21}NO_4$.

Running through the literature upon erythroxylon and its alkaloids, from that time on, we find an abundance of contradictory evidence regarding the action of coca preparations and its alkaloids, especially cocaine. When using preparations made from the crude plant itself, these discrepancies can easily be accounted for, owing to the varying alkaloids contained in coca, some of which are highly toxic, also to possible variations in strength and composition of preparations, for much of this work was done before the era of standardization.

With a chemically pure cocaine, there should not be such wide variations, barring an occasional person who may be unduly susceptible. Unless the cocaine is chemically pure, it may contain some of the two highly toxic alkaloids, isatrophyl cocaine and cinnamyl cocaine, the former of which is a decided heart muscle poison.

The varying results where cocaine alone is used, and the sudden development of toxic symptoms frequently described, may be due to preparations containing these toxic impurities. Personally, I have never seen any one disclose toxic symptoms where cocaine was being used internally. In two cases

*Read before the Medical Association of the Greater City of New York, February 16, 1914.

seen in consultation, in which cocaine was recommended internally, one physician reported that after a few days the pupils of the patient became so dilated that reading was impossible; in the other, decided cardiac depression was reported. In this instance it is quite probable that the preparation may not have been chemically pure, or the patient may have been highly susceptible, for I have never seen any such results.

Although several important papers were published upon the action and uses of cocaine and its toxic properties, during the sixties and seventies, it was not until after Koller called attention to its powerful anesthetic properties, in 1884, that the profession became thoroughly interested in its therapeutic possibilities. From that time on, a very large number of papers have appeared, most of which are devoted to the local or surgical use of cocaine as an anesthetic.

It is not the purpose of this paper, however, to consider the local effects nor the hypodermic administration of cocaine in connection with surgical operations. The main object is to deal exclusively with its effects upon the system, and to show the value of cocaine when administered internally, *per os*, as are internal medicaments in profound disturbances of metabolism of both the acute and the chronic types. We are all familiar with the great value of cocaine used hypodermically or by direct local application, as already mentioned, but, in my humble judgment, its great power for good in connection with the large field of internal medicine is not so fully understood as it should be. This assertion is based upon my personal observation and use of cocaine in hundreds of cases, which have presented all forms and kinds of metabolic disturbances, both acute and chronic.

Before we can discuss to the best advantage the therapeutic value of cocaine in connection with these metabolic disturbances, we must have a clear conception of its influence upon the various functions of the body. Both historic and experimental evidence seems to prove conclusively that cocaine has the power to augment forcefully almost all the physiological activities of the animal economy, not only for a short time, but for a considerable period, so much so that the working power of the system is materially enhanced.

The effect of cocaine when administered internally within its physiologic limits, as all therapeutic agents are supposed to be used when administered scientifically, is to stimulate, first, the cerebral hemispheres, next the medulla, and afterward the spinal cord. It lessens fatigue, and to a certain extent augments both mental and muscular activity. The respirations are increased; the muscular contraction of the heart is slightly quickened; and the force of the muscular contraction is augmented. There is a slight rise in the blood pressure. The augmentation of both the respiratory and the circulatory activity enhances the oxidation reduction processes of the body, which is highly essential in defective metabolism. It tends to quicken intestinal peristalsis; it also alleviates intraabdominal pain, especially the latter, as shown by the investigation of Meltzer and Kast. This naturally tends to improve digestion and the absorption of food products.

Glandular activity in general is slightly augmented, which must naturally follow increased oxidation and circulatory activity. The temperature is slightly raised. All this occurs without any perceptible change or specific symptoms noticeable on the part of the patient; less than occurs with most of the other alkaloids in common use. With such results as these, it is not to be wondered at that the native Peruvians felt that they could endure more, and were stronger for chewing the leaves of the coca plant.

If, however, cocaine is pushed beyond the physiological limit, very nearly opposite effects or toxic symptoms are produced. Death may ensue, but comparatively few cases are traceable to the pure alkaloid alone, so that cocaine, like all other alkaloids and glucosides that have stimulating properties, at first excites physiological activity, but when pushed beyond a certain point depresses or arrests those activities. Some alkaloids seem to excite special functions to the exclusion of others; cocaine, on the other hand, seems to excite all the functions of the body more uniformly than any other known alkaloid, hence its greater value in disturbances of metabolism. This is probably the reason why cocaine causes improvement in all the patient's symptoms when all other measures at our disposal have failed. So long as the dose is kept well within the physiological limit, its administration can be followed by only good results, never by bad ones. Beyond this point, bad effects must follow, as well as with all foods and therapeutic agents when pushed beyond the physiological limit.

Another interesting point in connection with cocaine is the fact that patients who are profoundly affected by it when applied locally, possibly through reflex overstimulation, can take one and two grains internally three times a day with no untoward effects but, on the contrary, with highly beneficial results. This fact was well illustrated in a patient who came many years ago, from Ohio. Some time before seeing me, he had had occasion to have some surgical work done on his nose, which required the anesthetic effect of cocaine. Each time it was used, he was profoundly affected, going into a state of severe collapse, which lasted from half an hour to an hour. When he came to me, it was with a diagnosis of tuberculosis, with the advice that he should go to some warmer climate and enjoy as best he could his few remaining days.

Upon examining him carefully, the real condition proved to be a simple pleurisy with a large serous effusion and a great lowering of all the nutritive processes of the body, certainly a very profound disturbance in metabolism. Withdrawal of the fluid and the usual aftertreatment failed to produce improvement in his general metabolism. The addition to his treatment of half a grain of cocaine, gradually pushed up to two grains, three times a day, was almost immediately followed by perceptible and steady improvement, and in a comparatively short time a permanent cure was the result. In my judgment, without the cocaine this might never have been effected, certainly not so quickly. When told that he had for some time been taking daily six grains of cocaine in divided doses, he exclaimed that the only thing perceptible to him was his steady improvement. Being a man with a strong will, he re-

marked that he must have been a fool to have acted as he did when the cocaine was applied to his nostrils, and requested me to make a similar application, which was done. It could be plainly seen by the expression of his face that he did not intend to perform as before under like conditions; but to his great surprise he suffered the same feeling of semi-collapse and depression. From this and several similar instances, my conclusion is that the local and internal effects of cocaine are entirely different and must be studied separately. There is something entirely different in its peripheral reflex stimulation and its oxidation reduction within the system.

To understand fully what is meant by this oxidation reduction process as applied to therapeutic agents, necessitates, first, a brief study of what happens to the normal food products in their transit through the animal economy. This clearly understood, much of the mystery is eliminated in connection with the action of our therapeutic agents, and they fall easily into a class of food products, but of higher chemical activity than the ordinary foods. It is now well established that all food substances act in one of three or four different lines:

1. All inorganic substances are solvents or mechanical irritants.

2. They act as mechanical irritants, by multiplication or division of the molecules, before they are finally reduced to less complex compounds. This line of action before oxidation reduction is specially applicable to the proteid molecules in the upbuilding and breaking down of the animal structure.

3. They undergo direct oxidation reduction, application to all simple reducible substances, like the starches, sugars, and fats, by which process there is evolved simple caloric force with which to energize all the chemical and physiological activities of the animal economy.

4. They have that peculiar yet well known isomeric change, or a rearrangement of the atoms, so that while there is no change in the number of the atoms, there is a wide difference in the appearance of the molecule, and its actions are radically different.

When we come to analyze the action of cocaine or any of the oxidizable alkaloids or glucosides, we find the same conditions or chemical laws controlling their transit through the body that are applicable to the ordinary food substances. Cocaine and all the alkaloids are capable of being reduced by oxidation to less complex substances—such, for instance, as urea, carbon dioxide, and water $2(C_{17}H_{21}NO_4 + 76\ (O) = 33\ (CO_2) + 17\ (H_2O)$ (See Table.)

While cocaine or any of the alkaloids or glucosides are undergoing this oxidation reduction, there is evolved a certain amount of caloric force, as occurs with all food substances. Primarily, the amount of caloric force or power is in direct proportion to the amount of oxygen consumed. But the law of mechanical irritation and the effects of isomeric transmutation have also to be taken into account in explaining the full action of all substances.

It is quite probable that in these isomeric transmutations we have the explanation for the peculiar train of symptoms and intensive activities that follows from the internal use of the alkaloids, and not in its heat production alone. These transmutations may be in the alkaloid itself or in the proteid bodies with which they come in contact. The exact point, too, at which these transmutations take place, in all probability is an important element in explaining the peculiar actions noted when the animal economy is influenced by their presence. Just when and how these chemical transmutations are brought about, we do not know exactly.

This much we do know, that each alkaloid or glucoside, when introduced into the body, is followed by a train of phenomena peculiar to itself, barring those cases having idiosyncrasies. It should be remembered that the rapidity with which the transmutations are brought about is largely responsible for the severity of action. In some instances the amount of the alkaloid that can be taken is very small—as with aconitine—while with other alkaloids much larger quantities can be given, for instance cocaine, before any perceptible effect is produced, or the physiological limit is past and the toxic stage reached. The comparatively large amount of cocaine that can be taken and the slowness of transmutation may be the reason for its decided uplifting and sustaining power.

To suppose that it can in any sense take the place of the normal food products, is absurd, but all the evidence goes to prove that, in conjuction with a well regulated diet, it greatly assists in the perfect utilization of the food products, and in a wonderful manner. The cocaine stimulates and excites the inactive masses of protoplasm into activity, when all other measures fail. In health, under its influence, one can endure with ease greater mental and mus-

TABLE.

POSSIBLE PRODUCTS OF OXIDATION OF THE CHO, CHN, AND CHNO DRUGS.

Drugs.	Active principles.	Formula + amt. of O used. =	Urea + Carbon dioxide.	+ Water
Alcohol...	Ethylic alcohol	$C_{21}H_{32}O_7 + 51O =$		
Digitalis...	Digitoxin $(C_{17}H_{30}O_7 + 43(O) = 2(CO_2) + 3(H_2O) =$	.....	$21CO_2 +$	$16H_2O$
	Digitalin, glucoside	$C_{32}H_{54}O_{12} + 12O =$	.....	$32CO_2 +$	$27H_2O$
	Digitalin, glucoside	$C_{28}H_{46}O_{15} + 55O =$	.....	$28CO_2 +$	$23H_2O$
	Digitonin, glucoside	$C_{31}H_{52}O_{17} + 71O =$	.....	$31CO_2 +$	$26H_2O$
	Digitin, glucoside	Not formulated			
Convallaria.....	Convallamarin, glucoside	$C_{25}H_{44}O_{11} + 57O =$	.....	$23CO_2 +$	$22H_2O$
	Convallarin, glucoside	$C_{34}H_{62}O_{12} + 88O =$	.....	$34CO_2 +$	$31H_2O$
Strophanthus...	Strophanthin, glucoside	$C_{30}H_{24}O_{11} + 46O =$	.....	$20CO_2 +$	$17H_2O$
	Strophanthidin, glucoside	Not formulated			
	Ineine, alkaloid	Not formulated			
	Strophantine, toxic alkaloid	Not formulated			
Scoparius.....	Scoparin, neutral body	$C_{21}H_{22}O_{16} + 43O =$	.....	$21CO_2 +$	$11H_2O$
	Sparteine, liquid alkaloid	$C_{15}H_{26}N_2 + 40O =$	$CH_4N_2O +$	$13CO_2 +$	$13H_2O$
Ammonium carbonate.	Salt	$2(N_2H_{11}C_2O_5) =$	$3CH_4N_2O +$	$CO_2 +$	$5H_2O$
Coffee.....	Caffeine, alkaloid	$C_8H_{10}N_4O_2H_2O + 13O =$	$2CH_4N_2O +$	$4CO_2 +$	$2H_2O$
Nux vomica.....	Strychnine, alkaloid	$C_{21}H_{22}N_2O_2 + 47O =$	$CH_4N_2O +$	$20CO_2 +$	$9H_2O$
Opium.....	Morphine, alkaloid	$2C_{17}H_{19}NO_3 + 82O =$	$CH_4N_2O +$	$33CO_2 +$	$18H_2O$
Belladonna.....	Atropine, alkaloid	$2C_{17}H_{23}NO_3 + 85O =$	$CH_4N_2O +$	$33CO_2 +$	$21H_2O$
Erythroxylon coca....	Cocaine, alkaloid	$2C_{17}H_{21}NO_4 + 76O =$	$CH_4N_2O +$	$33CO_2 +$	$17H_2O$

cular strain, especially the latter. At the same time, it should not be used in health, for under ordinary circumstances it is not required.

This rule is one that should be applied to all highly stimulating substances when the physiological economy is perfectly normal. Yet it is a well known fact that throughout all the ages, mankind has always sought out, found, and used some more highly stimulating substance than the ordinary food, and probably always will.

In diseased processes and in all profound disturbances of metabolism, in which the normal food products are no longer able to stimulate or excite into full physiological activity the protoplasmic masses of the animal economy, when everything is at a standstill, as it were, or even when it is apparent to all that the patient is steadily losing ground, the addition of a half grain or more of cocaine three times daily, has, in a large number of instances under my observation, during the past twenty-five years, produced almost miraculous changes for the better, and in cases that seemed almost helpless. The secretory products which before its administration gave evidence of profound metabolic disturbance within the system, under its influence changed steadily to those indicative of a more nearly normal state of the system, until the abnormal finally gave way to the perfectly normal. In all chronic affections its power for great good cannot be overestimated.

During the past ten years, I have employed it more and more in the acute diseases. Given early in pneumonia, and throughout the disease, the results obtained have convinced me that the chances for recovery are greater than without its administration. The same may be said of all acute diseases, for if it has this great sustaining power that all the evidence seems to prove it has, the power to resist and eliminate the toxins of disease must be greatly augmented.

Having prescribed cocaine extensively for nearly thirty years, I have yet to see a single person acquire the so called cocaine habit. Only recently an intelligent gentleman, suffering from what was said to be "Bright's disease," when he first consulted me some years ago, said to me: "I do not have any different symptoms perceptible when I am or am not taking the cocaine, but I do know that when taking it I do my work more easily and with less fatigue." I know that when he is taking about one half grain three times daily, he eliminates less albumin and all the excretory products are more nearly normal. Therefore, in my humble judgment, cocaine is a very valuable remedy in connection with internal medicine, and one which has not received the attention it fully deserves.

In closing, I might say that I usually employ it in combination with caffeine and strychnine. Some may say that used in combination with other substances one cannot judge accurately as to the true value of a remedy. If, on the other hand, the statements previously made have been closely followed, we shall remember the emphasis placed on the improvement which followed the use of cocaine when all other known remedies had failed. That, to my mind, is the highest test for any remedy. As the food which constitutes an ordinary meal is composed of many different substances derived from both the animal and the vegetable kingdoms, each and every meal is a highly complex mixture. From a chemical and physiological standpoint, such a meal is usually far from being scientifically compounded. In like manner, in my opinion, the mixing of several alkaloids in one prescription is justifiable, but from a much higher and more scientific plane than is the daily meal. Such prescriptions are often spoken of as "gunshot" prescribing. This, perhaps, is true if the prescriber does not know the exact chemical composition and action of the elements used. It should always be borne in mind, however, that the scientific physician does know the exact chemical composition of the substances used; he also knows exactly what each will accomplish alone, and in combination. Viewed in this light, the prescription, which, on the face of it, seems to be a very complex and mysterious combination, becomes in reality a far more safe and simple meal, for medicinal agents should be considered in the light of foods rather than as mysterious substances acting like magic wands, etc. If we take this interpretation as the true one for a scientifically constructed prescription or meal, it is a far safer one than many of the less scientifically constructed and far more complex meals that we are daily called upon to partake of at the banquet table. If the ordinary daily meal was written out in full prescription form, everything given, and presented as the menu card, many would think twice before undertaking the task set before them Under these conditions, the ordinary meal becomes the shotgun which has brought on many a disease process, while the scientific prescription becomes the rifle which, when accurately and scientifically trained on the enemy disease, enables Nature to remove the etiological factors, destroy and remove the enemy, and thus save the life of the patient.

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46 WEST EIGHTY-THIRD STREET.

PRIVATE CASES OF DIABETES AND GLYCOSURIA TREATED IN 1913.

BY L. NAPOLEON BOSTON, A. M., M. D.,

Philadelphia,

Professor of Physical Diagnosis, Medico-Chirurgical College; Physician, Philadelphia General Hospital; Pathologist, Frankford Hospital.

During the past year American literature has contained many articles devoted to the theory and treatment of glycosuria and diabetes mellitus. Notable among these papers are those that have been published by the NEW YORK MEDICAL JOURNAL. It is not the purpose of this paper to discuss the theory or the character of foods employed in the treatment of diabetes. It is my purpose to place special stress upon the method of ascertaining how much carbohydrate each individual is capable of taking; also the drugs that have been employed in the treatment of the thirty cases to which brief reference is herein made.

During the year 1912, in all forty-two private cases were treated where the urine was found to contain a pathological amount of sugar, but none of these have been included in the present series. The series of private patients who form the foundation for this report, applied for treatment between January 1 and September 15, 1913. With but two exceptions none of these cases had been treated by me prior to January 1, 1913. Two of the patients, however, consulted me in October, 1912, but treatment for diabetes was not begun until January 1, 1913. Of the thirty patients treated, five were between the age of twenty and thirty years; six, between thirty and forty; six, between forty and fifty; eight, between fifty and sixty; and three over sixty years.

Twelve patients with the more severe cases (displaying two per cent. or more of sugar in the urine) showed well marked cutaneous symptoms, while ten with the mild cases (showing under two per cent. of sugar) also complained of cutaneous disturbances, and in many of these itching of the skin was an annoying feature.

Paroxysmal epigastric pain was experienced in twelve of the cases where the sugar exceeded two per cent., and likewise in twelve of the mild cases was a history of paroxysmal epigastric pains. Among the more severe cases the average loss in weight during the past year was eleven pounds. The milder cases gave an average loss of nine pounds each. In three cases there had been a moderate gain; and in three others no appreciable change in weight. Attacks of vertigo were a prominent feature in thirteen of the thirty cases treated. Several of the patients applied for treatment as the result of their attacks of vertigo, and had but few, if any other signs or symptoms referable to diabetes.

Considering the thirty cases collectively, from the standpoint of the percentage of sugar present in the urine, one finds that in thirteen the sugar present did not exceed one per cent. Three gave approximately two per cent.; two, three per cent.; five, four per cent.; and five, five per cent. of glucose. Examinations of the urine from these patients were not made at regular intervals, but in the brief report of each individual case I have recorded the number of weeks or months that treatment was continued before a negative reaction with Fehling's solution was obtained. In all but one of the cases considered, the urine was examined not less than three times during the month. Tests for diacetic acid and for acetone were not made in all the cases, nor were they made at regular intervals in any. I have used as my guides, the general condition of the patient, including the improvement in his annoying symptoms, together with the average percentage of sugar present in the urine, and the quantity of urine voided during the twenty-four hours. This report may seem in a measure incomplete, yet it is as complete as I have found it possible to make it, basing my findings entirely upon records of private patients.

The amount of carbohydrate that a given individual may take during the twenty-four hours is a most important factor in preparing to treat one suffering from glycosuria. In order that we estimate approximately the quantity that each patient should take daily, it is first necessary that he be permitted to eliminate from his system all excess of sugar. It has been found that a most satisfactory way to accomplish this end is (a) withdraw all carbohydrate food possible; (b) encourage the patient to take liberally of liquids, particularly of

[1] These references cover the general field for the last forty years, however hundred more might be added.

water. Through this method of treatment an existing hyperglycemia (above 0.15 per cent.) will usually be overcome within the course of seven to ten days. In all cases where through diet alone it is possible to obtain a negative reaction with Fehling's solution, the first step in the treatment is completed. The second step in this variety of cases is to ascertain how much carbohydrate the patient can take at each of three different meals during the day, and his urine still give a negative reaction for sugar.

In the event of being unable to affect a negative reaction for sugar with the patient's urine, through diet alone, it becomes necessary to use certain drugs. Through the use of such drugs, together with diet, it is commonly possible to accomplish the desired result. At this point, the treatment of diabetes becomes vastly different in practically every individual case. In some, results are obtained through the liberal use of codeine sulphate. In other cases codeine seems to have but limited, if any influence, upon the sugar excreted. Extract of ox gall and pancreatic extract are drugs that often prove most effectual. When using ox gall and pancreatin it is well to direct that they be placed in a pill which is coated with keratin, and has a second coating of salol. The two substances used for the coating of the pill do not under ordinary conditions dissolve in acid solutions, consequently when taken into the stomach they remain intact, and protect the ox gall and pancreatin from being acted upon by the gastric juice. Pills properly coated with salol or keratin become immediately available as soon as they have passed into the alkaline solution in the duodenum.

Until within the past year, I found many cases of diabetes where the urine contained a rather large amount of sugar, and where practically all medical treatment gave but little or no favorable result. During the year, however, I have employed a liquid preparation of the Bulgarian bacillus. This preparation, when placed upon the market, is in small tubes containing one dram each of an active culture of the bacillus. My method of employing this culture has been somewhat different from the ordinary method. One dram of the solution added to four ounces of water was given one and a half hour after each meal. After patients had been taking this lactobacillary solution, it was found that one half the original dose gave equally good results. After a period of six to ten weeks of treatment, most of the patients of this series discontinued the solution.

There will be found selected cases where it is necessary to use one and all of these lines of treatment in order to render the urine free from sugar. The doses of any one or of all drugs herein mentioned will vary greatly in each individual case, as will also the quantity of carbohydrate each patient can take. My experience teaches that it is only the closest attention to this particular point that makes it possible to give relief and cure in the vast majority of all cases displaying glycosuria. True, as is shown by this report of thirty cases, three cases, or ten per cent., showed but little if any improvement as the result of treatment.

In twenty-four of the cases the blood pressure was estimated, but it was found impossible from this small series to draw any deductions as to the value of blood pressure in connection with maladies accompanied by glycosuria.

The quantity of urine voided during the twenty-four hours, while excessive in eighteen of the thirty cases studied, did not appeal to the writer as a factor of great clinical importance. Six of the patients with severe cases voided less than 100 ounces.

Case I. Mr. S., a Russian Jew, had resided in the United States for the past twenty-five years, during which time he had been employed as a life insurance agent. Married and had three children. A rather unusual feature in connection with this case was that for the past sixteen years his wife had been known to have diabetes. She suffered from this condition before her marriage. Eight years ago the patient forming the foundation for this report, was informed that his urine contained a small amount of sugar. During the past vear he had suffered from violent attacks of epigastric pain, which usually developed three or more hours after the taking of food. The so called hunger pain was a conspicuous feature in this patient. He had lost twenty pounds in weight and became readily exhausted upon slight exertion. The skin was rough and dry, and the hair poorly nourished. The liver extended to two inches below the costal margin; systolic blood pressure 130, diastolic 81.

The quantity of urine voided during the twenty-four hours varied between 42 and 60 ounces. The morning urine contained approximately 2 per cent. of sugar, while that voided after a day's work and during the evening hours showed between 2.5 and 3 per cent. After taking treatment for a period of two weeks ,the quantity of sugar present in the urine was appreciably lessened, and at the expiration of the sixth week, it was impossible to get even a slight reaction for sugar. Hand in hand with the gradual lessening and final disappearance of sugar from the urine, there were observed an amelioration and eventually disappearance of the symptoms and signs referable to diabetes.

Case II. Mrs. S., aged sixty-eight years, born in England, resided in the United States since a child. Came under my care, February. 1913. Husband died of diabetes ten years before. The patient had been able to care for her own house, and barring a violent attack of gastric trouble from which she suffered ten years ago, she had experienced good health. During the year prior to her coming under my care, she had lost 10 pounds in weight and when first seen by me she complained of marked prostration, headache, pain in the knees and calf muscles, and frequent attacks of vertigo. There were also present marked dyspnea upon slight exertion and pronounced mental hebetude.

The quantity of urine voided during the twenty-four hours, approximated 70 ounces. Upon repeated examinations it was found to contain from 0.5 to 1.5 per cent. of sugar. After six weeks of treatment, practically all her annoying symptoms disappeared. The urine had been free from sugar for a period of eight months and during this time the patient had gained 8 pounds in weight. The first among the annoying symptoms to disappear were the repeated attacks of vertigo. Within a period of three months after treatment was begun, the patient was apparently restored to health.

Case III. Mrs. K., aged sixty-five years, born in Ireland, resident of the United States for twenty-five years. Her husband was known to have suffered from diabetes before their marriage and succumbed to this disease seven years later. No other member of my patient's family had been known to suffer from diabetes or any similar condition. Appeared for treatment, January, 1913, at which time she complained of practically all the classic symptoms and displayed most of the signs known of advanced diabetes mellitus. The conditions from which she appeared to be most annoyed were, dull headache, pain in the fingers and toes, and frequent attacks of vertigo. She first learned that she had diabetes two years ago and since that time had lost 20 pounds in weight. The degree of prostration has paralleled the loss in weight.

The cutaneous manifestations of diabetes were well marked, also ulcer of the foot, clubbing of the fingers and toes, and falling of the nails.

The quantity of urine voided during the twenty-four hours varied between 150 and 250 ounces a day, and it contained from 3.5 to 5.25 per cent. of sugar. Blood pressure systolic 118, diastolic 70. Since under treatment for a period of six weeks, the sugar had at times fallen as low as one per cent. but had ordinarily been from one to two per cent. All symptoms referable to diabetes had shown decided improvement, and the ulcerated surface of the foot had healed. The quantity of urine voided a day had fallen from 150 to 60 ounces This case and Case VII are the only two of the series in which the sugar did not disappear entirely after treatment

CASE IV. Mr. J. C., aged forty-six years, business man, single, first came under my treatment, June, 1913, complaining of mental hebetude, epigastric pains, headache, frequent attacks of vertigo, insomnia, soreness and pain in the loins, pronounced weakness, and an ulcer, one inch in diameter on the inner surface of the right ankle. There had been present for one year, flatulency and eructations of gas after the taking of food, which condition usually antedated the paroxysmal pains in the epigastrium. There was intense thirst. During the past year there was a loss of 23 pounds in weight; blood pressure, systolic 160, diastolic 100.

The quantity of urine voided during the twenty-four hours was 420 ounces, with 5 per cent. of sugar. After one month of treatment the quantity of urine voided during the twenty-four hours varied between 60 and 70 ounces, and a mere trace of sugar was detected. Sugar was never found present after eight weeks of treatment and practically all the symptoms from which he at first complained, disappeared. The leg ulcer healed at about the same time the sugar disappeared, and since, there has been a continuous gain in weight of three pounds each month.

CASE V. Mr. T. C., aged fifty-one years, widower, three children living, business manager, was first seen, February, 1913, when he complained of pronounced weakness, headache on rising in the morning, intense thirst, and polyuria. He had lost 30 pounds in weight within the past six months and had suffered during this time from two superficial abscesses.

The quantity of urine voided during the twenty-four hours approximated 200 ounces and contained 4.5 per cent. of sugar. Patient was placed on treatment and not seen by me until seven months later, when there was found to be 60 ounces of urine in the twenty-four hours, no sugar present, and the patient had gained 5 pounds.

CASE VI. Mrs. C., aged fifty-four years, married, four children living, was born in Ireland, resided in the United States since a child, was first seen, July 1, 1913, when her chief complaints were malaise, mental hebetude, attacks of vertigo, dyspnea upon exertion, and severe pain in the knees and muscles of the lower limbs, shoulders, and back. She had gained 20 pounds in weight during the year 1912, but between January 1 and August 1, 1913, she had lost 13 pounds. There were present dryness of the skin, roughness of the hair, a horny condition of the nails, and eczema of the forearms, genitalia, and lower half of the abdomen. The quantity of urine voided during the twenty-four hours was 220 ounces, with four per cent. of sugar present; blood pressure, systolic 138, diastolic 78.

After treatment for one month the quantity of urine voided during the twenty-four hours was 60 ounces. Reaction for sugar negative. Generally speaking all the annoying symptoms had disappeared, except the eczema, which had shown decided improvement.

CASE VII. Mr. T., aged thirty-six years, born in Ireland, resident of the United States for twenty years, married, three children living, was employed as an engineer and occupied eight hours of the day in an engine room, where the temperature varied between 112° and 120° F. His chief complaints were pronounced weakness, mental dullness, even extending to drowsiness and tingling sensations of the toes, vague pains through the muscles, and occasional mild attacks of vertigo. Upon three occasions he experienced intense paroxysmal epigastric pain which necessitated that he discontinue his duties for the remainder of the day. There were also well marked dryness of the skin, falling of the hair, brittleness and thickening of the nails, and a slight eczematous area at each elbow. Lost 60 pounds in weight in the past two years.

The quantity of urine voided during the twenty-four hours varied between 350 and 400 ounces and it contained five per cent. of sugar. After treatment had been continued for one month, the quantity of urine was reduced to 200 ounces a day and contained three per cent. of sugar. When first seen his blood pressure was, systolic 128, diastolic 70. Following a month's treatment his systolic pressure was 135, diastolic 80. The patient did not continue under my care and I am unable to report further upon his condition.

CASE VIII. Mr. A., aged fifty-four years, salesman, married, two daughters living, first seen February 20, 1913. Chief among his annoying symptoms were repeated mild attacks of vertigo, discomfort, and a sense of tension over the liver, dryness and clearing of the throat, and intense thirst. There was also unusual flushing of the face and pronounced itching of the skin. Upon several occasions he experienced paroxysmal attacks of epigastric pain, which were occasionally accompanied by vomiting.

The quantity of urine voided during the twenty-four hours varied between 90 and 120 ounces; sugar present, 4 per cent.; specific gravity 1,040. Blood pressure, systolic 161, diastolic 110. After two months' treatment, systolic pressure 143, diastolic 80. Nine weeks after treatment was begun the quantity of urine fell to 50 ounces per day. Specific gravity, 1,022, reaction for sugar negative.

During the first five months following the beginning of treatment the patient lost 32 pounds in weight and at this time appeared to enjoy health.

CASE IX. Dr. X., aged forty-six years, physician, first seen in April, 1913. Chief complaint, frequent attacks of vertigo, which were often so severe that he was compelled to sit or lie down for a short time. He experienced one or two attacks of acute epigastric pain during the week. Had gained 21 pounds during the past year. Quantity of urine voided during the twenty-four hours, 40 ounces; sugar present 4.5 per cent. Three months after treatment was begun the urine was free from sugar and the quantity each day varied between 40 and 60 ounces. Blood pressure, systolic 155, diastolic 100.

Following treatment there was a gradual reduction in the percentage of sugar and a loss of 15 pounds in weight, while coincident with these changes the blood pressure fell to systolic 140, diastolic 72.

CASE X. Mr. C. A., aged fifty-four years, theatre manager, consulted me January 3, 1913, for extreme weakness, violent attacks of epigastric pain which were usually experienced two or more hours after eating, and vertigo. In this patient the degree of weakness was extreme, cutaneous manifestations were well pronounced, the nails brittle, the skin rough ,and the hair had fallen rapidly during the past few months. There was also numbness of the fingers and toes. The paroxysmal attacks of pain in the stomach had upon some occasions been so severe as to necessitate that he be taken from his place of business to his room.

Illness began two years before seen by the writer and he had grown progressively worse, having lost 53 pounds in weight during this time. He had no recollection that his urine had ever been examined during his illness. When first seen the quantity of urine passed during the twenty-four hours was 220 ounces, specific gravity 1,043, sugar present 5 per cent. Systolic blood pressure 116, diastolic 65.

After continuing treatment for eight weeks there was but a feeble reaction for sugar and during this time the patient gained 7 pounds in weight. At this date he discontinued all medicine for a period of over one month, when he returned, suffering from all the symptoms he ordinarily experienced. At this time the urine contained about one per cent. of sugar. As was formerly experienced, by treatment his condition rapidly improved, the sugar diminished, and hand in hand there was a gradual increase in weight.

CASE XI. Mrs. B., aged fifty-four years, widow, keeper of a hotel, was first seen May, 1913, suffering from extreme prostration, pain in the muscles, insomnia, mental dullness, failing vision, and vertigo. There were also present cyanosis of the fingers and toes and eczema of the genitalia. She had lost 50 pounds in weight during the past four months and reported having received considerable shock and injury as the result of a car, in which she was riding, having been thrown from the track. When first seen the patient was unable to leave her room. The quantity of urine voided during the twenty-four hours was 300 ounces; specific gravity 1,038; sugar present 3.5 per cent.; systolic blood pressure 140, diastolic 80.

Following six weeks of treatment the quantity of urine voided during the twenty-four hours was reduced to 80 ounces and tests for sugar showed merely a trace. There

was a decided amelioration of all of her annoying symptoms. The patient was removed to a hospital and I have been unable to get further record of the clinical course.

Case XII. Mrs. B., aged forty-eight years, married, first seen June, 1913. Complained of pain and soreness of the muscles and joints of the extremities, together with some pain in the back and a dull headache upon rising in the morning. There was fairly well marked weakness. Exertion was often followed by mild attacks of vertigo. For the past year there had been falling of the hair and irritation of the cutaneous surfaces of the extremities.

The quantity of urine voided during the twenty-four hours was 124 ounces; specific gravity 1,032; sugar present 3 per cent. Blood pressure, systolic 155, diastolic 102.

Following one month's treatment the quantity of urine was found to be 50 ounces each day and reactions for sugar were negative.

Case XIII. Mr. A. D. T., aged fifty-eight years, married, one child living, traveling salesman, first seen March 20, 1913. He had been known to suffer from diabetes for the past six years, during which time he had lost 40 pounds in weight. Suffered from undue soreness of the muscles, exhaustion, mental hebetude, repeated attacks of coryza, and headache. There were localized patches of eczema over the hands and for some years he had been subject to abscesses of the nose.

The quantity of urine voided during the twenty-four hours never exceeded 50 ounces; sugar present 2 per cent. At several of the examinations a trace of albumin was noted, although microscopic study failed to reveal any evidence of nephritis; specific gravity 1,036. Systolic blood pressure 138, diastolic 80.

One month after treatment was instituted, the urine was found free from both sugar and albumin; the patient was greatly improved and has since gained 14 pounds in weight.

Case XIV. Mr. W., aged sixty-four years, wholesale merchant, three children living, was first seen in June, 1913, when he complained bitterly of pain in the back and limbs, headache, and repeated mild attacks of vertigo. He became exhausted on slight exertion and noticed some failing of vision. He was unable to sleep more than four hours during the night. Had lost 20 pounds in weight during the past three months. There was a direct history of dietetic error. He had not only been eating liberally of starchy foods, but had also been using honey freely. Urine voided during the twenty-four hours was 120 ounces. Sugar present 2 per cent.; albumin, a trace; no renal casts; systolic blood pressure 172, diastolic 120.

Three weeks following the beginning of treatment the patient was able to return to his business and has enjoyed health since that date.

The quantity of urine fell to 60 ounces per day and at this time there was no evidence of either sugar or albumin.

Case XV. Mrs. R., aged sixty-two years, widow, three children living. When seen with her doctor in consultation, she was unable to leave her bed; there was well marked gangrene of the toes and a portion of the left foot. Other manifestations were conspicuous; for some months great prostration and pain in the feet and knees. Urine, specific gravity 1,025; sugar, one per cent.; acetone and diacetic acid were also present.

I am not certain as to the exact line of treatment that was followed after my visit to this patient. The case terminated fatally, however, within the course of a few weeks.

1810 Chestnut Street.

THE SURGEON AS THE AUTOCRAT OF THE OPERATING ROOM.

By J. W. Kennedy, M. D.,
Philadelphia.

A great number of unfortunate and sad accidents which have occurred in the operating rooms throughout our country, suggests the title of this paper. It is neither fitting nor necessary that we should permit the United States courts to dictate or suggest our surgical relations or our surgical responsibilities in the operating room. I regret to say that the actions of some members of our profession have been reprehensible through their efforts to charge certain fatal errors against certain institutions, or to some nurse or assistant. This is unprofessional, cowardly, and has not an iota or suggestion of the ordinary common fitness of things.

The members of our profession have no right to place themselves in a position that would oblige the courts to point out their duty to the patient. Our relation to the patient is a vital and sacred one, and should, from a moral standpoint, rise above any legal responsibility. I would dislike to feel that my duty toward my patient was regulated, or dictated in any degree by a legislative body. I should lose much respect for my calling if it had any such common or commercial attributes. Our patients must be looked upon as members of our family, and surgical patients who are under an anesthetic, are entitled to even a greater degree of protection. The anesthetized patient is an infant in the hands of a giant and must be treated with proportionate gentleness. There is some criticism due to the unnecessary exposures and rude treatment of the anesthetized patient. The surgeon is the autocrat of the operating room and is responsible for every happening in the room during his operation. He is responsible for the anesthetic, nurses, assistants, attendants, visitors, and for everything from the doorknob in. It does not take much reasoning from the esthetic point of view, and it does not take much more logical reasoning from the legal standpoint, to arrive at the same conclusion.

When you as surgeon are engaged to do an operation, the engaging party does not ask you who your anesthetists, assistants, or clinical nurses are; he holds you responsible for all, and so he should. How quickly we should be insulted if the patient suggested nurse, assistant, and anesthetist, yet there are a number of instances in which conspicuous members of our profession have contended in court that a certain nurse is responsible for the sponge and instrument count. This brings up a point of contention which necessitates a criticism of many of the big clinics of our country. I am sorry to say, the example which many teachers of our country are setting the student body, is a most reprehensible one and one which brings professional humiliation and loss of fortune and health, to say nothing of the legal complications. This is absolutely wrong and is inconsistent with our legal and professional obligation. There is but one solution for this question of the sponge count, which is the commonest source of legal complication; the operator must have a definite number of sponges and this number must be counted by the operator before and after each operation.

This same plan applies to gauze towels and instruments. There is no other solution which places the operator in absolute control of his technic. How many of us have witnessed that harassing discussion which takes place between the operator and his nurse in charge of the sponge count. This is embarrassing to a spectator; how humiliating it should be to the operator! There is something unrefined in witnessing a nurse on her knees endeavoring to count the sponges which have been thrown on the floor by the operator. This nurse is contaminated by such duty and put out of commission as a helping factor, another unnecessary operating room ex-

travagance. The number of sponges, gauze towels, and instruments must be as small as possible, one that the operator can count at a glance at the receptacle which contains them.

My technic in the Joseph Price Hospital is as simple as we know how to make it. I work with three gauze sponges and three gauze towels. Before beginning the operation, these sponges and towels are held to me for inspection. These pieces of gauze are the only ones which are permitted to remain in the abdomen during operation. I can count at a glance the three sponges, which are held in a basin for inspection before I close the abdomen. When I have finished the intraabdominal work, the nurse counts these three sponges by taking them out of the basin one at a time and placing them in another basin; they are then counted back to the first basin and this basin is then held to me for inspection. My final inspection clinches a sacred duty. It is never necessary to use more than three gauze towels and a like number of sponges at any operation.

You may have any number of small pieces of gauze, which are never permitted to remain within the abdominal cavity. The area to be sponged is touched, then the small piece of gauze is thrown away. The instruments are counted before and after each operation. This is a very small job in the Joseph Price Hospital, as we use as few instruments as possible. Some operators are using a single long piece of gauze. This may be some help from the standpoint of the loss of a gauze towel, but it is slow and cumbersome and gives too much traumatism in your work. Our sponges are of size and shape which can be identified. This system can be adopted in any sized clinic. It may be that a few surgeons have a nurse who may be thoroughly responsible for the sponge count, but this is poor teaching and is not consistent with your trust and obligation, to say nothing of the bad example to hundreds of doctors who may never have such a trustworthy nurse. This question of responsibility to the patient has no elasticity, it is absolute, and I rebel at the fact that it has been necessary for the courts to indicate such obligation.

There is another obligation which constantly worries me. I do a good deal of surgical work outside of my own institution, operating on patients for pus and peritonitis, draining with the extensive cofferdam system of gauze. I never see many of these patients after operating, and have to trust to the family physician to take out this cofferdam. I realize this is not right, as the physician who is not familiar with such surgery might fail to remove all the strips of gauze, or might even remove my cofferdam, place in three small drains of his own, then finally take out only two, leaving a derelict piece; yet I cannot see but that I should be held responsible for this doctor's error. This would probably be a legal obligation and possibly a moral one, but how difficult it is to do this outside work and return two or three times to take care of the drainage. Some discussion may be raised as to the impossibility of making the responsibility of the operator absolute. It is true, any one who is operating daily must depend to a great extent upon the aseptic integrity of his clinical nurse for sterilization of the operating room necessities, such as gauze, cotton, etc., but the operator can quickly check up any carelessness of this sort by the features of the convalescence of his patient, stitch irritation, etc.

Too early and too frequent necessity for cathartics following laparotomy should suggest a review of operating technic and paraphernalia. Since we have learned to wash our hands, postoperative cartharsis has disappeared entirely and distention is practically not seen. I feel it will be but a few years before we no longer depend upon commercial firms for sterilization of ligatures, etc. I believe that catgut and all absorbable ligatures will be of short life, as there is an element of danger from the standpoints of sterility and the indefinite time of absorption of such ligatures. We have certainly demonstrated in the Joseph Price Hospital that the absorbable ligature is not a necessity. For over a quarter of a century we have not used an absorbable ligature in the hospital. We use nothing but silk and silkworm gut, as the sterilization of these materials depends upon ourselves. Some of the most recent foreign textbooks on gynecology have recommended discarding all forms of absorbable ligatures. Kocher uses almost entirely silk and silkworm gut, and many of the leading institutions of this country are using silk and linen in operations for which we have often been criticised in the past.

Dr. J. Chalmers Da Costa, that prince of the surgical arena, after visiting the clinic of the late Joseph Price, said that Price was a quarter of a century ahead of his time. For a quarter of a century Doctor Price was forced to run the gauntlet of professional criticism. First criticised and looked upon as being behind the times, a little later he is tolerated, and finally we see his teachings and principles embraced.

241 North Eighteenth Street.

MEDICAL TESTIMONY AND LEGAL SUPERVISION.

By Paul Bartholow, A. B., M. D.,
New York.

My text is not literally true; but as far as legal scrutiny goes toward eliciting medical truth we must consider it to be a kind of legal supervision. The fundamental idea is the eternal contrast between the spirit of medicine and that of law. A doctrine which comes into direct collision with existing medical opinions and habits of thought, is the notion of "freedom of the will" as expressed in the German criminal law. The statute lays down that *der gereifte und geistig gesunde Mensch ausreichende Willenskraft habe, um die Antriebe zu strafbaren Handlungen niederzuhalten*, which can be freely rendered, "the man of sound mind has the will to subdue his criminal impulses." To some medical writers this is an erroneous and injurious doctrine, an appeal to the vulgar misunderstandings of the ordinary man. Lawyers, on the other hand, consider that it has an imperative claim on our acceptance, and maintain that it is generally impossible to get into the heads of laymen the principles which govern evidence in the courts of law. To which it

is a sufficient answer, according to medical philosophers, that the statutes of responsibility are with difficulty harmonized with our existing stock of knowledge. The revelations of a searching psychology reduce the idea of free will to a scathing analysis in keeping with physical laws. Life, whether vegetable or animal, is subjected to a universal and external law. In this mental frame man is abandoned to the action of teleological forces.

The alternative is not one of medical or psychological judgments. In the matter of responsibility, writes Professor Hübner (1), the expert should draw up his opinion according to the law's definitions. It is true that these definitions are "opposed to our experience and notions of natural science," but that again is irrelevant. It seems fairly simple that an expert can only be an expert if his office engages him to answer scientific questions. Otherwise he would be a witness to the court as to the merits of the case; or he would be acting as judge rather than the judge on the bench (2). This must happen unless the expert is indifferent to the ultimate right or wrong of scientific theories and replies as clearly as he can to the hypothetical question in the case, leaving it to the judge and jury to interpret his answer. Such, if I do not deceive myself, is the view of Professor Hübner and of lawyers like Sir James Stephen, and the opposing views of Maudsley and other writers are generally deemed a misconception of forensic medicine which ends, as might be expected, in a very uncertain deliverance as to what should be altered in the practice of experts in the courts of law.

Lawyers and doctors are competent critics, and they present a curious contrast. The public too has ideas, but is unfortunately unable to do anything with them. People expert in psychology, eugenics, sex platitude, juicy sentiment, and popular paradox, have all had a go at the mysteries of expert testimony. Consider the very latest thing first. In a recent thesis, showing much acumen, Dervieux (3) writes with emphasis and at some length on the blighting influence of legal systems and the advantages of being a scientific expert. He cleverly expounds the academic theory of *expertise*—that the expert should do his work under the supervision of skilled witnesses, that these and other experts should be chosen by the judge from university lists. His idea of creating a body of experts not drawn from professional witnesses on the American model, is good but hopeless. To attain to anything like Dervieux's ideal three things are required; an extraordinarily fine professor, an extraordinarily intelligent judge, an extraordinary elevation of public opinion. The suggestion, it is obvious, is out of the question. There may be some hope for France and Germany, but anything more utterly desiccated and barren than American ideas of *expertise* and scientific truth would be difficult to find and impossible to describe. There is also that loathsome fungus of the courts, the attorney with insulting and impertinent questions. Like an evil odor from an infected drain legal tango (or tangle) spreads itself over the land.

The lawyer's ideas of guilt and responsibility are normal, rational beliefs. There seems no valid reason why courts or judges should appoint a single skilled witness or joint select committee of talented medical gentlemen to visit a prisoner, examine him in slides and sections, and issue a report upon his sanity, his fundamental instincts, the trivialities of his mind, base uses of opportunity, and the general disadvantages of being an abnormal animal. Such a system, however, has been proposed. It is a question whether it would be an improvement on the present one, according to which experts are called by each side at the discretion of the parties and are examined and cross examined like other witnesses. Juries, it is justly observed, care little for generalities. Probably they care even less for the anemic theories of psychologists which are made by doctors into a cockshy of professional competition. Juries are unable to contrast the plain facts elicited by cross examination, that great instrument of truth, with the pretentious facts of criminology and the deep verities of anthropological science. "Their decision between madness and crime," writes Stephen, "turns much more upon the particular circumstances of the case and the common meaning of words than upon theories, legal or medical, which are put before them. It is questionable to me whether a more elaborate inquiry would produce more substantial justice."

We may admire the force and truth of this remark without altogether agreeing with the implied flattery of juries. Under the influence of counsel's eloquence, juries fall into a strained condition of emotional excitement. They become quite literally unhinged when they approach a great case, and many lawyers can be found to agree with the abolition of juries (4). With such a system, the French say, "Justice is not blind, but squints." "Juries," writes Pavia (5), "are a prey to every corrupting influence, a laughing stock." Or, again, "they are the faithful servitors of the most powerful, of every species of tyranny" (6). Another writer, Garofalo, contrasts the fate of the imprudent man who stole "two canaries from the lodge of a concierge, for which he was sent to prison for six months," with that of the rich lover who was acquitted by a tearful jury after having shot the husband of his mistress (7). In Italy and France husbands kill their wives and—even more enthusiastically—lovers kill the rivals of their affections, and are acquitted. The jury is ready to make matters smooth for them. In America, bold and unscrupulous talent, showing itself in theft and murder, has a business value. The members of the jury are impressed by the importance of a prisoner who has been in the business of homicide on a large scale. The speculation is—well, a speculation like any other. Here is a reason for killing stated appealingly and clearly.

It is needless, I suppose, to remind people that insanity is the defense most frequently set up in criminal trials. Insanity, in America, especially in New York, covers a decalogue of social sins. Here the expert appears and tells us that all crime is of the nature of disease (8). His words fall on appreciative ears. The jurymen are moved, and when counsel rises to add the advantage of his pleading, they are conquered and capitulate. In a given case, the question arises, What is insanity? It is of no use asking the experts for the prisoner. "I have read," writes Stephen, "a great variety of medical works on madness, but I have found the greatest

difficulty in discovering in any of them the information of which I stood in need; namely, a definite account of the course of symptoms collectively constituting the disease. All, or almost all (medical writers) describe a number of states of mind which do not appear to have any necessary or obvious connection with each other." And in another place, he adds, "I think that lawyers were, and are, right in admitting with great reluctance excuses put forward for what on the face of them are horrible crimes."

This is a sound view, I believe, though nowadays we have the magnificent work of Professor Kraepelin (9) who describes insanities, collectively deriving them, if I am not mistaken, from a common parent. The question, What are the mental elements of responsibility? must be one both of law and formal psychology. It is therefore much to be regretted that experts in general who have made good use of the humanitarian principles of psychology have not more accurately observed the psychological distinction of Kant's (10) between the necessary laws under which all men think and the contingent laws under which certain men think of certain things (11). The neglect of this distinction has given the advantage to the empirical arguments of medical witnesses who are thus enabled to decide the question at issue by what is in reality no more than an *argumentum ad hominem*. They say of some anomalous and eccentric case that the defendant has paranoia, or dementia præcox, or hebephrenic insanity—terms so wanting in perspicuity that the application to them of any principles of law or medicine is difficult. Thus a man whose defense is insanity brings into court a set of experts who are allowed to give their opinions upon a host of minor and irrelevant details. In this relation, it is obvious that the question of guilt is, with reference to the defendant, merely contingent, and relative to the particular studies of particular men. Thus it often happens that an expert witness becomes an advocate who makes out the strongest possible case for his client. This kind of advocacy gives us one law for the rich and another for the poor in a sense which does not hold where scientific demonstration is practised.

Our advocate expert has imagination enough to foresee ulterior consequences and sometimes appears on both sides of the same case. This latitudinarianism seems to him quite moral, and if he has more imagination he will find some rhetorical sophism and assert (if he is unable to think of any other) that his client is sane on the ground that his mind has undergone a sea change into something new. This plea causes a *frisson* of emotion to run through the court. "In most of the domestic broils," writes Austin (12), "which have agitated civilized communities, the result has been determined, or seriously affected by the nature of the prevalent *talk*; by the nature of the topics or phrases which have figured in the war of words. These topics or phrases have been more than pretexts; more than varnish; more than distinguishing cockades mounted by opposite parties." For "broils" substitute here "trials," and we have a picture in bright relief, of what takes place in our courts of law when a case is argued, in which the defense is insanity. All is phrases and [illegible] examples in the [illegible] reasoned with the experts for the prisoner; have been imbued with *their* spirit and seized the scope of *their* arguments, the long and expensive trial is seemingly a triumph of our system of jurisprudence, the greatest, the most perfect, etc. The excited and powerful majority, representing that vague collection of interests called public opinion, have rushed into a state of mind which can perceive and discourse of nothing but the responsibility of the prisoner and the assumed right of insanity to escape legal sanctions. Perhaps the primitive idea of pity and reverential awe in the presence of the affliction of madness is thus expressed. As for the jury, when they see emotion and politics dictating the choice of experts, they at once grasp the situation and fall in with it, and false, emotional influences in the courts become a reality instead of being, as they should be, almost negligible. The need for keeping the courts free from this sort of thing is urgent—to bring home the rule that "an expert is a witness like other witnesses." If he is to tell the jury what is the law —say about madness—he supersedes the judge. If he is to decide whether in fact, the prisoner is mad, he supersedes the jury.

There are always plenty of advocate-experts for any part. Possibly they might imitate the impartiality of the scientific witness, but their temptation to bias is much stronger, for unhappily they have to maintain a thesis. In an admirable opinion, Judge Barratt (13) has found time, among his varied studies, to write to me that, "A true expert ought not to be called in Court to swear specific facts into the jury box, as that is not the province of a true expert who is merely to answer scientifically hypothetical questions put to him, which fairly and substantially recite the facts that have been given in evidence and which aid the jury in considering the proofs. This is the rule of law as I understand it. Such a hypothetical question is not faulty if it recites facts given in evidence, even though the testimony as to those facts may be contradicted by witnesses of the adverse party. The hypothetical question is not strictly evidence as ordinarily understood, but the opinion of a man specially trained in a calling or profession and thereby qualified to speak authoritatively upon a subject. It is for the jury to consider and weigh it with other testimony, so that they can arrive at a correct conclusion. The law, of course, does not require impossibilities, and it must be content with the best evidence that can be obtained under all the circumstances of the case, and while much is to be desired in cases in which experts are called, yet most of them are absolutely honest in their opinions, even if those opinions are sometimes exaggerated, biassed, and incorrect. And some so called experts are not experts at all. By this I mean that they are incompetent. Thus if one material fact is omitted from the premise or too much weight given to another entering into the conclusion of a physician's opinion upon any question, the conclusion in a particular case is erroneous.

"An expert should be entirely disinterested, cold and unimpassioned, not related to the parties and having no interest however remote in the subject matter. Experts should be careful not to identify

themselves with the side by whom they are called so that they lose the character of true experts and become mere advocates of this or that opinion which best suits the side of the case with which they are identified. It is this advocacy that has earned for some men the title of professional experts and lowered the esteem in which many of them were formerly held by the public. The only way in my judgment to regain this esteem is the rule, applying it strictly to doctors, that a physician called as an expert must give his opinion after a personal examination, if that is possible, or, if not, by an answer to an abstract, hypothetical question, which fairly and substantially recites the facts given in evidence. The latest case of the kind is Guarantee Trust Co. versus Waller, 240 *Pennsylvania State Reports,* 576, decided May 5, 1913. It was a fight over a will in which the testator was alleged to be suffering from senile dementia and special delusions, and there was the usual number of medical experts. The will was sustained. The Supreme Court held:

> It is not an error for the court to instruct the jury that the opinion of an expert, based upon concededly disputed facts, is of very little weight and while it is not strictly accurate for the court in the trial of such a case to charge the jury, in answering to a point, that "medical testimony on the subject of mental incapacity is the lowest that is ever allowed in a court of justice, and when opposed to established facts is not entitled to much respect," this does not constitute reversible error, where it appears from the context and the circumstances that the jury must have understood the reference to be to *expert* medical testimony.

The learned judge means that special pleading and half truth, being based upon incomplete premises, are, if not worthless, positively misleading. Little is gained by including loose, unreasoned propositions in an expert's report (14). See Gerhard versus Berks County, 19 *Pennsylvania District Reports,* page 209, and Commonwealth versus Danz, 211 *Pennsylvania State Reports,* page 507. For the benefit of the busy reader (15), we shall simply observe that in these cases the particular way in which the expert fails depends upon the particular fallacy about insanity which happens to be fashionable at the time of testifying. The plain truth is that no expert steeped in theories and fragmentary definitions, can deal successfully with the law of insanity. It is no particular blemish upon his science that he cannot clearly explain insanity. No one is compelled by statute to testify about psychological theories: and no medical man is, by nature, capable of testifying spontaneously about psychological mysteries. It follows that the expert who deliberately chooses insanity for his theme, deliberately chooses to be harassed by counsel. No amount of commendable innocence as to his theme, whether he begins by deceiving himself and ends by deceiving nobody, will save him from the uttermost legal supervision.

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66 WEST BROADWAY

THE EFFECTS OF ALCOHOL AND TOBACCO ON LIFE EXPECTANCY.*

BY T. D. CROTHERS, M. D.,
Hartford, Conn.,
Superintendent, Walnut Lodge Hospital.

There is a cosmic consciousness in the air of coming revolutions and evolutions, which have intense personal interest to every individual. This is evident in the changes, the unrest, expectancy, and need of constant readjustment of our mental and physical relations in every day life. New questions of disease and mortality, new phases of degeneration, appear in every department of social, professional, and commercial life. Theories, creeds, dogmas and prerogatives supposed to be settled, are challenged, contradicted, and put aside. Life insurance companies realize this, in the increased death rates and complex problems which cannot be judged by the data of the past, or measured on any mechanical principles of the present.

Alcohol and syphilis are coming into greater prominence as factors in disease and death, and call for new study and examination. Tables, deductions, and theories, based on statistics in the past, have lost their certainty, and the estimates of longevity are frequently found erroneous. The medical examiner is confronted with new possibilities in the etiology and prognosis of disease, and the data of the past are shifting and new points of view are appearing. Hygienic studies by eminent scientists indicate that a very large proportion of deaths under fifty years are the direct result of profound ignorance and neglect and are hence preventable.

Companies read the same facts in their death rates, and realize that more exact studies and efficient examinations would have saved immense losses. Evidently the managers of the life insurance companies are not clear concerning the influence of alcohol in mortality. They have a general consciousness that it is an important factor in disease, but concerning its exact relation there are conflicts of opinions.

Some companies retain the Anstie theory, viz., that a certain amount of spirits is harmless and may be consumed in the body with little or no danger, provided the amount is below a certain limit. A very few companies insure only total abstainers and are emphatic against taking any other risks. Most companies accept applicants who acknowledge the moderate use of spirits, such as wine at meals, and occasionally alcohol on special occasions. When other requirements are satisfactory, they consider the use of alcohol of little or no importance. Medical examiners differ widely in their estimates of the danger from this source. Some of them regard beer as of no influence in the mortality rates. Many of them consider spirits taken as a medicine, even for a long course of time, harmless.

Some companies assert that there is less danger in accepting moderate drinkers, under certain circumstances, than persons who are classed as total abstainers. In this there are very curious conflicts of opinion and theories which refer back to statistics

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and policies of long ago, as furnishing a clearer, more definite course to pursue, than those at present.

As a student of the drink and drug neuroses, I take great pleasure in giving a general summary of the facts which are now considered to be established and verifiable, concerning alcohol and tobacco and their relation to the great problem of life expectancy. It is a curious historic fact that the intense activity and assertiveness of laymen and reformers concerning the dangers from alcohol have been the greatest stimulus for scientists and laboratory workers. The apparently extravagant statements roused scientists to examine the subject and ascertain whether these assertions were verifiable or not.

Many scientific laboratory workers, particularly in Germany and England, after careful studies of alcohol and its physiological action on animal life, concluded that much of the present literature condemning alcohol is approximately correct, and that the theories of the past, asserting alcohol to be a tonic and stimulant are entirely unsupported; also that it should be considered a most dangerous protoplasmic poison. These conclusions have been elaborated into textbooks giving studies and facts of the most convincing character.

The late Doctor Richardson, Sir Victor Horsley, Professor Sims Woodhead, and others of England, Kraepelin, Mendel, Kassowitz, Magnan, and others of France and Germany have written books condemning alcohol in every possible form as a beverage and medicine. In this country, Doctor Martin, Doctor Berkley of Johns Hopkins, Doctor Davis and Doctor Hall and others of Chicago, Professor Hodge and Professor Patterson of Clark University, Kellogg of Battle Creek, and laboratory workers from New York and Philadelphia have written extensively, describing their studies and conclusions confirming the assertion that alcohol is a distinct erosive poison to the brain and tissue cells.

This literature is very largely derived from exact laboratory work and has been published in books and pamphlets, which are constantly increasing in number. Many clinical observers have for years studied the histories of alcoholic cases, giving the etiology, symptoms, and progress of these neuroses.

As one of the clinical students in this phase of the subject, my work began, in 1874, as assistant physician in the first inebriate asylum in the world, at Binghamton, New York. From that time to the present it has been entirely confined to this class of patients and their maladies. This has been done with the same exactness as laboratory work, and the conclusions strikingly confirm those of others, that alcohol is the most profound degenerative agent, and its use produces distinct diseases and neuroses, which are as traceable and curable as any other disease.

These studies have been carried on by others, notably the late Doctor Kerr, of London, and have been incorporated into books; two, of which I am the author, have also been published in the *Journal of Inebriety*, which I have edited since 1876. This was the first journal devoted to the scientific study of this subject, and today there are two in Germany and one in England, following the same lines. It is from these efforts that a new scientific field has been opened up, and a new literature has been created, which has changed public sentiment and indicated possibilities of prevention and cure that are only faintly realized at present.

SOME FACTS FROM THESE STUDIES.

Alcohol in any form is recognized as a most complex chemical agent with specific physiological, pathological, and psychological effects on cell and tissue. These are irritant, depressant, and anesthetic; at the same time corrosive and erosive. There are now ten different alcohols which have been studied, all having the same anesthetic and narcotic action, but differing in their specific and local effects. The fascination which comes from their use is due exclusively to the narcotic effect, suppressing motor and sensory functions, covering up fatigue and pain and lessening irritation, and giving a false conception of its action. Beyond this there is a peculiar dehydrating action and derangement of metabolism followed by corrosive action on cell and tissue. In many instances this can be traced with great exactness; in others it is obscure. In all it is seen in palsies, fatty degenerations, and morbid growths. To describe these pathological effects would require a volume, and even then, only general statements could be given. There are many volumes published showing the local action of alcohol on cell and tissue.

Clinically the facts are a little clearer; they show that spirit and drug neurotics are largely confined to two classes, the alcoholic and the inebriate. The former is literally the moderate drinker, or the one who uses spirits constantly in small quantities, on the assumption that it takes the place of food and in some way gives vigor and strength. Such persons are rarely seen intoxicated and are not apparently mentally disturbed. They are often active workers, conduct business rationally, and appear as more or less normal healthy persons. They are really toxemic and suffer in a minor degree, the same as those who use lead, mercury, and other poisons, but are not cognizant of it themselves, and are profuse in their explanations should an overt act take place.

In England and on the Continent, the alcoholic is very common. He is noted as a sufferer from gout or rheumatism, with both hypertrophy and atrophy of the heart and liver, also of the stomach. He has low resisting power and dies suddenly from obscure causes. The post mortem examination always shows cirrhosis, sclerosis, and organic changes. In this country the alcoholic is less common. The moderate use of spirits is of shorter duration. Such persons become inebriates early, and drink excessively, then stop, and in the free interval begin the moderate use of beer or wine.

The strains and drains of the present civilization call for incessant effort of adjustment to the rapidly changing conditions. This falls most heavily on the alcoholic who is unable to drink moderately, and at intervals craves complete narcotism. This is followed by low resisting power and feeble endurance, and often terminates in sudden death from pneumonia, hemorrhage, shock, or so called heart failure. The American alcoholic is really a more dangerous risk than the English or German alcoholic, and while his use of spirits may be concealed

and death apparently take place from other causes, he is the most degenerate of all users of spirits.

The inebriate differs from the alcoholic in using spirits only at intervals and for brief periods. These are followed by marked abstinence, careful living, and efforts to repair the injuries from their former use. The drink craze comes on suddenly, like an obsession, calls for alcohol in any form, and is not satisfied until profound coma and narcotism follow. Then the obsession dies out and apparent recovery ensues. These attacks sometimes are very regular as to time and duration. They are often preceded by great cunning to conceal the conditions and avoid publicity. In others they are marked by a complete change of character and conduct. In all they resemble epilepsy in the onset, duration, and termination, and are literally nerve storms in which the functional energies of the brain concentrate in one direction and demand complete narcotism before they are satisfied.

There are a large number of persons in this country belonging to this class, and their drink paroxysms are frequently known only to intimate friends. Such persons, like the alcoholics, have low resisting power, and sudden inflammatory conditions are always imminent and usually fatal. As in the alcoholic, when injured, or forced to undergo a surgical operation, their vitality is low and uncertain. The inebriates are toxemic during the stage of drinking, and afterward seem to be fairly normal. Both of these classes are prone to infection from bacteria and climatic conditions. The inebriate has a better prognosis and lives longer, yet the post mortem examination shows degenerations and changes which gave little or no indication of their presence during life.

The free period in inebriety is literally a halt and return to health which gives Nature a chance to repair the injuries. These two classes are continually poisoned and how far mortality is increased and degenerations are provoked is an individual question. Newspaper paragraphs and individual statements boasting of the vigor of any one in these two classes are very largely unverifiable, and when examined carefully, if the conditions mentioned exist, they are rare exceptions which only prove the rule.

In brief, the alcoholic is toxemic, suffering from autointoxication in addition to that from the toxins of alcohol. The inebriate is a neuropath and psychopath, subject to morbid impulses and obsessions, with defective and degenerate brain control. Both are exceedingly dangerous risks and are not to be judged by the average mortality tables. These facts are very significant and are confirmed by mortality statistics.

MORTALITY STATISTICS.

Here again we notice that the statements of laymen and reformers have aroused critical inquiry and study, which might not otherwise have been made. Recently an example of this, was that of a prominent life insurance man who made a careful study of statistics with the purpose of showing that the death rates asserted by laymen were exaggerated. After a long critical examination of a large amount of data, he asserted that not less than 60,000 or 70,000 persons died yearly in this country from this cause, and ventured the opinion that this might be only a minimum statement, and then expressed great surprise that others had not recognized this fact.

Several studies of the mortality statistics in this country and abroad have reached one conclusion, that alcohol is the most distinct and prominent of all the particular causes of death in persons under fifty years of age. In two large eastern cities, studies of deaths from pneumonia in persons under fifty years of age brought out the startling fact that from sixty-five to seventy per cent. of the persons dying from this disease had an alcoholic history. Cerebral hemorrhage showed equally startling statistics of over fifty per cent. of persons who had used spirits. The so called cases of heart failure and sudden collapse that ended fatally had the same history.

Nephritis in middle life was another disease in the same class, also injuries, such as shocks, blows on the head, and lesions that were fatal occurred most largely in persons who used spirits. Recently, studies of tuberculosis have brought out the same fact, only not so prominently. We are all familiar with the statistical studies of the causes of insanity, idiocy, pauperism, criminality, and others of the great degenerative diseases, and the very great prominence that alcohol has as a direct and indirect cause.

The recognition of alcohol has assumed equal proportions to that of syphilis in the exact etiological studies of disease and mortality. All unexpectedly, recent hereditary studies bring striking confirmation to this fact. The data already accumulated vary widely, and exact statistical figures are not possible at present, but every new study brings out alcohol as one of the most serious, far reaching, degenerative causes in the disease and mortality of the present.

WORK OF LIFE INSURANCE COMPANIES.

Companies and their medical examiners have done a great deal in this field, particularly the examiners, who are and have been practical laboratory workers, and while the facts have been put on a mathematical basis, there is a great deal of mystery yet, and whole fields of study have not yet been occupied. The commercial objects and purposes of the companies all centre on two or three facts which ought not to be concerned with theories, particularly those of the past. It is a clear, cold scientific question of induction and deduction and the examiners should receive the warmest consideration and assistance.

Several companies, particularly in England, have determined not to take moderate drinkers, because of the increased risk; other companies hesitate, but all look forward to an ideal condition of taking risks only of total abstainers. Comparisons between the death rates of abstainers and nonabstainers indicate clearly that nonabstainers have from ten to fifteen per cent. greater mortality than those who do not use any form of spirits. These deductions refer to the same class of persons in about the same condition with slight variations in the different countries.

The great question is, Is the mortality always increased, and is this statement authoritative and reliable? The laboratory studies which are going on

even more enthusiastically today than ever, show that from a half to a single ounce of spirits, taken by a healthy man, produces palsy of the senses and derangement of the organic activities, that are measurable one hour after it has been taken. Every year new instruments of precision are invented, new methods of measurement, and new tests of the organic activities of the body, and all these point conclusively to the damage and derangement following the use of small doses of spirits. The inference is unmistakable that any substance or drug which has so profound an effect on the sensory activities and the metabolism of the body must seriously lessen longevity and increase mortality. This fact receives special confirmation in the studies of athletics and in games and sports where muscular endurance is required, and also in army experience where exact work is called for and where alcohol is positively forbidden as a deterrent, lessening and lowering human capacity and human intelligence. These facts come from hard experience and from direct observation, regardless of theory.

The question centres about the mortality of persons who use very small quantities of spirits, and the answer must come from a study of the effects of small quantities of alcohol on healthy persons. The present plan of averaging health and longevity according to statistical studies of long ago regardless of the present teachings of science and experience, is unscientific and commercially perilous.

COMPLICATIONS FROM TOBACCO.

Exact studies in these days have made prominent the fact that tobacco must be considered in all questions of health and disease. Here as in other fields, laymen and reformers have taken up the subject with great energy and enthusiasm, pointing out the dangers from this source, largely based on personal opinions. Laboratory workers have taken up this question to determine how far these revolutionary statements are true, and have found that the physiological effects of tobacco are narcotic and irritating; its depressive and sedative action resembles that of other drugs, particularly opium or alcohol, only less marked and more concealed.

They have discovered certain alkaloids, such as nicotine, furfural, and others of the class of aldehydes which when separated and given to animals are extremely poisonous, causing rapid death. They have also shown that solutions of tobacco in very small quantities given to animals have a peculiar action, resembling that in persons who use tobacco freely. Laboratory studies show that it is a special, peculiar poison, cumulative and concealed. Cigarettes and their effects on the system have attracted a great deal of attention. Both laboratory and clinical studies have reached the unanimous conclusion that this is the most dangerous form in which tobacco can be used. This is due to the fact that the combustion is carried on so close to the mouth that all the products are absorbed by the mucous membrane of the mouth and throat. The continual accumulation of the alkaloids falls on the arterial tension and vasomotor centres, then later produces toxemia. Tobacco affects arterial tension, raising it temporarily and then diminishing it.

This diminution brings with it a sense of comfort and relief that is pleasing and sought for. After a short time the depression is registered on the motor activities, producing excessive nervousness, loss of control, and derangement of nutrition. This is very prominent in young persons, particularly boys, who show distinct anemia, both mental and physical, followed by pallor, indifference, and incapacity.

Later in life there are certain heart symptoms, irregular activity and disturbance, which have a distinct symptomatology, and this is more or less common. The post mortem appearance of persons who have been great tobacco users shows arteriosclerosis and atrophy of both cell and tissue, which are traceable to this cause. Sudden collapse, or what is vaguely termed heart failure, is found more commonly in persons who use tobacco than in others, and the inference that tobacco has caused it, is sustained.

Persons suffering from a great variety of nervous and nutrient disturbances, recover when tobacco is taken away, and this is evidence of its degenerative action. Tobacco is always a complicating cause when associated with spirits and drug taking. It is simply another sedative and depressant, bringing in new toxins to be eliminated. The removal of spirits and drugs is always greatly retarded by the use of tobacco. Cigarettes seem to be a particularly serious factor in the complications that follow. There is a large amount of evidence showing that the early and continued use of tobacco not infrequently precedes and becomes an exciting and contributing cause of spirit and drug taking.

Clinical experience amply confirms the laboratory teachings of the danger from the use of tobacco. When used alone, it undoubtedly increases the susceptibility to other diseases, and any study of longevity that does not consider tobacco a factor influencing the conditions of life, will be faulty. So far it can be stated with absolute certainty that the physiological and pathological effects of tobacco, to a greater or less degree, complicate and increase mortality, and its influence on the entire organism is that of a profound, concealed poison, lowering cell activity and brain control.

PERSONAL STUDIES.

A personal experience extending over forty years, confined entirely to the study of spirit and drug takers, has indicated some facts and conditions which medical examiners are more or less familiar with. Up to ten or twelve years ago, fully one third of all persons who came under my care carried policies from $500 up to several hundred thousands of dollars on their lives. Within the last few years this number has greatly diminished, and it is also noted that patients carry smaller policies, although occasionally some incurable person has a very large insurance. During these long years, I have known only a few instances that have come into question by the companies. The policies apparently were paid without any question of the past history.

Evidently the medical examiners in the past have not been clear concerning the danger from the use of alcohol. Theories that a moderate or occasional use of alcohol is insignificant in questions of health have prevailed. Thus a periodic inebriate with a $50,000 policy made application for double this

amount. He answered truthfully that he had drunk spirits at times, at banquets, and occasionally to excess, but affirmed that practically he was a temperate man. The family physician regarded the drink paroxysm as a temporary matter due to overwork and other minor causes. The man was able to conduct his business with reasonable sagacity, and the examination showed no particular fault of the organism, so the examiner agreed with the family physician, and an additional policy was taken out. Two years later he died from hemorrhage.

Another instance was that of a business man who drank wine steadily and was considered by the family physician a good risk. He took out large policies in several companies without question. This man had been twice under my care, as was the person previously mentioned. They represented two distinct classes of drinkers and were markedly degenerate and diseased, and why these facts were not recognized by the companies' examiners was a mystery. Both of them died and the policies were paid without question.

I have met a few persons carrying large policies who came under my care with the hope of securing immunity from the excessive use of spirits and of being enabled to drink wine and beer in small quantities and in moderation. Many persons entertain this theory, that a moderate use of spirits is conducive to health and longevity, and when they find that they are using it to excess, seek help to prevent the disastrous effects. There are others who carry policies which are evidently paid for by fathers, mothers, wives, and intimate friends. They are able to convince the medical examiner that their very moderate use of spirits is due to local causes and entirely within their control. They take spirits as a medicine and tonic, and refer to the family physician who is responsible for their use of it.

Such persons visit watering places, travel abroad, appear reasonable in the management of their affairs, yet the fact that the friends are willing to pay for large policies on their lives suggests an intuition of early death, and experience confirms this. On several occasions I have treated persons who carried large policies, payable to the companies or business concerns in which they were associated. They were often active working men, not known as spirit drinkers, yet in the policies they declared that they used spirits occasionally.

Such persons complain of digestive disturbances and give a great variety of symptoms, which are specifically due to the secret use of alcohol, and after a few weeks' residence away from home improve greatly. Early mortality is inevitable. There are many other persons who regard the use of alcohol up to the point of intoxication as a transient condition of no importance in the question of longevity, and when they die pneumonia, nephritis, and cerebral hemorrhage are the recorded causes of death and the real cause, alcohol, is unknown, except to their intimate friends and associates.

Probably the largest number of persons who carry policies of different sums are the active business and professional men of today. They occupy centres of ununsual strains and drains, and live a life of apparently reckless disregard of the essentials of healthy, normal living. They are seen at watering places, sanatoriums, and are club men who take long vacations in the woods or go abroad in an apparent search for health.

They are gourmands, pleasure seekers, and are seen at banquets, dinners, and social festivals. Their drinking history is apparently insignificant, although they are known to use wine and beer. Many of these persons show a fear almost tyrannical in character of persons in their employment who drink. They are emphatic and positive in their belief that only total abstainers can do any work requiring intelligence and skill. Practically and in private life, they consider themselves exceptions to the rule, and believe that alcohol is of some power and value to them.

Every year persons of this character who insist on total abstainers to do their work die, leaving enormous policies. If a post mortem examination follows, there are significant signs of alcoholic degeneration in sclerosis and cirrhosis and in the inner circle of their lives there is evidence of the continual use of alcohol. In medicolegal questions over contested wills, I have on several occasions discovered the double character of the person, and this very factor in itself indicated a mental degeneration, the cause of which could not be mistaken.

There are companies which accept applicants who acknowledge the use of small doses of spirits. They evidently adhere to the Anstie theory and have some doubt about the laboratory and clinical conclusions of the present day. Thus a company sent out an inspector to make inquiries concerning the health of policy holders of $10,000 and upward in a certain section of the country. The inspector reported that fully one third who carried large policies used spirits; also that a certain number of them had suffered from delirium tremens, and the local examiners considered this to be of no importance.

The managers of the company were divided on the question of continuing the policy of such persons, or reducing the amount. Two years later the company refused to carry these policies any longer on these risks, except for a very much lower amount. Policies taken out by prosperous business men as mere speculations, suggest many inquiries, which often reveal emphatic physical reasons for anticipating an early death.

Several persons have been under my care and immediately afterward secured large policies. What their statements to the company were I do not know. Persons who have taken "gold cures" and various quack treatments are very wisely considered bad risks. The fact of having gone to an institution, surrounded with mystery, is evidence that they and their friends were greatly alarmed at their condition, and they showed unusual anxiety to recover. The treatment at all these places is substantially heroic doses of strychnine, atropine and other powerful remedies, indiscriminately used, which increase the degenerations and, while checking the drink craze, lower the vitality and power of resistance, making it doubtful if they ever fully recover in the future.

In the examination for policies the psychology of the applicant should be as carefully inquired into as his physical condition. There are more indications of longevity and its limits in a study of the

person's purpose and object in life, his mental control, his ambitions, his obsessions, both open and concealed. When these facts are known, together with his social history, the physiological and pathological conditions of the organism are practically clear. It is from this penumbra region of activity, where the storms and strains of life centre, that one can determine the possible use of alcohol and narcotic drugs with more or less certainty.

One great fact should never be overlooked by the examiner, namely, that alcohol is a sedative and narcotic, and one of the most grateful and deceptive of all the drugs used, and that our civilization and our time are particularly favorable for the activity and growth of the alcohol habit.

SOME CONCLUSIONS.

There is no question about the effects of alcohol in large doses, used continually or at intervals. Laboratory work has shown beyond question its paralyzing effects in doses from half to one ounce; also that it has a special action on the vasomotor centres, deranging the circulation and dehydrating cell and tissue. Cells exposed to one tenth of one per cent. of alcohol become shrunken and changed in appearance. The granular matter, the dendrites, and the nerve terminals are eroded, and after a time become the seat of inflammation. New toxins are formed, which still farther complicate the protoplasmic growth and activities of the body.

Tobacco does the same thing, only in a lesser degree, and is more corroding. These facts are confirmed by clinical experience of the histories of persons and studies of symptoms, as well as by comparative studies of alcohol and tobacco on cell growth in plants and animals, showing deterrent and degenerative physiological effects that are unmistakable.

There can be only one conclusion from this, and that is, that alcohol is the most subtle and dangerous of all drugs, impairing health and lessening longevity. Examinations to determine these facts cannot be satisfactory if limited to physical conditions. They must extend to the mental activities, motives, and purposes. Occupation, successes and failures in life, and their effects on the mentality and the ambitions and purposes of the individual, are most important.

Policy holders today are subjected to strains and drains unknown a half century ago. There are certain occupations, certain environments that strongly predispose to the use of narcotics like alcohol and tobacco. There are certain causes, some of them psychic that should be the subject of distinct and exhaustive examination. Medical examiners should be laboratory and clinical judges of the deductive and inductive studies of the entire phenomena of living. They should have the largest liberty and greatest encouragement to include in these studies every possible physiological, psychological, and sociological question that enters into every day life.

If the companies are unable to limit their business to total abstainers, there are already data sufficient to indicate the possibility of insuring moderate drinkers on a practical commercial basis; thus a man who at forty years asserts that he is drinking alcohol in moderation, should be rated with the same expectancy as a man of fifty or fifty-five years, and pay premiums accordingly. A periodic drinker of thirty years should be charged the same premiums as one of forty or fifty years. This is on the supposition that they are free from the ordinary symptoms of physical disability.

The central fact is that the drink and drug taker has discounted the future, and is prematurely aged, and the company can estimate this premature aging and issue policies accordingly. All persons acknowledging the moderate or occasional use of spirits, should pay the same premium as persons from ten to twenty years older, depending on circumstances and conditions. The present system of making all classes pay the same rates is an injustice to the abstainer, who must pay, too, the increased risks which the company assumes by insuring the moderate drinker.

Life insurance is a commercial business, without sentiment, and should recognize the changing conditions and discoveries in science as well as in business. The longevity of all classes from the laborer up to the millionaire is dependent on constant changes and subject to great revolutions, and the medical examiner should have full latitude to study and determine the influence of these changing conditions.

The effect of alcohol, drugs, tobacco, and many other pronounced poisons, with most degenerative action on the brain and body, should be recognized. The insurance companies must consider these facts on the same basis as railroad companies and large corporations, which employ thousands of men, and demand the most exact work and highest efficiency, which can come only from total abstainers. The medical examiner is the authority to protect the interests and prevent the inevitable losses which will follow neglect to recognize the teachings of science in this field of work.

THE ARMY MEDICAL CORPS.*

Some Data Thereon.

By H. Sheridan Baketel, A. M., M. D.,
New York,

First Lieutenant, Medical Reserve Corps, United States Army; Instructor, Genitourinary Diseases, Long Island College Hospital.

A certain fascination attaches to the army and navy of the United States, which holds a great part of the civilian body in its grasp. The instinctive love of country which men seem to take in with their mothers' milk has outward exemplification in one way by admiration for the great fighting or peace preserving services of the nation, the army and navy.

While the spectacular part of these branches is represented by the line, which does the actual work of fighting and peace preservation, the ability properly and efficiently to perform this most important duty depends largely upon the health of the personnel. It is therefore the medical corps which is the foundation of any army or navy. If its members are not abundantly able to prevent disease, the fighting men are of little value in carrying out a successful campaign.

*Published with the permission of the Surgeon General, United States Army.

The United States Army, small but efficient, shows such a low rate of illness that the ability of the medical corps is apparent. At this time this department of the army is in the forefront of popular interest. Its surgeon general, General William C. Gorgas, has conquered the pestilences of Panama's isthmus and made that spot as healthful as New York. The Rand Mining Company recently borrowed him that he might suggest ways and means to make some parts of South Africa more habitable through the eradication of disease, and our South American cousins have sought his services for similar purposes.

The practical elimination of typhoid fever in the army, due to the work of Major Russell and his coworkers, has directed attention anew to the high grade of scientific work which officers of the army's medical corps are doing. Captain Craig and Captain Nichols have been demonstrating to their civil colleagues certain features in the treatment of syphilis with salvarsan which stamp them as syphilographers of a high order. In many ways it is possible to point out the eminently practical services of American army medical officers.

The appearance of the *Army Register* for 1914 will prove a source of interest to many, for it contains, in addition to the usual amount of explicit official information, the educational qualifications of the entire personnel of the service. Members of the medical profession will find, upon perusal of the *Register*, that army medical men are splendidly educated. For example, of the 445 men in the medical corps, 113 are holders of academic degrees, and in addition to the degree of M. D., which each officer must possess, 333 men are graduates of the Army Medical School.

The corps, as at present constituted, consists of 445 in the medical corps, eighty-nine in the medical reserve corps (active list), and sixty in the dental corps. By rank, and under command of Brigadier General Gorgas, there are fifteen colonels, twenty-four lieutenant colonels, 105 majors, 169 captains, and 280 first lieutenants. There are also over 1,200 first lieutenants of the medical reserve corps on the inactive list. The army is commanded by a physician. Major General Leonard Wood, Chief of Staff, entered the service in 1886 as an assistant surgeon after graduating from Harvard Medical School, and became a captain in 1891. He was serving in that grade in 1898, when appointed colonel of the First U. S. Cavalry (Rough Riders), of which regiment Theodore Roosevelt was lieutenant colonel. In two months he was a brigadier and five months later a major general of volunteers. The manner in which he displayed his genius as a sanitarian in ridding Havana of yellow fever and in cleaning up Cuba is a matter of history. As a reward General Wood became a brigadier general in the permanent establishment in 1901, and a major general two years later. In 1910 General Wood became Chief of Staff.

Every section of the country is represented in the medical corps. From Maine to California and from Minnesota to Louisiana come these well equipped officers, but the majority are graduates of colleges east of the Mississippi. Indeed, a large percentage received their medical training east of the Alleghanies.

In writing on this topic, in 1907,[1] we noted that the alumni of the University of Pennsylvania headed the list, with the University of Virginia second, and George Washington-Columbian third. In the medical corps of 1914, the Washington institution passes the University of Virginia, the mother of army surgeons, and assumes second place, Virginia dropping to fourth, behind Jefferson, which seven years ago was in fifth place.

The different colleges with their graduates in the medical corps and the medical reserve corps are as follows:

University of Pennsylvania	54
George Washington-Columbian	44
Jefferson	41
University of Virginia	28
University of Maryland	20
University of Michigan	17
College of Physicians and Surgeons of Columbia University	16
New York University and Bellevue Hospital	14
Georgetown, Rush, and Harvard	13 each
University of Buffalo, Medico-Chirurgical, Johns Hopkins, and Tulane	11 each
Northwestern, Vanderbilt, and Washington	8 each
St. Louis University	7
Yale and Medical College of Virginia	6 each
Physicians and Surgeons of Baltimore, Detroit College of Medicine, Miami, Creighton, Tufts, and Physicians and Surgeons of Chicago	5 each
University of California, University of Cincinnati, University College of Richmond, Starling, Baltimore Medical, University of Iowa, Louisville Medical, and Barnes	4 each
University of Illinois, Medical College of Ohio, University of Texas, Atlanta College of Physicians and Surgeons, University of Louisville, and Syracuse	3 each

These institutions are each represented by two alumni: Dartmouth, University of Minnesota, Bowdoin, Albany Medical, Kansas Medical, St. Louis Medical, South Carolina Medical, Kansas City Medical, Western Reserve, Marion-Sims, Kentucky School of Medicine, Medical College of Indiana, Beaumont, and the Universities of Kansas, Vermont, and Nashville.

There is one man from each of these three colleges: Long Island College Hospital, Trinity (of Toronto), Drake, Physicians and Surgeons and University Medical, of Kansas City, Hering, American Missionary, Maryland Medical, Ohio Medical University, Central Physicians and Surgeons, of Indianapolis, Birmingham, Central, of Kentucky, Memphis Hospital, Southern, Cooper, McGill, Michigan College of Medicine and Surgery, Physicians and Surgeons, of Cleveland, Chicago College of Medicine and Surgery, Missouri Medical, and the Universities of Georgia, Kentucky, Boston, Missouri, Arkansas, Tennessee, the South, and Southern California.

In addition, eight officers have taken the degree of M. D., from two colleges and these have not been included in the foregoing totals. The institutions are: Medical College of Virginia and Columbia (Colonel W. D. McCaw); Detroit College of Medicine and Jefferson (Lieutenant Colonel M. W. Ireland); Bellevue and University of Pennsylvania (Lieutenant Colonel G. D. Deshon); University of

[1] New York Medical Journal, October 26, 1907.

Virginia and Columbia (Lieutenant Colonel C. C. McCulloch, Jr.); Rush and Northwestern (Captain R. S. Porter); Universities of Alabama and Buffalo (Captain E. G. Bingham); University of Virginia and Physicians and Surgeons of Baltimore (Captain L. J. Owen); Baltimore Medical and Johns Hopkins (Lieutenant M. H. Bowman, M. R. C.).

Only two officers hold foreign degrees, Major R. V. Patterson from McGill and Lieutenant E. H. Webster, M. R. C., from Toronto.

In the dental corps are two medical graduates, from the University of Maryland and National University respectively. These dental schools are represented: University of California, six; Universities of Michigan and Maryland, Indiana Dental, Chicago College of Dentistry, and Baltimore College of Dental Surgery, two each.

These each have one graduate: Universities of Iowa and Buffalo, Vanderbilt, Northwestern National, Washington, Columbian, Ohio Medical University, Boston Dental, Missouri Dental, American College of Dental Surgeons, and Baltimore College of Dental Surgery.

The names of many medical officers are found on the retired list, including these brigadier generals: George M. Sternberg, B. T. D. Irwin, C. T. Alexander, A. A. Woodhull, C. C. Byrne, W. H. Forwood, T. E. Wilcox, A. C. Girard, and E. B. Moseley.

While some of the retired surgeons do not specify their medical alma mater, these institutions are represented on the lists:

Columbia	11
University of Pennsylvania, Bellevue Hospital, and Jefferson	6 each
New York University and University of Virginia	5 each
Columbian	4
Harvard and University of Maryland	3 each
Yale, Albany, and University of Michigan	2 each
Georgetown, Miami, Rush, Vanderbilt, Johns Hopkins, Medico-Chirurgical, Missouri Medical, St. Louis Medical, and the Universities of Kansas, Nashville, and Vermont	1 each

Many of the officers hold two or more degrees. General Gorgas is A. B., University of the South; M. D., Bellevue, and D. S., University of Pennsylvania. Lieutenant Colonel C. C. McCulloch, Jr., graduated A. B. from Baylor University, Texas, in 1885. He received the degree of C. E. from the Texas Agricultural and Mechanical College in 1890, and a Ph. D. from Baylor in 1891. In the latter year he was given the degree of M. D. by the University of Virginia and the next year the same degree was conferred on him by Columbia University.

Colonel John Van R. Hoff, retired, holds five degrees: M. D., Albany Medical College and Columbia; A. M., Union College, and LL. D., Bucknell and Union Universities.

Major W. J. L. Lyster is a Ph. D. of the University of Michigan, an M. D. of the Detroit College of Medicine, and a Doctor of Public Health of the University of Pennsylvania.

Captain E. G. Bingham is a loyal alumnus of the University of Alabama, holding three of its degrees. He first obtained an A. B. in 1898. Three years later he graduated in pharmacy and in 1902 took the M. D. degree. Later he obtained an additional M. D. from the University of Buffalo.

Captain C. D. Cowles, Jr., received the arts degree twice from Guilford College and the University of North Carolina, before graduating in medicine from Johns Hopkins.

Captain L. L. Smith is a civil engineer from Princeton and Major H. G. Shaw, Major James M. Phalen and Lieutenant A. P. Clark graduated in pharmacy before studying medicine.

Captain J. L. Shepard is the sole representative of the legal profession in the medical corps having taken his LL. B. from the University of Wisconsin, in 1890. Later on he studied medicine. Lieutenant E. F. Haines, M. R. C., Boston University, 1906, is the only homeopathic graduate on the active list. Chaplain W. T. Anderson, retired, was a graduate of the Cleveland Homeopathic College, but his army activities were spiritual rather than medical.

The *Register* reveals some interesting changes in the careers of men. Lieutenant Colonel George D. Deshon offers an example. He graduated from Dartmouth, in 1883, as a Bachelor of Arts. Apparently he was appointed to West Point during his senior year in Hanover, for he finished at the Point in 1886 and became a subaltern in the Twenty-third Infantry. He found time to study medicine and resigned from the army March 21, 1890, and received his M. D. from Bellevue Hospital in June of the same year. He again took up an army career as an assistant surgeon in May, 1892, and received a second M. D. from the University of Pennsylvania, in 1893.

The oldest medical officer in the army in years and in point of service is Colonel L. Mervin Maus, chief surgeon of the Eastern Department, stationed at Governor's Island, N. Y. He entered the service November 10, 1874, at the age of twenty-three years. It is to be noted that two members of the corps have received the much coveted Medal of Honor: Major Paul F. Straub and Major James R. Church.

The medical men in the service are not confined to the medical corps. There are no disciples of Æsculapius among the engineers, ordnance, field artillery, or signal corps, but they are found in other branches. In the Quartermaster Corps is Dr. George H. Penrose, University of Buffalo, 1886. He entered the volunteer service from Utah, in 1898, as a brigade surgeon with the rank of major and served in that capacity until 1901, when he was appointed a captain of quartermasters. He became a major in 1909.

In the cavalry there are two physicians serving as line officers. Captain D. T. E. Casteel, University of Maryland, 1885, has apparently had no medical military experience. In the Spanish war he was colonel of West Virginia Infantry Regiment and, in 1899, became a captain of volunteer infantry. In 1901, he was commissioned a first lieutenant in the cavalry and since 1909, has been a captain in the Sixth.

The other medical cavalryman is First Lieutenant Rodman Butler, an alumnus of the University of Pennsylvania. He enlisted as a private in the Third Cavalry, in 1898, and served as private and corporal

until 1901, when he was commissioned as second lieutenant in the Sixth. He was promoted in 1907.

In the infantry Captain Ralph H. Van Deman upholds the dignity of the profession. He graduated from Harvard in 1888, and became a second lieutenant in the Twenty-first Infantry in 1891, and has been with that organization since. While stationed at Fort Thomas, Ky., he studied medicine at Miami and received the degree of M. D. in 1893. He has not actively practised his profession, however. Captain Van Deman was a member of the general staff from 1906 to 1910.

Two captains of the coast artillery are doctors of medicine. Captain Russell P. Reeder, a graduate of Miami, started his military career as captain and adjutant of the First Ohio Infantry in the Spanish War. The next year saw him in the permanent establishment as a second lieutenant of infantry. In 1901 he was transferred to the artillery as a first lieutenant and has been a captain since 1905.

Captain George L. Hicks, Jr., who claims the University of Maryland as his medical alma mater, entered the volunteer service as assistant surgeon of the First Maryland Infantry in 1898. The next year he occupied a similar position in a volunteer regiment and when mustered out, in 1901, he was a major. He then became a first lieutenant of artillery and received his captaincy in 1907.

The retired list shows some interesting men, who, though physicians, had no medical connection with the army. Colonel W. H. Comegys, a graduate of Miami and an ex-intern of Cincinnati Hospital, became a major of paymasters in 1881, and, in 1906, was made assistant paymaster general with the rank of colonel. He retired three years ago.

Another practitioner who gave up medicine to enter the service is Lieutenant Colonel Valentine McNally. He took his medical degree at Georgetown, in 1867, being honored by his alma mater with an A. M. in 1869, and an LL. D. in 1889. He practised medicine until 1882, when he was appointed ordnance store keeper with the rank of captain. He retired in 1903 as a lieutenant colonel and has since practised in Washington.

Two retired officers were attracted by medcine while serving as infantry officers. Brigadier General Charles A. Coolidge was an infantryman in the Civil War and became a second and first lieutenant in 1864. While serving with the Seventh Infantry he studied medicine at the University of Wooster, later known as the Medical Department of Ohio Wesleyan University, and took his M. D. in 1873. He reached the grade of brigadier general in 1903.

The other officer, First Lieutenant William N. Williams, entered the volunteer service as a private, in 1861, and became a first lieutenant of volunteers. In 1867 he was appointed a second lieutenant of infantry and was retired in 1878 for disability in line of duty. Then at the age of forty-one years he commenced the study of medicine at the College of Physicians and Surgeons, Keokuk, Iowa, and graduated in 1882. He has since followed his profession in Indianapolis.

Major General F. C. Ainsworth, New York University, 1874, entered the army as an asistant surgeon in 1874 and became a major in 1891. The next year found him chief of the record and pension office as a colonel and later on a brigadier general. As military secretary he was made a major general. A consolidation of departments promoted General Ainsworth to adjutant general. At the time of his retirement in 1912, the army had as its ranking officers two physicians, who entered the service as assistant surgeons, and had forged their way to the top, Major General Leonard Wood and Major General F. C. Ainsworth. This remarkable circumstance will not likely occur again.

A careful study of the personnel of the medical corps reveals the fact that it is composed of medical men of the first rank, who are always "there" when needed.

THE PSYCHOPATHOLOGY OF THE NEW DANCES.*

By A. A. Brill, Ph. B., M.D.,
New York,
Chief of Clinic on Psychiatry and Clinical Assistant in Neurology, Columbia University.

So far as the present dancing mania has been transmitted from individual to individual, and is continually spreading, we are justified in designating it as a psychic epidemic. Psychic epidemics similar to the present are well established facts and are often met in history. To the active psychiatrist they need no further explanation. We have all studied cases of *folie à deux* and we can thus readily understand how such psychic processes may be projected from one individual to another, until a whole locality, or a country is affected. Witness, for example, the different crusades to the Holy Land, and similar smaller religious and secular movements. Nor is our present dancing epidemic new to history. For centuries dancing manias broke out in different countries, and although they were not as widespread as the present one, they aroused as much, if not more, attention. There seem to be, however, some differences between the old dancing manias and the present one. In the first place, most of the old epidemics were tinged with religion: they were done for the glory of God. As examples of the more important dancing epidemics we may mention those of Aachen (1374) and Strassburg (1518); in the latter epidemic the dancers could be cured only through a pilgrimage to the shrine of St. Vitus. Secondly, the old epidemics were more violent as to consequences; many dancers were kicked to death when they fell from exhaustion, and the epidemics were confined to one particular region. The present dances, as all are aware, are not at all connected with any religion, nor are they confined to any special locality. Everybody, almost the whole world, is dancing the new dances.

Now let us examine this strong worldwide movement which started in our United States about two years ago, and spread like wildfire over the whole civilized world. We all know the importance it has assumed in the family and society. It is no exaggeration to say that the greatest part of our city population may be divided into two classes, those who are dancing and those who are looking

*Submitted to the Volunteer Club, February 25, 1914.

on and are enjoying the sight. The majority approves, while some seem to object. Thus even crowned heads felt obliged to issue edicts against it. The importance of this epidemic is also seen by the fact that even the Pope, according to the press, has seen fit to denounce it, and offer a less objectionable substitute, and that most religious teachers of all denominations have seen fit to condemn it. Yet this epidemic does move on, and from all indications, is becoming more popular. Wherever one goes, be it to public restaurants or to private houses, regardless of the time of day, one is sure to be greeted by the familiar strains of the modern dances. Beside *thés dansants* and the continuous dancing at night some restaurants are also offering *déjeuners dansants*. About one thing there is no doubt, and that is that the great majority, rich and poor, insist upon dancing the new dances, all objections to the contrary notwithstanding.

Now, what is the cause and significance of this psychic outbreak? Before answering these questions, it will be best to hear what some authors have to say concerning the subject of dancing in general. Havelock Ellis,[1] who has studied the subject more deeply than any one else, shows conclusively that even the old dances were nothing but manifestations of the sexual instinct. To quote his words: "In civilization it (dancing) is not merely an incitement to love, but very often a substitute for the normal gratification of the sexual instinct, procuring something of the pleasure and relief of gratified love. This may be especially seen in young women who will very often expend a prodigious amount of energy in dancing, thus procuring not fatigue, but happiness and relief. It is significant that after sexual relations have begun girls generally lose much of their ardor in dancing. Even our modern orthodox dances, it is interesting to note, are of sexual origin. Thus, the most popular dance of all, the waltz, was originally (as Schaller, quoted by Groos, states) the closing of a complicated dance which "represented the romance of love, the seeking and the fleeing, the playful sulking and shunning, and finally the jubilation of the wedding."

E. Fuchs[2] states that like the song and adornment, the dance is an erotic bait, and that no matter in what form, it was never anything but an eroticism transformed into rhythm representing loving, courting, hesitating, promising, and yielding. Indeed, all observers come to the same conclusion.[3] They all maintain that dancing serves a sexual purpose, not only among civilized beings, but also among primitive people, animals, and birds. In brief, the general conclusion is that the object of the dance is to produce a state of tumescence. That the new dances serve the same purpose need hardly to be mentioned, for it is well known that this forms the chief objection to them. Those who oppose them call them indecent, suggestive, and sexual. But then, it must be remembered that the orthodox waltz met with no less opposition when it first came into existence. It also was objected to because it was considered indecent, and no less a person than Byron expressed his indignation in this poem:

> Waltz—waltz—both legs and arms decamp.
> Liberal of feet, and lavish of her hands,
> Hands which may freely range in public sight,
> Where ne'er before—but pray—put out the light.

The objection to the old dances, or to dancing in general, has never entirely disappeared. Many religious denominations always objected to every form of dancing. In view of what has been quoted from Ellis and others, their objections are justified.

However, when one compares the waltz to the new dances, one is bound to admit that there is a great difference between them. Both in form and execution there is something "wild and emotional" in the turkey trot, while the waltz appears perfectly proper and conventional. I have asked many intelligent people, dancers, to tell me the difference between the old and the new dances, and their answers were practically the same as that quoted above. They all considered the new dances, with the accompanying music, wild, stimulating, and emotional, and that was the only reason why they preferred them to the waltz. Such statements seem very strange. Here we are living in a most advanced epoch, and people of culture and intelligence frankly assert that they are "just crazy" for something because it is primitive. Is not this a state of retrogression?

With the object of throwing some light on the subject, I visited some dancing places. I must say that I soon became a very interested spectator, and convinced myself that my friends and patients were right when they designated the dances as wild and emotional; but I could also see what they did not express, namely, that the new dances offered more muscular exertion, more contact, and more motion. In other words, I could see that the new dances offered a better opportunity for tumescence than the older dances. The question then occurred to me, was this perhaps the reason for the popularity of the new dances? And following the principle whatever is must have a reason, I asked myself, Does this psychic epidemic, afflicting thousands, satisfy a certain need? It was no difficult matter to conclude that the dances were manifestly erotic, hence the nature of the emotional discharge, the gratification, was quite evident. But as the orthodox dances are of the same nature and serve the same purpose, it was a question whether there was any inherent difference between the reactions of the new and old dances. In other words, was it true that the new dances acted more forcibly as an incitor of gross sexual feelings.

To answer this question I decided to send out the following *questionnaire* to a few hundred enthusiastic dancers: 1. Did you ever become sexually excited while dancing the new dances? 2. Did you ever become sexually excited while watching the new dances? 3. Did you ever experience the same feelings while dancing or watching the old dances? I put these questions to my friends and patients, and requested them to collect this information for me from their intimate friends who could be relied upon to tell the truth. After a few months I had received answers from 342 persons, 119 women and 223 men. Of these, fourteen men

[1] *Analysis of Sexual Impulse*, p. 45.
[2] *Illustrierte Sittengeschichte*.
[3] Confer also Scheuer. Die Erotik im Tanze. *Sexualprobleme*, January, 1911.

and eight women answered "yes" to the first question, sixteen men and nine women answered "yes" to the second question, and eleven men and six women gave an affirmative answer to the third question. The sixteen men and nine women who gave an affirmative answer to the second question, included also those men and women who gave the same answers to the first and third questions. That is, only sixteen men and nine women showed manifest sexual excitement while dancing or watching the new dances, and of those twenty-five persons, nine men and six women recalled similar experiences with the old dances. Six of the men and all the women are known to me personally, so that I can say that they are very hyperesthetic sexually. Three of these men show somatic sexual excitement while automobiling or riding a bicycle or on horseback, the others belong to those individuals who revel in smutty jokes and pornographic literature. Five of the women were between the ages of thirty-five and forty-three years, and for various reasons, were suddenly deprived of all normal sexual outlets. In other words, as far as could be discovered from the collected data, one cannot say that the new dances are more prone to produce sexual excitement than the old ones, and by sexual excitement we understand gross sexual manifestations. As far as the esthetic emotional feelings are concerned, there is no doubt that the new dances act more forcibly and stimulatingly—nearly all my informants felt this.

It is interesting to note that the onlookers furnished the greatest percentage of those who experienced somatic sexual feelings. Even if we confine ourselves to normal persons we must admit that the sight of dancing is pleasurable. Thus Havelock Ellis states,[4] "not only is dancing an excitation, but the spectacle of dancing is itself exciting, and even among savages dances have a public which becomes almost as passionately excited as the dancers themselves." This state of affairs is epecially true concerning the new dances, which by virtue of novelty and suggestiveness invariably produce some excitement in the spectators. And while the act of dancing produces a certain amount of detumescence in the dancer, the mere onlooker perforce remains in a state of appetence, which in hyperesthetic people may lead to somatic sexual feelings. This accounts for the fact that most of those who object to the new dancing have only witnessed it, but never danced themselves; the spectacle produces a certain amount of sexual feeling which is immediately repressed, and as a defense mechanism there results a strong outburst of indignation. This is naturally an unconscious process. It also explains such cases as that of my friend, S., who last year railed against the new dances because he thought them lewd and indecent, and bewailed the fact that some of his friends were dancing them. During his summer vacation he contracted the fever and himself became a great enthusiast. He assured me that in spite of all suggestion he never was conscious of the slightest sexual feeling while dancing. In fact, very few dancers are cognizant of anything but a sense of exhilaration and well being. With the exception of those mentioned, all the women informants assured me that despite all the suggestive remarks they had heard about the dances, they were never aware of any sexual feelings while dancing. It is but fair to mention that all my informants belong to the cultured class. There is no doubt that the closer contact in these dances offers an opportunity to those individuals who look for sex everywhere. Thus, some of my informants reported that occasionally they became cognizant of gross sexuality owing to some action of their partner. But this might happen and has undoubtedly happened even before the new dances came into vogue. In brief, the question whether the new dances act as gross sexual incitors can be emphatically answered in the negative. In spite of the suggestive remarks and allusions, it affects only those who are very abnormal sexually, or who deliberately seek gross sexual excitement in dancing.

If we investigate still further the mechanism of dancing, we find that basically it is nothing but a form of motion. Thus Stoll[5] speaks of the dance as a rhythmical movement of the body which is performed to the accompaniment of some musical measures, and serves to express, in more or less conventional form, certain affects and emotions. But it is well known that motion in any form gives pleasure. The infant loves to kick and move his arms, and when once rocked to sleep he will never peacefully renounce this pleasure. Children are very fond of play involving any form of motion, like swinging or flying in the air, and the shaking sensations experienced in riding exert a fascinating influence on older children.[6] That motion is related to sex and may sometimes even be connected with gross sexuality is well known to students of abnormal psychology. Psychanalysis often shows that in neurotics those infantile pleasures are often repressed and changed into the opposite, and we then have nausea as reactions to rocking and rolling. Moreover, analyses of neurotic disturbances of walking, such as agoraphobia, show beyond any doubt the sexual nature of motion pleasure.[7] I have analyzed many cases which showed these mechanisms to a remarkable degree. In brief, we may say that motion pleasure is an autoerotic sexual manifestation, and as motion is the basis of dancing, we can readily see why all observers recognize the sexual element in all forms of dancing. We can now understand the significance of dancing in general, and of the new dances in particular. They both serve as an outlet for sexual tension, and differ only in degree. By virtue of more contact, and more muscular exertion, the new dances offer a greater substitute for the normal gratification of the sexual instinct, and thus procure more pleasure and relief of gratified love than the old dances. This brings us to the cause of this psychic epidemic.

Thanks to the genius of Freud, we are now in position to state that abnormal manifestations, whether in the form of a neurosis or psychosis, are all the result of former mental and emotional repressions. The subsoil of psychic epidemics shows similar mechanisms. Thus, the dancing epidemics of

[5] *Das Geschlechtsleben in der Volker psychologie*, p. 581.
[6] *Three Contributions to the Sexual Theory*, p. 54.
[7] Freud, *loco citato*, p. 55.

the twelfth and thirteenth centuries were the result of the tyranny of the feudal system and the church, which for a long time kept the people in an oppressed and wretched state, allowing them no outlet for their emotions. Our present dancing epidemic is fundamentally due to similar causes. It, too, is a result of repressed emotions and feelings, and judging by the nature of the manifestation it must be concluded that it is sexual repression which has broken through. Puritan prudery and Anglo-Saxon hypocrisy have for centuries acted the part of the ostrich and refused to acknowledge the existence of the sexual impulse. Ignorance was confounded with innocence, and the most important functions of the human body were not only ignored but relentlessly debased. The very thought of sex was considered evil and disgusting. To a certain extent this also held true of continental Europe, but there it never attained the extreme degree it has in this country and England. It is for this reason that Europe is much slower to take up the new dances. The women are the most eager dancers because they have been carrying the heaviest burden of our system of cultural development. The double standard of morality allows the men some sexual outlet, while feminine virtue is treated as the foolish peasant treated his valuable fur in the market. He was not content to sell it for the high prices offered by the merchants because he thought that he could make more money by tearing out the hairs from the skin and selling them singly. The continual advance in Anglo-Saxon civilization with its complex economic problems is marked by a steady increase in frigid women and old maids. Sublimation is not only carried to an enormous degree, but the women are also forced to take up academic and other work and compete with men. Religion, the emotional outlet *par excellence* for women, has been rapidly disappearing. There are almost as many irreligious women in England and America as men. Decadence of religions means an increase in nervous diseases. These causes have been operating for a long time, and as some adjustment had to take place England gave us the suffragette and America the new dances. Both have emotional and economic reasons, but both serve a good purpose. Suffragism and the dancing epidemic are to sex repression what the *Horminga brava* or fire ant is to the boll weevil. The former may not in itself be desirable, but must be cultivated because it destroys a greater evil. Suffragism and the new dances are both compromise formations brought about by the two opposing streams, desire and repression, and serve as a safety valve for repressed tension. In continental Europe, where there is not so much prudery and where women are not forced to be men, both may be dispensed with. There the new dances are only slowly progressing, and only a few days ago a woman was convicted of libel in Germany for applying the term suffragette to another woman.[8] Here the new dances represent a substitute for the normal gratification of the sexual instinct in the form of pleasure motion. They are, in a way, comparable to the sports which are utilized so much in Anglo-Saxon countries in order to turn away the youth from sexual activity, and to the characteristic forms of amusements offered at our summer resorts. They all serve to replace the sexual pleasure by motion pleasure, and force back the sexual activity to some infantile components.

Viewed in this light the modern dances must be considered beneficial to our present social system. They are as soothing to the populace as rocking is to the infant. Indeed, I have lately seen about a dozen nervous cases which were very much helped by the new dances. Thus, I can mention the case of a very hypochondriacal middle aged woman who was massaged for years, four times weekly, with very little benefit, who now dances instead as many times a week with great benefit and enjoyment. I know two timid and shut in persons who were completely changed by the new dances. They no longer fear to meet persons of the opposite sex and are thinking seriously of matrimony. I also heard of a young widow who evidently suffered from a state of anxiety with phobias, who was "very much benefited" by joining a dancing circle. I could mention more cases from my own experience and from those of others. Moderate dancing, old or new style, can only do good and should be encouraged. I absolutely disagree with those who assert that it does harm, that it promotes sexuality, and so on. My own experiences (I do not dance) taught me just the opposite. The new dances offer good exercise and enjoyment to thousands of people, and serve besides as an excellent sublimation.

As for the moralists and others who think differently of new dancing, let them remember what Lucan said: *Quicquid multis peccatur, inultum est.*

55 Central Park West.

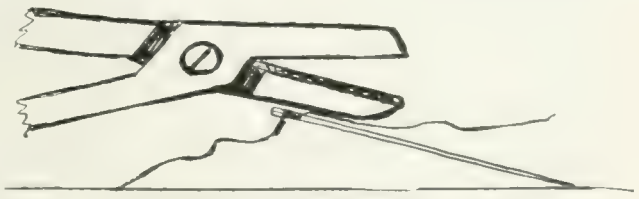
[8] Lest there should be some mistake, I hereby acknowledge my adherence to suffragism.

A MAGNETIZED NEEDLE HOLDER.

Preliminary Report.

By Cheney M. Stimson, M. D.,
Philadelphia,
Assistant Demonstrator of Gynecology, Jefferson Medical College.

For a long time I have been impressed with the usefulness of an instrument which would lessen the time lost in handling the surgical needle and in locating needles or pieces of needles in the course of operations. With this object in view I



studied the possibility of a magnetized needle holder and found that on this principle a very practical instrument can be constructed. At present I am using successfully an ordinary needle holder which I have had magnetized: this instrument overcomes many of the handicaps of the nonmagnetized holder.

An ordinary magnet has sufficient strength to pick up half a dozen needles, and the jaws of an

ordinary needle holder have enough surface to afford magnetic power sufficient to pick up any ordinary surgical needle, and particularly pieces of needle which have been dropped in the field of operation. The fact that the instrument is magnetized will in no way interfere with its usual value.

I submit this preliminary report because this principle can be applied to any needle holder and render it a much more efficient instrument for most work. It is not so much a question of the shape of the instrument as it is the proper magnetization. Any hard steel instrument can be magnetized simply by placing it on a dynamo and allowing it to remain for three or four hours. Its magnetic power is not affected by heat or moisture.

1801 Cayuga Street.

DANGEROUS MEDICAL LEGISLATION.

A Timely Warning to the Medical Profession.

By Charles F. Pabst, M. D.,
New York,
Associate Dermatologist, Brooklyn Hospital and Dispensary.

Physicians themselves are to blame if laws are passed by the legislature crippling the usefulness of their prescriptions, and unjustly limiting the qualified practitioner in the application of his art. In every State there is an increasing tendency toward the legislative control of the practice of medicine, and it is high time that physicians were aroused from their apathetic condition, and the medical profession seriously considered the situation now confronting it. The so called Naturopaths and Chiropractics who have sprung up like mushrooms, are striving to obtain the privileges of medical practice without first acquiring a medical education They have everything to gain and nothing to lose, yet physicians stand by and idly watch these medically uneducated usurpers fighting for rights belonging exclusively to the medical profession. A bill endowing these new sects with practically all the authority of a licensed physician has just passed the Senate and Assembly of New York State, and is now awaiting the signature of Governor Glynn; it will require vigorous action, at this eleventh hour, to induce the Governor to veto this pernicious measure.

Consider for a moment the requirements of a "Doctor of Chiropractic." The advertisements brazenly announce that you will be quickly taught by mail, no matter what your age or occupation may be; the course is cheap and requires only your spare time. Chiropractics define their methods as a "drugless healing science of spinal adjustment," and inform you that it is a tremendous opportunity to bid farewell to long hours, hard work, and a nagging boss. This advertisement brands them for what they are, yet the medical profession, because of inaction and indifference, allowed the bill which was introduced, to pass the Legislature of New York State! The Naturopaths also, state in their prospectus that no entrance examination or special requirements are necessary. In the March issue of their magazine, *The Naturopath*, most of the space is devoted to a bitter attack on the medical profession, and almost nothing is said in support of naturopathy. This clearly shows their line of reasoning, and indicates the grade of intellect which they appeal to. The discovery of vaccination by Jenner, in 1796, stands out in history as one of the most beneficent gifts ever bestowed upon mankind, yet this publication asserts that vaccination is "the greatest menace to public health. and should be prohibited by law." Diphtheria antitoxin is called a farce, and the vials of serum are compared to a tropical snake whose bite is sure death. It seems incredible that the bill which these naturopaths introduced, and which is printed in the March number of *The Naturopath* should have passed the New York State Legislature! Many physicians, when asked to oppose this bill, declared that definite action was unnecessary as the bill would never pass. Their mistake is now only too apparent, yet there are many more sad surprises in store for the medical profession if important matters of legislation continue to be neglected.

When a bill is introduced in the Legislature, it is referred to a certain committee, and a day is set for the hearing. How many physicians know what a hearing of this kind means to them? It means that an opportunity is offered to those who oppose a bill to voice their objections and suggest amendments, and that those who favor the measure should be represented in order to protect their interests and defend the bill against unjust attacks by the opposition. If this opportunity is neglected, it is no time to complain after a measure has become a law, and since physicians usually begin to protest about the time a law goes into effect, it is not to be wondered at that the commercial world smiles at the medical man's lack of knowledge regarding the simplest rules of legislation.

For the past year I have urged the necessity of a law regulating the sale and manufacture of bichloride of mercury, and for that reason I went to Albany and addressed the Senate Codes Committee at a hearing which was held on the bichloride bill. Not one medical society was officially represented. A dozen energetic physicians were on hand, simply as individuals, and if they had not been present, no one would have answered the charge which was made by a drug representative, accusing physicians of being the cause of the majority of bichloride deaths by leaving loose bichloride tablets at the homes of patients.

When a measure is introduced relating to the medical profession, the senators naturally expect that physicians will be present at the hearing to suggest necessary amendments. If representatives of the medical societies fail to appear, it places the profession in a bad light before our own legislators. There is but one way to meet this new condition of affairs. Every medical society should maintain a well paid, and efficient legislative committee, which should receive the active cooperation of every member. Physicians will then become interested and informed upon the important subject of legislation, thereby conserving the interests of the medical profession, and at the same time keeping in line with the march of progress.

306 Franklin Avenue, Brooklyn.

Abstracts and Reviews.

THE TRANSPLANTATION OF ORGANS.*

By Alexis Carrel, M. D.,
New York.

During the last few years it has been definitely established that autoplastic transplantations of organs are practically always successful; that homoplastic transplantations, although the immediate results may be excellent, are nearly always ultimately unsuccessful, and that heteroplastic transplantations are always unsuccessful.

Autoplastic transplantations of the kidney were performed with complete success in 1908. At the Rockefeller Institute both the kidneys of a dog were extirpated and one kidney was replanted. It was found that in most cases the animal remained in excellent health. Microscopical examination of the kidney showed that it was entirely normal. By the aid of this and other experiments of the same character it was definitely proved that the extirpation of the kidney, its perfusion with Lock's solution, the complete interruption of its circulation for fifty or sixty minutes and the suture of its vessels and ureter did not interfere with its functions. It showed that from a purely surgical standpoint the grafting of the organ was a possibility.

Homoplastic transplantations made with exactly the same technic gave very different results. During the first days following the operation the dogs, which had undergone a unilateral nephrectomy and the transplantation of one kidney from another dog, were in the same condition as dogs which had undergone an autoplastic transplantation, that is, they were apparently normal and there was no albumin in the urine. After six or seven days the results became different. Albumin appeared in the urine and the kidney became congested. After twenty-five or thirty days and more there was a great deal of albumin, and in one case even hematuria. After seven or eight months the albumin disappeared, but the kidneys were found to be in a sclerotic condition. When the animals underwent a bilateral instead of a unilateral nephrectomy they always died after a few weeks. A few of these animals were in a promising condition of health twenty or twenty-five days after the operation, but none of them lived longer than thirty-six days. One died of acute calcification of the arterial system. The kidneys of these animals were apparently normal for a few days; after two or three weeks the kidneys were congested and edematous, and after a few months they were sclerotic and atrophied. In cats which underwent the transplantation in mass of the kidney the lesions of the organ after about eight days were not marked. There was a rich infiltration of small round cells or an increase of connective tissue around the vessels and the collecting tubules. The secretory tubules were often remarkably well preserved and there was no increase of connective tissue around them. In the glomeruli the capillary loop was normal and the capsule was not increased in thickness. In several cases there were marked lesions of diffuse nephritis.

The examination of animals which have undergone homoplastic transplantations of kidneys has shown that for about seven days the condition of these organs was normal. After a period varying from about six to seven days, albumin appeared in the urine and the organ became edematous and congested. In many places of the gland there were leucocyte infiltrations. These phenomena occurred with great regularity and were more marked in dogs than in cats. Nevertheless, after homoplastic transplantations of the thigh or of the scalp it was found that in a few cases the reaction of the organism against the organ did not take place. In one case of transplantation of the scalp and ear and in two cases of transplantation of the leg the member did not become swollen, and after more than twenty days the new parts, which had healed by first intention, were in such a condition that it was impossible to believe that they were not the real property of the animal. These three cases were far the best we observed, but it was found equally that these three animals presented a general infection. The animal with the transplanted scalp and ear had a pyemia, which developed after the occurrence of a deep abscess around the auditory canal, and the two other animals presented diffuse pneumonia. General infection in the animals seemed thus to prevent the reaction of the organism against the new organ, and it was supposed that the occurrence of this phenomenon was more than a coincidence.

A very important study of this same question has lately been made by James B. Murphy, of the Rockefeller Institute, who was brought to consider this matter by his experiments on the heteroplastic transplantation of tumors. Doctor Murphy, while transplanting pieces of rat tumor to chick embryos, observed that this tumor was able to develop normally and could be transplanted from egg to egg for a very long period of time. But if the chicken was allowed to grow, the tumor always disappeared at a certain period in the life of the animal. As soon as the chick was hatched the resorption became more rapid and two days after hatching the tumor had completely disappeared. It was evident that at a certain period in the life of the chick a new function developed which gave the organism the power of eliminating a foreign tissue. But it was found that in the cultures where spleen and bone marrow had been added and were growing actively, the fragment of tumor did not grow at all. It thus appeared probable that the presence in the culture of spleen and bone marrow prevented the development of the tumor. Doctor Murphy then controlled these results by means of experiments of another kind. On chick embryos he grafted pieces of rat tumor and at the same time pieces of a number of adult chicken organs, such as spleen, kidney, liver, bone marrow, etc. While the tumor grew very rapidly on the chick fetuses to which it had been grafted, alone or together with chicken kidney, liver, or connective tissue, it was found to grow but very little or not at all when pieces of spleen or of bone marrow were grafted on to the fetus. Thus it appeared probable that it was the action of the spleen and of the bone marrow which allowed the

*Summary of an address read before the [illegible] Congress of the International Surgical Association, New York, May, 1914.

organism to fight efficiently the foreign tissue which had been transplanted to it.

Doctor Murphy next attempted to discover how a homoplastic or heteroplastic graft could be made to develop indefinitely on its host. In these new experiments he grafted on to rats a mouse tumor which had never taken on rats previously. He extirpated the spleen from the rats and observed that the mouse tumor could grow actively on these rats for twelve or thirteen days, that is, longer than on the controls; at the end of that time the tumor became absorbed. Next, he studied the effect of benzol, which has the power of diminishing the activity of leucocytes. In rats injected with benzol he found that the duration of the life of the mouse tumor was longer and that resorption did not occur before fifteen days; but although the results were positive the action was too small to be of any use. It is certain that a very important point has been acquired with Murphy's discovery that the power of the organism to eliminate foreign tissue was due to organs such as the spleen or bone marrow, and that when the action of these organs is less active a foreign tissue can develop rapidly after it has been grafted. It is not possible to foresee whether or not the present experiments of Doctor Murphy will lead directly to the practical solution of the problem in which we are interested; but it is certain that he has contributed a very important step toward this solution. It is not impossible that by using Murphy's or some other method it will be possible regularly to obtain the excellent results which we have observed in animals which presented a general infection. The surgical side of the transplantation of organs is now completed, as we are now able to perform transplantations of organs with perfect ease and with excellent results from an anatomical standpoint. But as yet these methods cannot be applied to human surgery, for the reason that homoplastic transplantations are almost always unsuccessful from the standpoint of the functioning of the organs.

Rockefeller Institute.

Therapeutic Notes.

Treatment of Gastric Ulcer.—M. Loeper, in *Progrès médical* for October 4, 1913, states that in cases of gastric ulcer in which there is a high degree of intolerance of food, intense pain being usually awakened when anything is ingested, sugar is in many instances the best nutrient available for oral use. Pavloff has shown that sugar does not excite gastric secretion, and it is also known that sugar, introduced into the stomach, passes out from it very rapidly—much more rapidly than even light soups, meat jellies, and especially milk, which leaves the stomach only an hour or more after ingestion. Sugar is moreover a readily absorbable and combustible food; 3.5 ounces (100 grams) of it supply 400 to 500 immediately available calories, or as much as 1¼ quart (1,300 grams) of skimmed milk, six eggs, etc. A patient who had lost 5 kilos. in weight in six days on a diet of milk and starchy products began to gain when an equivalent (only 400 calories) amount of sugar was given. Urine analyses in both man and dogs showed that sugar spares the protein constituents of the tissues better than other carbohydrates, and also spares the fats.

To the author's patients sugar was given in the amount of about 3.5 ounces (100 grams) per diem, either in a simple syrup or in various fruit syrups, together with fruit jellies (15 grams four or five times a day), lemonade or orangeade, fresh grape juice, etc. In previously very intolerant cases, all gastric pain, nausea, and vomiting disappeared, and the body weight, as already noted, began to show a gain. In a few instances, slight fermentative disturbances were induced, but these were only exceptionally such as to inconvenience the patient. In view of the low percentage of mineral constituent supplied in the sugar diet, it may be advantageous, Loeper points out, to give the patient also a few powders of sodium and calcium phosphates.

The exclusive sugar diet should not be continued longer than five or six days, as it affords material only for immediate combustion and not for tissue repair. As soon as the gastric condition permits, the amount of sugar should be diminished and a few light articles of food substituted, e. g., carrot or arrowroot bouillons, potato soup, sweetened albumin water, milk soup or diluted milk, later undiluted milk, pastes, meat jelly, fresh fish, and white meats.

Treatment of Supplementary and Vicarious Menstruation.—P. Emile-Weil, in *Journal de médecine de Paris* for July 26, 1913, reports four cases in which menstruation was accompanied by bleeding from the nose and gums or purpura, as well as two cases of true vicarious menstruation. Describing the treatment, he advises that the patient be required to stay recumbent from the beginning of each period until at least one day after the bleeding has entirely ceased. Hot injections should be given morning and evening throughout, and constipation carefully avoided by giving mild laxative drugs or small enemas. In severe cases he injects five drachms (20 c. c.) of horse serum subcutaneously on the second day of menstruation, while in less pronounced cases the same amount of serum is administered by rectum on the second, third, and fourth days. This measure can be resorted to every month without inconvenience. In certain cases, he has applied a wad of gauze dipped in serum directly to the cervix, often with immediate arrest of the hemorrhage where hemorrhage has existed (though at times the bleeding was increased). In grave cases he now administers whole blood secured from the vein of a relative of the patient.

To prevent the return of pathological hemorrhage at the regular monthly intervals is difficult. Thyroid organotherapy, beginning with small doses such as three fourths grain (0.05 gram), later to be increased, should be tried, though in the author's experience it has not proved very effectual. In several instances, on the other hand, mammary and pituitary medication was observed to produce a favorable effect on the hemorrhage. Iron, arsenic and other tonics should also be prescribed.

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EDITORS

CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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THE PHILADELPHIA VIVISECTION TRIAL.

Philadelphia medical circles were stirred this week by a ruling handed down by Judge Bregy in the trial of Dr. Joshua E. Sweet and five associates, Dr. Alfred N. Richards, Dr. Allen J. Smith, Dr. Richard Mills Pearce, Dr. Alonzo Englebert Taylor, and Dr Edward T. Reichert, all distinguished members of the medical faculty of the University of Pennsylvania, in an action instigated by the Women's Society for the Prevention of Cruelty to Animals. The physicians were not accused of actual cruelty in experimental work, but of having failed, after the animals had been returned to their cages for observation, to give them proper medical attention, appropriate food, and suitable resting places. Although the keeper of the animal houses had been used as a spy by the women, nothing definite was brought out at the trial which, to any fair minded person, could in any way militate against the accused physicians. The ruling, however, by what amounts practically to a misinterpretation of the existing law in respect to cruelty to animals, virtually removed the judgment from the hands of the jury when the judge said to its members: "I charge you that the law of Pennsylvania does not allow pain or suffering, torment or torture to be inflicted upon dogs for any purpose other than the relief of the suffering of the dog itself. They have no right under the law to torture dogs for the purposes of obtaining scientific information. The law, as I have read it to you, says that persons who wantonly torture animals shall be guilty of crime. The law does not say that they shall not be guilty if they do it for scientific purposes. Scientific purpose does not excuse cruelty." This obviously means, if "cruelty" is interpreted from the viewpoint of the ignorant antivivisectionist, that experimentation involving the use of laboratory animals is an offense under the statutes of Pennsylvania. It is deemed by surgeons to wreck all future progress in surgery in that State. If "a man cut off the hoof of a well horse to ascertain how the horse would act, the intention he had in his mind would not relieve him of responsibility for the cruel act," held the learned judge. Physicians, according to press interviews, urge that all progress in medicine will also be halted absolutely in Pennsylvania, that rational therapeutics, hygiene, and all that goes to the saving of life, as illustrated by the multitude of discoveries based on animal experimentation, will find their doom if such a conception of the law is allowed to prevail.

It appears to us that a calm analysis of the question will soon show that there is but little ground for anxiety. We have used the word "misinterpretation" purposely in the earlier portion of this editorial article to emphasize the weakness of the edifice which Judge Bregy is attempting to erect. We would, indeed, do an injustice to his intelligence were we to doubt for one instant that he knows that equitably interpreted, the law he cites, which was created for brutal drivers, cruel urchins, etc., can have but an extremely limited application. Were it applied strictly, as he interprets it in fact, he himself would soon be in the clutches of the law. The latter refers to "animals" in the generic sense; consequently it applies to all animals. Is it for the "relief of the suffering of the animal itself" then that the terrapin, the lobster, the crab—which the learned judge doubtless enjoys—is thrown *living* into boiling water or allowed to "heat up" to the boiling point? Is it for their relief that the squabs, the chickens, the lambs, the beeves, and other animals from which the judge's table is supplied, are slaughtered—unanesthetized, if you please—to say nothing of the game and fish, some of which he and his family doubtless consume, which are "wantonly" sacrificed each year? Nor could we consider as relief for the tortoise, the excruciatingly painful heat to which its shell is exposed to facilitate its removal. That the clubbing to which thousands of young seals are subjected each year cannot be re-

garded as beneficial to these innocent and kindly animals can hardly be gainsaid. Briefly, wherever we turn we find man "guilty of crime" under the Statutes of Pennsylvania as they are interpreted by Judge Bregy so far as food, dress, ornamentation, sport, and the almighty dollar are concerned; yet all these derelictions would be overlooked, while the guilty under the law would be those only whose purpose in life is to reduce the suffering of mankind!

Fortunately there are higher tribunals where sit men who will realize the absurdity of the situation created by Judge Bregy.

SEPTIC SORE THROAT.

That the universally used milk is the carrier of much disease is no longer an open question. So much is this settled that legislation has everywhere attempted to control the sale of milk as it has of no other food product. The diseases of prime economic import carried through milk are typhoid fever, tuberculosis, diarrheal diseases, diphtheria, scarlet fever. To this list has now been added septic sore throat, a disease of severe sudden onset, and rather short duration. With the possible exception of typhoid fever the milk source of no other disease has been so well demonstrated. In the Boston epidemic the disease was traced to one particular dairy herd, and almost to a particular cow. In the New York epidemics similar results followed investigation.

Such epidemics demonstrate that eternal vigilance is the price of safety. Merely seeing that sanitary environments are furnished, that routine tuberculin tests are applied, do not constitute cures for the milk evil. The many diseases to which an animal is subject make it primarily the source of infection, and this element of infection must be reduced as much as possible by periodical examination of the animal for all diseases and not merely for certain diseases. Epidemics of septic sore throat can be traced to udder infections. In the Boston epidemic the disease was traced to a dairy where the sanitary arrangements were the best, and to certified milk in which the bacterial inhabitants were fewest.

The question of a pure milk supply is of growing importance, and a problem of vast magnitude. After all, it is an economic problem in which a pure milk supply represents a great expenditure of money, both by producers and consumers. But this must furnish no excuse for the relaxation in pure milk legislation. Cleanliness, unlike filth, represents energy. Cleanliness is effort, but also progress. In the matter of clean milk supply the initial cost of introduction is large, but the subsequent cost much smaller. Against the cost of epidemic the cost of cleanliness must sink into insignificance.

When the milk supply is spoken of, the milk products must also be included, since they represent usually a higher degree of contamination than the antecedent milk. The process which lays stress on the milk and ignores the milk products, is a makeshift at best and all products therefrom must be viewed with suspicion. The remedy for the milk problem lies in specialization and centralization; only in this way will it be possible to have a large initial expenditure for plant and equipment and a smaller operating cost.

PATHOGRAPHY OF AN EMINENT COMPOSER.

Next to Mozart's *Figaro*, the *Merry Wives of Windsor*, of Otto Nicolai, of Königsberg, is usually regarded as the best of the German comic operas, that is, of those which are remarkable for sprightliness and grace. The early death of the talented Nicolai at the age of thirty-nine years was a great loss to modern German art, and the circumstances which led up to it have been made the subject of an interesting study by Dr. F. Michelsen, of Danzig, based upon the composer's diary (*Münchener medizinische Wochenschrift*, LX, 1777, 1913). Nicolai was a man of delicate appearance and fragile constitution, but possessed of the ardent temperament common to musicians of talent, a temperament which continually exposed him to the accidents of sensual indulgence. He worked hard, was a very popular director at Vienna and Berlin, and was much sought after as a teacher of music, but his many exposures to venereal infection and the poor therapy of the time, upon which Doctor Michelsen throws much light, made short work of him. He himself records in his diary that he had passed through two attacks of gonorrhea, and, in October, 1846, he was infected with lues. Living in Vienna at this time, he consulted the famous Hebra, then a docent of dermatology at the University, whom he scores severely for "driving the poison into his system" by giving nothing but external treatment for a month. This statement, as Michelsen observes, is that of a layman, ignorant of the course and usual treatment of syphilis. Nicolai was devoted to homeopathy; yet it was the theory of the time that to drive off an external affection by an external remedy would be followed by disease of an internal organ, a theory which Hebra himself exploded by his exact observations and experiments. Under the influence of Skoda's therapeutic nihilism, Hebra is said to have actually feigned that he was giving treatment in some cases

in order to prove that his patients could get well without it, and, in any case, his advances in therapeutics were confined mainly to the surface of the body. Poor Nicolai enlarges upon the terrible fever and headache and the eruption over his whole body which followed three months later. He tried Ischl and Salzburg, the sulphur baths at Baden bei Wien, and the cold water cure at the hydropathic establishment at Gräfenberg, which exhausted his funds and did him no good whatever. Having given up his engagement in Vienna, he could not earn a penny, and he growled over his course of treatment at Gräfenberg.

Nicolai again coquetted with homeopathy, and the usual remissions of the attack of the disease enabled him at last to get back to his director's desk. But on November 29, 1846, after the closing chord of Beethoven's ninth symphony, which he was conducting, he collapsed. A visit to Reichenhall and Berchtesgaden gave a lift to his spirits and here much of the charming opera of the merry wives was conceived or composed. It is certain that the ever popular overture was written a few weeks after a severe relapse of his trouble, in the autumn of 1847. He was plagued with the disease for the rest of his short life, got some good from the sea baths at Wangeroog, but, on May 11, 1849, he was found dead, lying face downward on the floor of his house. The fact that the body was covered with blood led to an autopsy at which it was found that there was a ruptured aneurysm of the basilar artery. Nicolai did not even live to see his opera printed, and the first four performances which he personally directed, were only a *succès d'estime*. Another disappointment caused by the malignant malady was the prevention of his marriage to a highly gifted opera singer to whom he was deeply attached. Certainly a sad ending of a brilliant career! In closing, Michelsen raises the question whether the early deaths of certain composers of the classical and romantic period may not have been due to other causes than the *Nervenschlag, Nervenfieber*, etc., usually assigned.

HOSPITALS AND COMMERCE.

Need a hospital be hospitable in the strict and etymological sense of that word? Or should it be something of a hotel, more or less commercial, with a select class of patrons, under the care of fashionable physicians and surgeons whose fees correspond with those of the paid nurses, cooks, stewards, and others who comprise its staff of servants who come to their daily tale of work in a hard, mechanical spirit? There are hospitals of both classes; those which are truly hospitable to all sufferers, rich and poor alike, and those whose hospitality is purely mercenary and measured by the purse and not by the need of the patient. In the truly hospitable hospitals, physicians and surgeons freely give services that are invaluable. In the mercantile hotels for the sick, the question of fees is too often a dominant factor, and the success of the institution is recorded in the ledger, not in the case reports.

But true success in medicine is not measured by bank accounts. History shows that the most considerable men in medicine were abstemious in money getting. Sydenham, Stokes, Laennec, and Virchow had more time for science because they took less time for the consideration of fees. This cannot be mere fortuitous coincidence; beyond doubt overindulgence begets plethora and the doctor's art becomes corrupt. The abuses possible in calling in one of the hospitable "set" of doctors may be made evident by a few examples. For instance, it is alien from the proper function of a hospital to make a patient pay in advance for his room. He may be too ill to transact business, or should he be able to leave the hospital in a few days, the question of refunding some of the money may be a source of trouble. In addition, the patient must pay the fees of his physician, who is seldom exigent, and the fees of the attending hospital doctor, who is seldom anything else. Pretentiousness of mind must be expected from a man brought up in a selfconscious position; it must be some time before he works clear of the conditions imposed upon him by commercial ostentation. To this insidious power must be attributed the prices that patients have to pay in some hospitals, where rooms cost thirty-five dollars, fifty dollars, and even one hundred and twenty dollars a week. An affair of domes and vast central wells, with its hotel charges and tips, is as alien to a true hospital as is its reproduction of the hotel air of service and "hustle." It matters not what kind of doctor is pressed into the service of this new commerce of medicine. If he is a part of such a system he must follow the methods of the system. It is even charged that there is a tendency to keep the rich patient in the hospital after he is well, and to discharge the poor patient too soon. It seems somewhat unfortunate that the one term "hospital" should be made to apply to such a wide variety of institutions. It should be restricted to those institutions which are hospitals in the fullest sense of the word, hospitable alike to rich and poor. The mercantile hotel for the sick, with its high fees, its tips, and its hotel service should be given some other and distinctive name, for it is not in the strict and etymological sense of the word a hospital.

A CORRECTION.

Owing to an unavoidable misunderstanding of some alterations in the proof of the original communication from Dr. Parker Syms in our issue for April 18th, two errors of statement crept into the text. On page 761, first column, seventh line from the bottom, 1905 should be 1902; on the same page, second column, tenth line from the top, 1906 should read 1904.

POPULAR INFORMATION REGARDING TYPHOID FEVER.

While the hanging card of information, advice, and instructions regarding cases of typhoid fever, issued by the Department of Health in connection with the supervision of that disease, is entirely satisfactory for its purpose, namely for distribution among families in which there are cases of typhoid fever, the criticism has justly been made that it is too long to serve as a warning to the general public and will not be read by the "man in the street." According to the department's *Bulletin* for April 25th, therefore, condensed instructions as to how the disease may be avoided have been prepared. They will be printed in four languages, English, Italian, German, and Yiddish, on a cardboard folder of convenient type to be carried in the pocket. The first edition will consist of 200,000 copies, which will be distributed throughout the tenement house sections of the city by the nurses, inspectors, and sanitary policemen of the Department of Health, and through the mail to private nursing associations and the large charitable organizations. Two large life insurance companies have agreed to help distribute this circular. This will be continued throughout the summer, so that by the time the usual seasonal exacerbation of the disease occurs in August, the desired information should have been fairly well distributed.

News Items.

The Rockefeller Institute for Medical Research has recently received an additional endowment of one million dollars from Mr. John D. Rockefeller.

Los Angeles Obstetrical Society.—This society was formally organized on Wednesday, March 25th, with a membership of forty-seven. The society is limited to fifty members, and already there is a waiting list. The officers are: President, Dr. Titian J. Coffey; secretary, Dr. George F. Malsbary.

Medical Hall in Savannah.—A home for the Georgia Medical Society was opened in Savannah on March 31st, when the keys of the building were delivered to Dr. J. L. Jackson, president of the society. The home is situated at 612 Dayton Street and contains an assembly hall, a laboratory, and a library.

Tennessee State Medical Association.—The eighty-first annual meeting of this society was held in Memphis on Tuesday, Wednesday, and Thursday, April 7th, 8th, and 9th, under the presidency of Dr. W. D. Haggard, of Nashville. The following officers were elected: President, Dr. S. M. Miller, of Knoxville; vice-president, Middle Tennessee, Dr. Hillard Wood, of Nashville; East Tennessee, Dr. J. M. Clack, of Rockwood; West Tennessee, Dr. Samuel T. Parker, of Lexington; secretary, Dr. Olin West, of Nashville; treasurer, Dr. C. N. Cowden, of Nashville. Next year's meeting will be held in Nashville.

A Million Dollar Endowment Fund for Wesley Hospital, Chicago.—Announcement is made of a gift of $1,000,000 to Wesley Hospital, Chicago, by James Deering. The gift is an endowment fund to the hospital, and is to be used exclusively for the care of charity patients. In accepting the gift the trustees voted to change the name of the institution to the Wesley Memorial Hospital.

New Medical Society in Chicago.—The Cook County Medical and Surgical Society was organized in Chicago, Thursday, April 9th, with 150 members. The following officers were elected: President, Dr. W. B. Schussler; first vice-president, Dr. Samuel McWilliams; second vice-president, Dr. George Cushing; secretary, Dr. J. J Roach; corresponding secretary, Dr. C. A. Simmons; treasurer, Dr. John Bennett.

American Society for Physicians' Study Travels.—The first tour of this society will be made immediately after the close of the coming meeting of the American Medical Association, starting from Atlantic City on June 26th. The complete itinerary may be obtained from the secretary, Dr. Albert Bernheim, 1225 Spruce Street, Philadelphia. Early bookings through the secretary are urged, in order that satisfactory accommodations may be secured for all who desire to participate.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, April 27th, Section in General Medicine of the College of Physicians, and North Branch of the County Medical Society; Tuesday, April 28th, Medicolegal Society and the West Philadelphia Medical Association; Wednesday, April 29th, Mount Sinai Hospital Clinical Society; Friday, May 1st, Kensington Branch of the County Medical Society and Southeast Branch of the County Society.

The Value of Animal Experimentation in Diseases of Children.—On Tuesday evening, May 5th, a special public meeting will be held in Philadelphia, in the College of Physicians Building, under the auspices of the Philadelphia Pediatric Society, for the purpose of discussing the value of animal experimentation in the diagnosis and treatment of disease in children. Its value in diagnosis will be discussed by Dr. Alfred Hand, Jr., and in treatment, by Dr. Henry Dwight Chapin, of New York.

Sixty-two Additional Vaccination Stations in New York.—The Department of Health has arranged to have vaccination performed daily in all the children's clinics of the department, also on two days of each week at each infants' milk station. In each instance, a notice will be placed in the window of the station or clinic, calling the attention of the public to the fact that free vaccination may be obtained. This action will create sixty-two offices of the Department of Health, where vaccination may be obtained free of charge.

Resolutions on the Death of Doctor LeFevre.—The Society of the Alumni of Bellevue Hospital has learned with the deepest sorrow of the death of Egbert LeFevre, M. D., Sc. D., LL. D., one of its founders and former president and for twenty-eight years a loyal and active member. The peculiar friendship existing between the members of this society renders his loss an especially personal one Doctor LeFevre was held in high esteem because of his wide range of knowledge and unusual ability as a diagnostician and therapeutist. He gave liberally of his time and talents to the uplifting of the profession and to the advancement of medical education, and was universally respected because of his inflexible integrity and high professional ideals. The society mourns his loss and extends to his family sincere sympathy in their bereavement.

The Death of Dr. R. L. Parsons.—At a meeting of the New York Neurological Society, held in the Academy of Medicine, March 3, 1914, Dr. Theodore H. Kellogg was appointed to draft a memorial of Dr. Ralph L. Parsons, who died in his home at Ossining, February 26, 1914, and the obituary resolution thus prepared was unanimously approved as follows:

Resolved, That the New York Neurological Society has learned with regret of the death of Dr. Ralph Lyman Parsons, one of its oldest and most respected members, who for many years in charge of public hospitals for the insane, as well as in private and sanitarium practice, rendered faithful and valuable medical services. That worthy recognition is also here recorded as to his contributions to the literature of his specialty of psychiatry.

Resolved, That this memorial notice be entered on the minutes of this society, and that a copy of the same be sent to the family of the deceased and to the *Journal of Nervous and Mental Disease*.

Complimentary Clinical and Operative Facilities.—Members of the New York State Medical Society during their stay in New York are invited to take advantage of the facilities of Dr. A. L. Soresi's laboratory for surgical research at 32 West Seventieth Street. On April 28th from 9 to 11 a. m., on April 29th and 30th from 2 to 6 p. m., and on May 1st and 2d from 9 to 12 a. m. and from 2 to 6 p. m. there will be demonstrations of several new surgical procedures. To members of the association who may be interested facilities will be offered to perform any of these new procedures in which they would like to take part. All members will be welcome, no cards of admission being required. There will be demonstrations on the following:

1. A modification in the technic of gastroenterostomy.
2. Grafting of ileum into the colon.
3. Transplantations of different parts of alimentary canal.
4. A new technic for side to side intestinal anastomosis.
5. Doctor Soresi's technic for end to end intestinal anastomosis.
6. Resuscitation of animals lifeless from acute hemorrhage.
7. Rational treatment of severe hemorrhage.
8. Doctor Soresi's technic for blood transfusion.
9. A new technic for anastomosis of bloodvessels.
10. A new technic for the preparation of the surgeon's hands.
11. Transplantation of ureters into the jejunum.

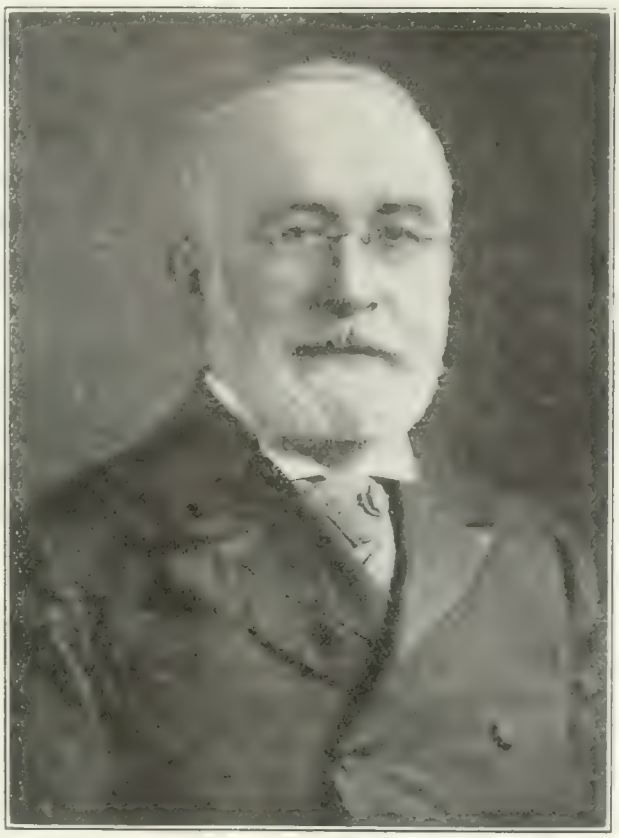
To avoid the presence of curiosity seekers members of the New York State Medical Society are requested to present their membership cards.

Personal. — Dr. C. St. Clair Drake, of Chicago, has been appointed secretary of the Illinois State Board of Health, to succeed Dr. J. A. Egan, who died about a year ago.

The degree of doctor of science will be conferred upon Sir William Osler, Sir E. A. Schäfer, and Professor E. H. Starling by the University of Cambridge, on the occasion of the opening of the new physiological laboratory on June 9th.

Dr. Raymond Foss Bacon has been appointed director of the Mellon Institute for Industrial Research of the University of Pittsburgh, to fill the vacancy caused by the recent death of Dr. Robert H. Duncan. Doctor Bacon was formerly associate director of the institute.

Medical Society of the County of New York.—A stated meeting of this society will be held on Tuesday evening, April 28th, in Hosack Hall, New York Academy of Medicine. Dr. Douglas Bissell will present a paper on the Surgical Replacement of the Prolapsed Kidney, illustrated with lantern slides. Dr. Lewis S. Pilcher will, by invitation, open the discussion of this paper, and Dr. Arnold Sturmdorf and Dr. Arthur L. Fisk will participate. Motion pictures and lantern slides will illustrate a paper on a New Operative Treatment for Spastic Paralysis, to be presented by Dr. William Sharpe. Patients will also be exhibited. Dr. Benjamin P. Farrell will discuss postoperative treatment, and points regarding anesthesia will be taken up by Dr. Charles S. Hunt and Dr. Russell A. Hibbs. An invitation is extended to the members of the Medical Society of the State of New York to attend this meeting.



W. W[illegible] M.D. [illegible], president of the Fifth International Surgical Congress.

Medical Society of the State of New York.—The 108th annual meeting of this society will be held in New York during the five days beginning Tuesday, April 28th, with headquarters at the Hotel Astor. An excellent scientific programme has been arranged by the committee on scientific work, of which Dr. Thomas J. Harris is chairman. Dr. George W. Crile, of Cleveland, will deliver the Oration on Surgery on Tuesday morning. The scientific work of the society has been provided for in sessions of the several sections, which will be held on Tuesday afternoon, Wednesday morning, and Thursday morning, at the Hotel Astor. Clinics will be held at the various hospitals throughout Greater New York on the afternoons of Wednesday and Thursday and the morning and afternoon of Friday and Saturday. The ladies will participate in the annual banquet, which will be held at the Hotel Astor, on Wednesday evening, April 29th, and application for seats should be made to Dr. Charles H. Richardson, chairman of the committee, 17 West Forty-third Street, New York. On Thursday afternoon, April 30th, the Quarantine Station on Staten Island and the public institutions of the Department of Health on East River will be visited. A commercial exhibit has been arranged on the eighth floor of the Hotel Astor, which will be open on Tuesday, Wednesday, and Thursday.

The officers of the society are: President, Dr. William Francis Campbell, of Brooklyn; first vice-president, Dr. W. Stanton Gleason, of Newburgh; second vice-president, Dr. G. F. Blauvelt, of Nyack; third vice-president, Dr. Myron B. Palmer, of Rochester; secretary, Dr. Wisner R. Townsend, of New York; treasurer, Dr. Alexander Lambert, of New York. Chairmen of Sections: Medicine, Dr. Charles Stover, of Amsterdam; Surgery, Dr. Lucius W. Hotchkiss, of New York; Eye, Ear, Nose, and Throat, Dr. Thomas H. Halsted, of Syracuse; Gynecology and Obstetrics, Dr. Ross McPherson, of New York; Pediatrics, Dr. Thomas S. Southworth, of New York.

New London, Conn., Medical Association.—At the 123d annual meeting of this society, which was held in New London on Wednesday, April 1st, under the presidency of Dr. W. Henry Gray, the following officers were elected: President, Dr. Anthony Peck, of Norwich; vice-president, Dr. E. P. Douglass, of Groton; clerk, Dr. Leon F. LaPierre, of Norwich; councilor, Dr. Patrick J. Cassidy, of Norwich; delegate to State society, Dr. George Thompson, of Taftville; censors, Dr. E. P. Douglass, of Groton; Dr. John G. Stanton, of New London; Dr. R. W. Kimball, of Norwich; committee on public health and legislation, Dr. Rush W. Kimball, of Norwich; Dr. H. M. Lee, of New London; Dr. J. J. Donohue, of Norwich.

Mortality Statistics of New York.—During the week ending April 18, 1914, there were reported to the Department of Health of the City of New York 1,566 deaths from all causes, with a death rate of 14.63 in a thousand of population, compared with 15.22 for the corresponding week in 1913. An increased mortality was noted from the following causes: Diphtheria and croup, whooping cough, influenza, bronchitis, lobar pneumonia, pulmonary tuberculosis, and violence. Almost all other causes showed a decreased mortality.

Pith of Progressive Literature.

ZEITSCHRIFT FUR UROLOGISCHE CHIRURGIE.

Insufficient Ureteral Orifice.—A. Barbey grouped cases under three headings; first, those in which the mucous membrane and musculature of the ureteral orifice are destroyed by inflammation; second, those in which the mucous membrane and musculature of the ureteral orifice are intact, but become infiltrated and rigid and cannot close; third, those cases of nocturnal incontinence in children in which there is no inflammation and the ureteral orifice is normal. This last class is an elementary form of spina bifida occulta with defects in the spinal column, causing sensory disturbances, etc. The symptoms of insufficient ureteral orifice are pain in the kidney region on urination, pollakiuria, and incontinence. The author has a number of radiographs in which collargyrol has been injected into the bladder and shows in the ureter and kidney pelvis.

Diagnosis and Treatment of Kidney and Bladder Tuberculosis in Their Incipiency.—H. Wilbolz describes the different symptoms by which we can recognize early tuberculosis of the kidney and bladder. One of the cases was that of a patient who had albuminuria and polyuria, voiding daily two to 2.5 litres. The bladder was entirely normal; the kidneys were normal microscopically and functionally and guineapig inoculation for tubercle bacilli was negative. A year and a half later, the patient came back with an incipient kidney tuberculosis. The blood pressure is of certain diagnostic value. If we exclude parenchymatous nephritis we can make a diagnosis of tuberculosis of the kidney on the three symptoms, albuminuria, polyuria, and a normal blood pressure. In seventy-eight per cent. of all cases, tubercle bacilli can be found in the urine. He calls attention to the tuberculous bacilluria which occurs in many cases of lung tuberculosis. The diagnosis of kidney tuberculosis can be made only when tubercle bacilli come from that kidney and the kidney has a plainly decreased function. The author has treated thirteen of the foregoing cases of incipient tuberculosis with tuberculin; in only two of these cases was the tuberculosis bilateral. In six cases the tuberculin was used for more than a year, and in two cases four years. In none of these thirteeen cases, notwithstanding that they were incipient tuberculosis, was there permanent improvement. Eight of the thirteen patients were later nephrectomized. Two of the remaining subjects died in the course of two years, and three are living yet. The urine has always contained pus and tubercle bacilli.

PARIS MÉDICAL.

Contraindications to Prostatectomy.—F. Cathelin enumerates these as follows: 1. Prostatitis of urethral, gonococcal origin in young patients; massage, dilatation, hot rectal irrigations, and suppositories should alone be resorted to. 2. Prostatic and periprostatic congestion, the result of exposure, alimentary or sexual excesses, retention of urine, etc., demands in such cases rest in bed, small hot enemas, permanent catheterization, and daily irrigations with silver nitrate solution under pressure. 3. Retention of urine in the presence of a small prostate without intravesical median lobe; Rochet's operation of vesical plication, often unexpectedly cures these cases, the prostate not being itself responsible for the retention. 4. Prostatic tuberculosis; prostatectomy would leave residual tuberculous tissue, or if the entire genital tract were removed, a dangerous sinus; such cases, moreover, never have complete retention, and the disease is slow and well localized in the perineal region. 5. Prostatic cancer, the author holds, cannot be cured, even by early operation; the x rays, or better, radium should be used. 6. The so called "armored prostate" described by Legueu and Cathelin, sometimes termed inflammatory pericystitis, but better, pelvic prostatoperitoneal ligneous phlegmons. In these cases rectal examination reveals a hard subvesical plaque of tissue.

Hyperchlorhydria of Biliary Origin.—L. Plantier is convinced, from clinical observations, that hyperchlorhydria is in some instances due to disturbed biliary flow. Boldyreff has shown experimentally, moreover, that the pancreatic juice cannot pass into the stomach after a meal rich in fats unless bile is freely entering the intestine. As the pancreatic juice is the most strongly alkaline of the intestinal fluids and practically alone regulates gastric acidity, imperfect bile flow, causing exclusion of pancreatic juice from the stomach, will also result in excessive gastric acidity. In all hyperchlorhydric patients the liver should be examined, special attention being paid to the cystic point of tenderness in the standing posture. Where the biliary function is at fault, treatment directed toward restoration of the flow of bile into the intestine will cure the hyperchlorhydria, as Plantier had occasion to observe clinically. In doubtful cases, treatment for gallstones should be tentatively applied.

PRESSE MÉDICALE.

Rhachitis in the Offspring of Thyroidectomized Rabbits.—H. Claude and J. Rouillard report abnormalities of development observed in successive litters from a pair of rabbits both thyroidectomized shortly before the first copulation. Of the first litter of eight, four died rather suddenly about the twentieth day with abdominal distention. The remainder, apparently normal up to the fifth week, then exhibited marked apathy and somnolence, muscular weakness, distention, and finally diarrhea. Three soon died, weighing only about as much as controls. The eighth rabbit showed temporary digestive disturbance, then grew normally. The second litter, born ten weeks later, showed a similar arrest of development, and but one survived. At autopsy the ductless glands were found practically normal. The osseous system, however, showed changes precisely corresponding with those of human rickets, including the rhachitic rosary, marked lengthening of the distal, radial, ulnar, and tibial cartilages, scoliosis, curved sternum, rudimentary scapular spines, humeral curvature, con-

tracted pelvis and cranium, with marked vascularity of the cranial bones, malformed teeth, and thickening of the epiphyses in general. The microscopic bony changes were also similar to those seen in human rickets. In a few cases there were added a slight rarefying osteitis or bone hyperplasia, and in the second litter, changes suggesting a mild degree of achondroplasia. The parent animals exhibited no signs of myxedema, aberrant mediastinal thyroid tissue doubtless not having been removed. The authors believe the changes observed in the offspring can be attributed mainly, if not wholly, to the parental thyroidectomy, and lay stress upon parental thyroid insufficiency—probably due to previous infections or intoxications—as a cause of rickets in human offspring.

March 25, 1914

Carriers of Amebic Dysentery.—L. Landouzy and R. Debré report the case of a man thirty-eight years of age, born and passing his entire life on canal barges in the north of France. A diagnosis of hepatic cancer was made, and the true condition, amebic dysentery with hepatic abscess, not recognized until the autopsy. The condition had remained practically latent, the only phenomena noted being relatively mild digestive disturbances, hepatic enlargement, hemoglobin in the stools, and progressive cachexia. There had been no fever, dry tongue, hepatic tenderness or pain, cough, or distortion of the liver (though an x ray examination had been made). This man had never left France, nor associated with dysenteric subjects who had returned from tropical colonies. Such a case illustrates the danger from ameba carriers, even in countries of the temperate zone, and suggests keeping in mind the possibility of amebic infection as a cause of hepatic enlargement, the giving of emetine as a therapeutic test, and of conducting a complete examination of the stools (including inoculation of a cat by rectum). Returning colonists should be repeatedly examined for amebic infection, to prevent dissemination of the disease.

SEMAINE MÉDICALE

March 25, 1914

Inferior Cava Pulse in Grave Anemia.—L. Bard observed, in three cases of pernicious anemia, a well marked venous pulse in the inferior vena cava. In two cases the anemia was of puerperal origin and the abdominal wall was relaxed. In one instance even the femoral veins exhibited pulsations; in another, there was no jugular pulse corresponding with the cava pulse, except when the patient coughed. The cava pulse is best recognized by simple inspection, especially in the median line below the umbilicus, somewhat more to the left than the right, and is visible as a double, undulatory rise of the surface in each cardiac cycle. Palpation is negative, and the pulsations disappear when the patient rises from the recumbent to the sitting or standing posture. There is no enlargement of the subcutaneous veins. Tracings of the cava pulse were taken with an oval aluminum cup, eleven cm. long and five wide, placed with its long diameter on a line joining the umbilicus and left femoral ring. The tracings were of manifestly venous origin, and in one instance showed three waves, protodiastolic, presystolic, and systolic in time. These waves were found to occur 0.04 of a second later than the corresponding undulations in the jugular pulse. Bard is led to consider the venous pulse of pernicious anemia analogous to the Corrigan pulse of aortic insufficiency, i. e., it is a phenomenon associated with unfilled veins, while the Corrigan pulse is that of unfilled arteries. Such a condition probably requires both a diminished total volume of blood and relaxation of the venous walls. The venous pulse may be considered a protective measure, enabling the heart to aspirate blood from a greater distance on the venous side. The venous pulse is of prognostic value in anemia, tending to disappear as the condition improves, or, on the other hand, changing from a triple pulsation to a lower, more even, double one, which constitutes a warning of impending cardiac failure.

Horizontal Fracture of the Calcaneum.—F. Lejars reports a case in which a fall on the left foot from a scaffolding resulted in division of the greater tuberosity of the os calcis into two segments. The plane of cleavage was horizontal, and two fingers could be introduced between the fragments, even before incision. The bone was wired, after some difficulty, with aluminum bronze; an excellent functional recovery ensued. Lejars points out, after discussion of a few similar cases previously reported, that the cleavage in such fractures may be either near the upper surface of the bone or at any level below it. Separation, if it exists, is usually marked. As reduction without incision is often practically impossible, wiring is indicated in many instances.

JOURNAL D'UROLOGIE

Encrusted Cystitis.—François describes this condition as a cystitis with ulceration of the mucosa and with phosphatic deposits on the surface of the ulcers. The symptoms are urinary frequency and tenesmus, hematuria, etc. Complications may be bladder retention and infection of the kidney. The author shows a number of cystoscopic views of the condition; it is found as often in men as in women. He explains its occurrence as follows: Acute exacerbation of a chronic cystitis, or very rarely, an acute cystitis attacking a normal mucous membrane, with the production of ulcers. The virulent bacteria of the alkaline urine come in contact with the submucosa, and continue their destructive work. More or less necrosis follows. On the surface of the necrotic tissue phosphates are deposited. Neither syphilis nor tuberculosis seems to play any role in the pathology. The treatment is curettage of the ulcers. The author has found but eleven published cases, of which one ended fatally two months after operation and ten were cured. One of the ten, however, recurred.

Hematuria Occurring in Appendicitis.—Nové-Josserand and Fayol conclude that hematuria not infrequently occurs in the course of an appendicitis. Hematuria occurring in acute appendicitis always appears at the end of or immediately after the cessation of the general symptoms. It is gen-

orally intermittent, of short duration, and marked. Hematuria in chronic appendicitis comes before the time of localization of the pain in the appendix region. It occurs during the general abdominal symptoms, vomiting, constipation, and meteorism. This form is especially hard to differentiate from the hematuria of ureteral stone. In these cases the appendix is generally found posterior and adherent to the ureter. At the point of adherence, there is sometimes slight obstruction to the passage of a ureteral catheter up the right ureter, simulating the obstruction caused by ureteral stone. In the acute forms of appendicitis which are accompanied by hematuria, we find at autopsy an acute congestion of the kidneys. The cause of the hematuria may be the general toxemia or some local condition, as reflex renal congestion, due to irritation of the sympathetic nerves. The hematuria apparently does not affect the course of the appendicitis.

REVUE CLINIQUE D'UROLOGIE.

Periureteral Adenoma.—B. Motz says that Thompson and Launois are wrong in their conclusion that hypertrophy of the prostate is caused by a sclerotic process; it is hypertrophy of the glandular tissue, which causes the enlarged prostate. The hypertrophy has its origin in the periureteral glands, and the true prostate plays no role in the formation of the hypertrophy, but on the contrary is atrophied and forms a pseudocapsule; suprapubic prostatectomy is only the enucleation of a benign periurethral adenoma, and the point of cleavage is between the true prostate and the hypertrophy. The persistence of the sexual function after prostatectomy is explained by the conservation of the ejaculatory ducts.

Treatment of Tumors of the Bladder Especially Papillomas by Electrocoagulation.—Lepoutre and d'Halluin review the literature of high frequency treatment of tumors of the bladder. They have used it in five cases, three of which were cured; in the fourth a recurrence was partially destroyed, and in the fifth the hematuria was checked and also the progress of the tumor. They believe that this method should be used in all benign tumors of the bladder.

Treatment of Vesical Tuberculosis with the High Frequency Current.—Heitz-Boyer reports a case of tuberculosis of the bladder secondary to kidney tuberculosis. The tuberculosis of the bladder refused to heal notwithstanding treatment with antiseptics. The tuberculous area was cauterized with the high frequency current. Following cauterization cystoscopy showed instead of a flat tuberculous ulceration, a growth looking like a villous tumor. Twenty days later normal mucous membrane covered the place formerly occupied by the ulcer.

Multiple Congenital Stricture of the Urethra.—Uteau reports the case of a boy aged sixteen years who had difficulty in urinating. Sounds could not be passed because of a phimosis. The phimosis was operated upon and a filiform bougie could be introduced into the bladder. Two strictures, one at the pendulous portion and one at the perineum, were cut. The patient recovered.

BRITISH MEDICAL JOURNAL

Infection by Bacillus coli in the Puerperium.—H. J. F. Simson and J. M. Bernstein discuss the general phenomena of such infection. The organism found in the urine in such cases may differ in several respects from the same type of organism found in the intestinal tract. Infection may result in one of two ways; either through direct contamination or through a hematogenous transmission of the bacilli. In their opinion the second type of infection is the one which most readily yields to appropriate treatment. They find that the only form of treatment which has given satisfactory results is that by vaccines made from the organism obtained from the individual to be treated. They urge the necessity of treatment as early as possible, and say that it is easy to take a culture, obtain a growth in about ten hours, and have a vaccine prepared in less than twenty-four hours after the taking of the culture. If the vaccine treatment is to be successful the doses used must be rapidly increased and after the condition seems to be cured, the vaccine should be given for several weeks in order to prevent relapse, which is very likely to occur in these infections.

Instrumental Detection of Nasal Obstruction.—Harold A. Kisch says that the relation of chronic nasal obstruction to deafness from Eustachian obstruction and chronic adhesive catarrh of the middle ear, is well recognized, but that it is often a matter of great difficulty to determine in certain cases whether there is sufficient nasal obstruction to account for the deafness. Instruments have been devised for this purpose, but, in his opinion, they are all quite inadequate to the purpose, chiefly because they test only expiratory obstruction and it is inspiratory obstruction which is the causative factor in the production of deafness. He has devised a simple apparatus for the purpose of testing both types of obstruction. It consists of a "straight glass tube of narrow bore, the distal end of which is finely constricted. To the proximal end is attached a rubber tube ending in a broad nosepiece. The glass tube is about nine inches long, and is graduated into arbitrary divisions. A cylindrical glass vessel is required in which water is placed. The tube is immersed until the water in it rises to a mark on the tube, and the water in the tube and outside are brought to the same level. The nosepiece is pressed close to one nostril; the other is closed by the thumb pressed upward from below—not by pressing the ala against the septum. The patient with his mouth wide open sees how much water he can breathe in and out of the tube in five seconds, breathing as hard as he can." With this simple apparatus one can determine the response of a series of normal persons, and can use it to test conditions of nasal obstruction. It also gives the relative degree of obstruction of the two nostrils of the same person. When the amount of water drawn up is decidedly less than the average for normal persons, it may be accepted that there is sufficient nasal obstruction to warrant operative or other treatment for its relief. The use of the

test is of further value, in that it enables the physician to demonstrate to the patient, either that there is no obstruction, when the patient believes that there is, or that obstruction is the cause of his symptoms in a case in which there have been no subjective symptoms referable to breathing.

LANCET.

April 4, 1914.

Uterine Hemorrhage.—H. Beckwith Whitehouse concludes his lecture in this number (see the JOURNAL, page 805) with a consideration of pathological uterine hemorrhage. He says that owing to the variable amount of secretion from the uterine glands we have no means of accurately determining the amount of blood actually lost, except by the presence of clots and by the clinical effect upon the patient. The presence of clots indicates either, that the uterine secretion is deficient in thrombolysin, that there is too much blood present for digestion by the available enzyme, or that the blood escapes from the surface too rapidly for proper contact with the enzyme. The factors for the production of excessive bleeding may be divided into three classes. The first includes those relative to the endometrium. There may be either a diminished thrombokinetic power of the secretion of the endometrium so that there is insufficient clotting of the blood in the mouths of the vessels to check the hemorrhage, or there may be an excess of secretion of thrombokinase with resulting rapid digestion of the clots formed and an opening of the vessels by removal of the closing clots. There is clinical evidence of the occurrence of both factors, and in cases of excessive bleeding an examination of the uterine contents during the bleeding is of the first importance in determining the exact cause of the condition. In this examination one should determine the presence or absence of clots in the vagina; the formation of clots in the fluid after standing; the thrombolytic power of the secretion; its calcium content; and its microscopical characters with special reference to the amount of tissue destruction. The second group of causes relates to the action of the endocrin glands, particularly the ovary. An excessive activity of this gland undoubtedly leads to a hypertrophy of the glandular elements of the endometrium, and this, in turn, to an excess of secretion of thrombolysin. The last group includes those factors which lead to an abnormal degree to pelvic venous stasis. From these considerations the treatment will obviously differ with the cause of the condition. Whitehouse does not believe that the use of the curette has any curative value in the great majority of patients, but it is often of great service in completing a diagnosis. He suggests that in certain cases the removal of a portion of the ovarian tissue is the logical method of treatment, while, in others, the use of thrombokinase, obtained from testicle or endometrium, will be followed by good results. The excessive bleeding so often encountered at the time of puberty or the menopause is probably due to a disturbance in the balance between the several factors in the control of hemorrhage, and seldom needs any treatment.

Causes of Failure in Vaccine Therapy.—W. M. Crofton gives the first cause as an inability of the tissues of the host to respond with the production of antibodies. This may be due to an overwhelming of his tissues by the infection, to advanced age, diabetes, acidosis, chronic nephritis, or cachexia. If the patient is capable of responding, failure may be due to an incorrect diagnosis of the actual infecting organism, or to the use of only one organism in the vaccine when the condition is due to more than one. But the commonest cause is probably the fact that doses are not large enough or properly spaced with relation to the individual patient. In many cases he has found it necessary to give doses of 2,000 to 8,000 million organisms, and has even raised the dose to as high as 30,000 million before he obtained good results. The dose should be repeated, not according to rule, but according to the response of the patient, and it is often possible to give doses at intervals of only one or two days in the beginning, but toward the end of treatment the interval should continually lengthen. None but autogenous vaccines is suitable.

Diagnosis of Pulmonary Tuberculosis.—Alfred C. Jordan's remarks refer only to the diagnosis as made by the ray. He says that by far the most characteristic feature of the x ray picture of early tuberculosis of the lungs is the appearance of mottling; in fact, this is the only truly diagnostic sign. As a result of his long experience with this means of studying early pulmonary involvement, he states that the general clinical conception is incorrect, that the earliest process is usually found in the apex; this is only a later stage of the disease. The disease starts as a diffuse bronchial catarrh, appearing in the x ray pictures as a mottling, which is more or less radial from the root of the lungs, and that it arises in the lungs proper, the involvement of root glands being secondary only. The earliest stage which can be recognized is that in which the bacilli have produced small foci of leucocytic infiltration along the course of the bronchial tree, and at this stage there is no sign of involvement in the apices of the lungs. In normal persons, it is customary to find some degree of radial mottling and some evidence of thickening in the bronchial lymph glands, but this is merely an indication that the patient has successfully overcome an earlier tuberculous infection.

BRITISH JOURNAL OF CHILDREN'S DISEASES

March, 1914.

Unusual Manifestations of Poliomyelitis.—F. E. Batten reports several cases of poliomyelitis that presented unusual symptoms. The first showed athetosis of the left arm and left side of the face, paralysis of the left leg, and some flaccid paralysis of the right leg. The second showed rigid extension of the legs at the hips, the third flaccid palsy of the right arm and left leg, with rigidity of the right leg in a flexed position. The fourth was a case of poliomyelitis of the right arm and left leg that occurred during intrauterine life. The fifth was complicated with ataxia, probably due to involvement of the cerebellum. Two cases are given as evidence that

poliomyelitis may produce toxic polyneuritis; one patient recovered completely under treatment, the other did not.

Tongue Chewing.—Bernard Myers says that tongue chewing is first noticed about the second year of life and persists until middle age, or, perhaps, throughout life. It tends to be less noticeable with advancing years. Either sex may suffer from it. It occurs, apparently, in healthy families in which certain members suffer from habit spasms, and several members of one family may suffer from it. The habit is inherited and not copied. The same side of the tongue is always chewed in the same individual. The mental condition is normal and the general health not interfered with. Bromides stop it, but the habit recommences when they are withdrawn.

BOSTON MEDICAL AND SURGICAL JOURNAL.

April 2, 1914.

Round Shoulders with Short Clavicles.—Augustus Thorndike reports a case in which the clavicles were about an inch too short, thus making the child round shouldered.

Influence of Alkalies upon Gastric Motility.—Maynard Ladd describes the effects of alkalies on gastric motility in infants so far as they can be demonstrated by serial radiographs, a number of which are exhibited. He says that lime water and bicarbonate of sodium unquestionably tend to hasten the discharge of the gastric contents into the duodenum. The most important point brought out is the shortening of the latter half of the digestive period by the use of alkalies. The effect on motility is probably due almost wholly to their action upon the casein curd.

Etiology of Epilepsy.—Arthur Willard Fairbanks holds that heredity is a minor factor in the etiology of epilepsy, and that in the majority of instances the affection is the result of acquired cerebral injury from trauma or disease.

Diagnosis of Enlarged Thymus and the Symptomatology of Hyperthymatism.—Philip H. Sylvester thinks it fair to assume that we should be more on the lookout for enlarged thymus in cases of asthma, persistent bronchitis, and laryngeal or tracheal stenosis. Inasmuch as percussion outlines correspond so closely with those shown by röntgenograms, the enlarged thymus should be detected by the ordinary methods of physical diagnosis. Children with enlarged thymus present two fairly uniform sets of respiratory symptoms: Those due to pressure on the trachea, as shown by cyanosis, slow, labored breathing, and supraclavicular and substernal retraction; those presumably due to toxemia or hypersecretion of the thymus, namely, breathing of the asthmatic type, characterized by fairly easy inspiration and long, difficult expiration, accompanied by rales. Inasmuch as in all the cases treated, the symptoms disappeared when the physical evidences of enlarged thymus disappeared, there is a causal relationship between, 1, the enlarged thymus and the pressure symptoms; 2, the enlarged thymus and the asthmatic symptoms, which were obviously not due to pressure, and therefore probably due to hypersecretion. Pressure symptoms and toxic symptoms may be combined in the same case, but those of the toxic type are more constant.

Treatment of Cervical Adenitis in Children.—W. E. Ladd maintains that of any form of treatment yet devised, thorough extirpation of all infected glands with the primary focus yields by far the highest percentage of cures. Active tuberculosis of the tonsils, in cases of cervical adenitis, is probably far more common than has been supposed. To accomplish a cure by radical surgery requires far less time than by any other means. To avoid unsightly scars, and to insure first intention, the patients should be operated on early, before the glands have broken down. Hygiene has a very important place in the aftertreatment.

Flat Foot in Children.—Albert Ehrenfried says that this diagnosis should not be made inconsiderately. In 327 out of 440 cases, the foot symptoms were secondary to some other condition, which required treatment. Continued observation in many apparently simple cases, showed mild rickets or unsuspected infantile paralysis, less often such conditions as tuberculosis of the knee, hemiplegia, lead, postdiphtheritic, or splastic paralysis. Some are congenital and should more properly be classed with club foot. Some show evidence of muscular insufficiency resulting from physical debility, which is frequently the sequel of an infectious disease. Prophylaxis of foot disabilities consists in combating the two important causes, rickets and the infectious diseases of childhood, both of which should yield to hygiene.

Pyelitis in Infancy and Childhood.—Edwin T. Wyman says that there is practically no danger to life in this condition. With treatment recovery usually occurs in a few weeks, though the condition may persist with intermissions for many months. Alkaline treatment is often sufficient. The urine should be made highly alkaline. If the urine does not clear up under this treatment, hexamethylenamine in doses of one to three grains should be used. If the urine is alkaline, it should be made acid with sodium benzoate or benzoic acid, and then tested for formaldehyde until it is shown to be present, while the dose is increased and irritation of the kidney carefully watched for. If the trouble still continues, large doses of hexamethylenamine may be given, with autogenous vaccines every three or four days, beginning with 25,000,000, and increasing to 160,000,000. The large doses of hexamethylenamine should not be continued for more than a week at a time, but should then be discontinued for several days and started again at the same maximum dose, twenty-five grains daily for a child of six months, twenty-five to forty-five grains daily for a child of from nine to twelve months. The urine should be carefully watched for irritation of the kidney. Local treatment of the bladder is of comparatively no value, as the infection involves the whole urinary tract.

April [illegible], 1914

Seasonal and Meteorological Influence upon Tuberculous Patients.—N. B. Burns observed during the past year in the North Reading State Sanatorium that barometer changes seem to have very little effect upon the symptomatology; that relative humidity of high degree coincide with increased cough and chest discomfort, increased number of

evening fevers, and increased number of bed patients; and that in weather change, from a protracted period of low grass reading, wet and dry, together with high barometer, there seemed in several instances to be small epidemics of streaked sputum and occasional hemorrhages. For seven different days in June the number of evening fevers rose to sixty-five and over, an excessive amount; some reactions were not accompanied with humid weather. A plausible explanation is suggested by the fact that, on several of these days, large numbers of people visited the patients, stirred them with family and other troubles, ran over the grounds, and made hard work and turmoil for all.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

April 11, 1914.

Respiratory Experiments on Man.—Yandell Henderson says that in the training of medical students, experiments on animals, under more or less unnatural conditions, have heretofore been common; on man, properly the chief interest of the physician, relatively little has been attempted. Not the least of recent advances in the field of respiration have shown that, given the ingenuity to devise proper experiments, man himself, the normal healthy subject, as well as the patient, becomes a more profitable *Versuchstier* than dog, rabbit, or frog. Experiments, drawn from the work of many investigators, are capable of almost unlimited modification and extension. Their interpretation, as applied to normal respiration, is mainly due to Haldane and his collaborators. Henderson has endeavored to emphasize their meaning for respiratory failure in anesthesia and shock. Recent observations by many investigators, in laboratory and clinic, suggest that the theory of respiration affords a valuable means of solving the difficult problems of acidosis. In cardiorenal and diabetic cases, in normal persons at great altitudes, the alveolar carbon dioxide is an index of the degree of acidoses. The experiments described include: Forced breathing; holding the breath as long as possible; rebreathing; effects of carbon dioxide and oxygen; reflex inhibition of the respiratory centre by distention of the lungs; oxygen consumption during rest and work; artificial respiration; determination of the alveolar carbon dioxide; metabolism experiments during rest and exercise with the Douglas bag; the dead space of the respiratory tract.

Cardiac Effects of Immoderate College Athletics.—L. Shumacker and W. S. Middleton, from extensive observations, sum up as follows: 1. Athletic training leads at first to physiological hypertrophy of the heart; but prolonged and severe athletic contests usually lead to hypertrophy plus dilatation of a variable degree, frequently marked by valvular insufficiency. 2. Functionally, the hypertrophied heart, even when dilated and giving distinct evidence of valvular insufficiency, may prove more fitted to carry the man through a severe athletic contest than a normal heart. On the other hand, acute cardiac dilatation occurs more frequently in athletes and men used to severe muscular strain than in normal men, and the ultimate effects are more prolonged and severe. 3. There is reason to believe that for normal activities, an "athletic" heart is distinctly disadvantageous.

Ischemic Pains.—A. R. Mitchell applies the the term ischemic only to pallors which affect circumscribed areas for an indefinite and usually very transient period, and which may recur at any time under conditions similar to the first exciting cause. He believes that these are the result of a disturbed metabolism, effected through hormones; the change finds its expression in temporarily altered function of the part; the probable source is often local, shown by prompt relief from strictly local treatment. That it may be initiated by some central influence is shown by the quick action of drugs which relieve the general tension, and by almost certain trouble when toxic substances are used. The influence of internal secretions is not clear; in the analysis of cases these should be taken into consideration. In treatment, measures which relieve vascular tension should be used; the hot bath is the best of all, or hot applications over the painful area. Sodium nitrite and amyl nitrite seem to be of service; such agents give prompt relief if they do not have to be repeated too often. Opium is the ideal remedy; it relieves pain, quiets the nervous system, stimulates the heart, and relieves arterial spasm.

Etiology of Arthritis deformans.—E. C. Rosenow says that the chief objections to the infectious theory of this disease are that so many cases do not give a typical picture of infection, and that no one thus far has isolated any organism from the tissues or joints in a considerable number of consecutive cases. Bacteriological examination of the blood and the articular exudate has usually given negative results. It occurred to him that the lymph glands draining the involved joints would be a good place to look for organisms, and he has been able to isolate organisms from excised glands from all but three of thirty-eight cases. These organisms were, in fourteen cases, a peculiar, streptococcus-like organism, at first completely or partially anaerobic; Bacillus welchii in nine; Bacillus mucosus in one; and the gonococcus in one. In a number of glands several kinds of organisms were found at the same time.

MEDICAL RECORD

April 11, 1914.

Pathological Antagonism; Its Relation to Diabetes mellitus.—H. S. Stark says that pathological antagonism means the tendency of a morbid process to come to a standstill or to disappear on the supervention of another. His interest in the subject sprang from observation of unique and anomalous cases of diabetes in association with other disorders in which the glycosuria disappeared when a complicating affection arose. The clinical and pathological evidence to establish such an antagonism is fragmentary at best; nevertheless, recent studies on the metabolism of diabetes have brought to light enough data to justify the general conclusion that such an antagonism exists. The cases he arranges in three groups: 1. Those in which glycosuria alternated with some other clinical symptom; 2, those in which diabetes disappeared upon the establishment of some other disease; 3, those in which glycosuria disappeared permanently after a surgical operation. These three groups present

such unusual features that it is impossible to apply the same theory of origin to all.

Cure of Habitual Constipation by the Intra-abdominal Use of Oil.—W. F. Burrows states that habitual constipation, not due to abdominal inflammation nor to an anorectal affection, is usually associated with definite mechanical intraabdominal causes. Adhesions, angulations, and kinking may follow continued bowel stasis, or be formed following intraabdominal inflammation, and act as exciting causes of constipation. Later the mesenteric attachments of the viscera become elongated, the upper abdomen is comparatively emptied, while the lower is filled with prolapsed viscera; the belly wall is stretched, relaxed, and prominent; the intestinal musculature weakened; and at susceptible parts of the alimentary canal abnormal distention of the lumen of the bowel occurs. To eliminate these causes of constipation, adhesions need to be broken down or cut through, denuded peritoneal areas covered, angulations and kinks straightened, severe degrees of prolapse corrected by gastro-, ceco-, colo-, or sigmoidopexy, and a sufficient intraabdominal pressure created. After correcting apparent abnormalities, which in several instances have consisted simply of breaking down adhesions, after curing kinks, the author, in selected cases, pours from six to ten ounces of purified liquid petrolatum, preferably of high specific gravity, into the abdominal cavity. This oil prevents the recurrence of adhesions, lubricates the intestinal coils, floats the gas filled loops of gut out of the pelvic cavity, exerts an intraabdominal pressure upon the viscera, and is followed by a return of normal peristalsis and bowel evacuation.

The Internist and Seminal Vesiculitis.—T. A. Kenefick says, in regard to the diagnosis of this affection, that when the finger is passed over the prostate and on to the seminal vesicles above, pressure gives no pain under normal conditions; but if the vesicles are inflamed, the distress is peculiarly excruciating. Some patients suddenly collapse under the mildest manipulation. This condition, and a history of certain complex nervous symptoms, should make a diagnosis comparatively simple. As to treatment, the sclerotic stage, with arthritic complications, requires incision and drainage, while in catarrhal vesiculitis, treatment consists in circumcision and a careful series of strippings, every fifth day for several months, to remove congestion and secretion. The author describes three illustrative cases and draws the following conclusions: 1. The advantage of circumcision should be given every male infant. 2. Stretching of the orifice, as some advise, is vicious. 3. Adults with abnormal sexual impulses, accompanied by melancholia, even though of mild character, should have the sexual region carefully examined for painful seminal vesicles. 4 Internists should be able, by digital examination, to distinguish between normal and painful vesicles; for at this point a man's honor, marital happiness, character, good citizenship, and even his freedom may be concerned.

Liver Abscess.—Adolph Jacoby gives the history of six cases. In speaking of the diagnosis, he says that in all, a constant finding was pain and tenderness with an enlarged liver. In addition, there were daily attacks of chills, fever, and sweats. In the greater number of cases, a leucocytosis was present. In four there was a history of a definite etiological factor, while the other two began with signs of pleurisy and pneumonia. In doubtful instances, he says, diagnosis may be made by exploratory puncture, as was done in three of his cases. The x ray is also helpful. Treatment is operative, with free drainage, above or below the diaphragm, according to the seat of the abscess. In amebic cases, the bowels must be treated at the same time. Two of the six patients died.

AMERICAN MEDICINE.

March, 1914

The Unsolved Problem in Obstetrics.—E. Mc Donald says that the great complications of pregnancy, contracted pelvis, placenta prævia, toxemia, eclampsia, and puerperal infection, are still unsolved, their treatment still disputed and obscure; and of these problems the greatest is puerperal infection. Puerperal infection is no less prevalent in private practice than it was before the days of antiseptic methods. In hospital practice the mortality is very much reduced; yet there is record of hospital epidemics even in these latter days. The solution of this problem, however, is probably easier than the problem of cancer. The causes of puerperal infection are known; prevention is a problem of proper methods, of a more thorough knowledge of the processes of infection. Among obstetricians of the present time the most popular treatment of puerperal infection is a do nothing policy. They assert that more women get well if they are left alone. It does not follow that their opinion is correct, but that most known methods are ineffectual or harmful. There is no reason why processes of infection through the uterus or infection elsewhere in the body should go untreated. The problem of puerperal infection is essentially one of prevention. The three avenues of infection are, first, the obstetrician and his instruments; second, the vulva and outward genitalia; third, the vagina. In regard to antiseptic measures, it is possible that we may return to the ante partum douche; but it is important that no dangerously poisonous germicide should be used in the preventive or other important treatment of puerperal infection. The bacteriology of infection, in spite of the large amount of study which has been given it, is not yet settled Thus, the role of the gonococcus has not been determined. Knowledge of the prognosis of puerperal infection is extremely small. All we know is that it is a self limited disease, like erysipelas, and tends to a spontaneous cure. Exhaustion has been shown by Williams to be a great factor. The serum or vaccine treatment of puerperal infection offers but little hope of cure, and the use of vaccines in this disease has little or no scientific foundation. While streptococcus infection causes rather more than half the cases of puerperal infection, the study of the disease should include other organisms also. Treatment of infection, as Ehrlich said in his address before the British Medical Association, tends toward chemotherapy. The work of investigation should be taken up by the larger clinics; the establishment of research foundations for the study of

puerperal infection would produce more immediate results and greater benefits to humanity than all that cancer research has done. Had a tithe of the effort expended on the latter been applied to puerperal infection, it is probable that this plague would now be conquered.

ARCHIVES OF INTERNAL MEDICINE.

March, 1914.

Lung Infarction and Lobar Pneumonia.—L. A. Conner reports four cases in which the early symptoms were suggestive of pneumonia, yet subsequent careful observation warranted the conclusion that all were cases of pulmonary embolism and infarction. In three there were points in the history which indicated that venous thrombosis existed before the lung symptoms. That four instances of pulmonary infarction in apparently healthy persons were observed in a single medical service during one year suggests that they are far from rare.

Interpretation of the Auscultatory Blood Pressure Sounds.—D. R. Hooker and J. D. Southworth devised a method of recording photographically the brachial sounds synchronously with records of systolic and diastolic blood pressures as given by the Erlanger apparatus. From clinical observations the conclusion was reached that in normal subjects the onset of the brachial sound is coincident with systolic, and the cessation of the sound with diastolic blood pressure.

Study of Two Cases of Heart Block.—E. B. Krumbhaar found, in a case with transient attacks of heart block complicated with Adams-Stokes syndrome during the last eight days of life, a marked cellular infiltration of the auriculoventricular conductive system; the right branch of the bundle was completely obliterated, showing that total destruction of one branch is compatible, at least temporarily, with a normal pulse. In the second case, a woman who sought relief from chronic rheumatic endocarditis with failing compensation, exacerbation of a simultaneously existing chronic salpingitis led in three weeks to general peritonitis, pleuritis, pericarditis, and localized areas of acute myocarditis, especially in His's bundle and Tawara's node. On the day of her death, owing probably to the heart block thus caused, there occurred four typical attacks of Adams-Stokes syndrome, the last of which was fatal.

Ulcus ventriculi.—M. H. Gross and I. W. Held present a new conception of the pathogenesis of gastric ulcer, based on the work of Eppinger and Hess, of Roessle, von Bergmann, and others. In individuals of the vagosympathetic type, there may occur a primary secretory disturbance manifested in increased gastric acidity or secretion when the sympathetic element predominates, or diminished secretion when vagus phenomena predominate. The patient reduces his diet in order to relieve his symptoms, and this results in gastric hypotony (or, there may be congenital asthenia and gastric hypotony). It is known that in hypotony gastric peristalsis is impaired or almost abolished. Excessive work is thus thrown on the propulsive mechanism of the pylorus and lesser curvature, the food reaching them in a chemically and mechanically unprepared state. Finally there comes a time when actual tetanic contractions take place; the muscle therefore contracts on the local bloodvessels, causing ischemia and autodigestion, and leading to ulcer. If the resulting pains, which serve as a warning, are ignored, errors in diet and habits continuing, progress of the ulcerative process is favored. Healing of an ulcer depends on increased mucous secretion. As regards diagnosis, persistent pain and hypersecretion constitute positive evidence of gastric ulcer; a coexisting asthenic state, or nervous symptoms render the diagnosis all the more certain. In hyposensitive persons the pain is not a predominating symptom; here continuous hypersecretion alone, or a tendency to hyperacidity plus frequent dyspeptic symptoms are sufficient to establish the diagnosis, the repeated findings of occult blood, or x ray evidence being confirmatory.

Skin Reaction Indicative of Immunity against Typhoid Fever.—F. P. Gay and J. N. Force observed that a preparation of the typhoid bacillus ("typhoidin"), in all respects similar to Koch's old tuberculin, produces a clearcut cutaneous reaction by the von Pirquet method in ninety-five per cent. of patients who have recovered from typhoid fever, twenty cases positive out of twenty-one. Two patients had suffered from the disease forty-one and thirty-three years before. The reaction is negative in eighty-five per cent. of individuals without history of typhoid. Forty-one cases were tested. The nine per cent. of these controls that gave a distinct positive reaction may be suspected of having had a mild, undiagnosed attack of typhoid fever. The test is of presumptive value in indicating protection against typhoid, whether acquired by recovery from the disease or by artificial immunization; it may eventually be used as an indication for revaccination in the individual case.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

February, 1914.

Exophthalmic Goitre from the Standpoint of the General Practitioner.—J. T. Ullom holds that in mild cases, with slight struma or exophthalmos and occasional tachycardia, recovery under medical treatment alone will occur in the great majority of instances. Close watching after apparent recovery is necessary. If mild cases fail to improve they may be quickly turned over to the surgeon. In moderately severe cases, with struma, exophthalmos, tremor, more or less persistent tachycardia, nervous, digestive, and vasomotor disturbances, the patient should be told of both treatments, but wherever possible subjected to prolonged medical treatment. Some patients will not agree to the necessarily protracted medical treatment; operation should then be performed, followed by careful medical treatment. In the severe cases of exophthalmic goitre, with emaciation, marked nervous and digestive phenomena, and weakened myocardium, medical measures must precede surgical, and at times may render the latter unnecessary. In addition to medical measures commonly recommended, the author advises that, after the daily bath, a hot and cold douche to the spine be administered; or, a very hot bath followed by a very cold one. Light general massage is often useful, taking the place of exercise. For general nervousness and insomnia, bromides in large doses are usually effective, though trional and veronal may

become necessary. Palpitation is usually best treated by the ice bag or ice water coil.

SURGERY, GYNECOLOGY AND OBSTETRICS

February, 1914.

Intramedullary Tumors of the Cord.—C. A. Elsberg recommends the method of extrusion for treatment and removal of intramedullary tumors of the spinal cord. If, after laminectomy and incision of the dura, the surgeon finds that he has to deal with an intramedullary growth, he should make a short incision about one cm. long, in the posterior median column a few mm. outside the posterior median fissure, at the spot where the growth seems to be nearest the surface of the cord. The incision should be deep enough to divide the pia and the substance of the column down to the tumor. The tumor will then begin to bulge through the incision. No matter how markedly the tumor protrudes, the surgeon must not attempt to remove it, for fear of grave injury to the cord. The operation must be concluded for the time being, the dura left wide open, the muscles, fascia and skin carefully closed, and actual removal of the growth left for a second operation. After about one week the wound is reopened, the tumor, which in all probability will be found outside the cord, can be removed by dividing the few adhesions which remain. When the tumor has been removed, the opening in the pia may be closed by a few very fine (split silk) sutures, and the dura, muscles, fascia, and skin closed in the usual manner. If, at the second operation, the tumor is still found to be closely connected with the cord, it is advisable to leave it in situ and not attempt its removal.

Heart in Fibroid Tumors of the Uterus.—J. A. McGlinn, after a study of 131 autopsies in which uterine fibroids were present, concludes as follows: If the fibroid tumors of the uterus were the cause of all the heart lesions described in this study, then every tumor, regardless of its size and situation, should be removed—a contention that the most radical would hardly admit. Uterine myomata, occurring in middle and advanced life, are practically always associated with sclerotic heart lesions. These lesions are a part of a general process and bear no relation to the fibroids. Large tumors, by increasing the work of the heart, and tumors causing pressure on the pelvic circulation may produce hypertrophy and secondary dilatation. Anemia from hemorrhages, infections, and certain degenerations of the tumor, may affect the heart secondarily, causing changes, such as fatty degeneration, brown atrophy, and cloudy swelling. The majority of cases of fatty degeneration, brown atrophy, cloudy swelling, myocarditis, etc., found in connection with fibroid tumors of the uterus are not caused by the tumor, but by conditions entirely foreign to the tumor.

Röntgenographic Diagnosis of Gallstones and Cholecystitis.—L. G. Cole says that the differential diagnosis of biliary calculi from right renal calculi is of great importance, and should be carefully made in every case presenting a stone in this region. The following points will aid in identification: 1. Biliary calculi show more distinctly and appear smaller when the plate is placed on the abdomen than when the plate is placed on the back. The opposite is true of renal calculi. 2. There is a ringlike shadow cast by a biliary calculus, when there is a calcareous coating to a cholesterin nucleus. Renal calculi seldom if ever have this appearance. 3. When three or more biliary calculi are present, they are likely to have faceted surfaces, which are readily recognized. One is usually larger than the others, and the group frequently has the appearance of a large, branching phosphatic calculus. 4. Moving the tube from side to side alters the relation of a biliary calculus to the kidney but it does not alter the relation of a renal calculus to the kidney.

Further Study of Pericolonic Membranes.—J. R. Eastman has experimentally produced such pericolic membranes in rabbits by inducing a low grade plastic peritonitis. Mild adhesive peritonitis occurred as the result of plugging of the large intestine with its own contents. Extreme coprostasis was induced by intermittent ligation of the anus and administration of morphine over a period varying from two weeks to three months. Care was taken not to confound normal long flowing mesenteries of the rabbits with membraniform adhesions. As in other quadrupeds, the mesenteries of the rabbits are voluminous, a single mesentery in some cases enveloping and supporting several intestines. Membranous adhesions which were attributed to artificially induced plastic peritonitis occurred in cases in which the intestines were held together over extensive areas by plastic lymph. The membranes were brought to view by separating the intestines at the site of imperfectly organized adhesions. Of the types of pericolic membranes produced experimentally in rabbits, one of the most common was that represented by a blanketing of the splenic angle with the fused anterior and posterior laminæ of the great omentum, suggesting an exaggeration of the phrenocolic ligament of Toldt.

Extraperitoneal Cæsarean Section.—Wm. R. Nicholson draws the following conclusions: The extraperitoneal suprasymphyseal Cæsarean section is an addition to the obstetric armamentarium; its chief indication is the "neglected case" or the mildly infected. Prognostic differentiation between various degrees of septic infection is a matter of uncertainty; the operation, in the words of Sellheim, is "of the nature of an experiment in many cases." The operation is absolutely contraindicated in seriously infected cases. The operation in clean cases is attended with good results in experienced hands; convalescence is more smooth and less hazardous than after the classical procedure. It is a more difficult operation than the classical, not only in gaining entrance to the uterine cavity, but also in delivery of the child; closure of the uterine wound is less difficult than in the Sanger method. There is less loss of blood than is usual in the classical procedure. Transperitoneal technic is to be preferred to the true extraperitoneal because of ease of performance, less interference with the bladder, and the avoidance of contamination of the retroperitoneal and preperitoneal tissue areas. The preferable technic is the modified Veit-fromme. Subsequent pregnancy and labor are usually not influenced adversely; repetition of the procedure may be more difficult and in some cases impossible.

Proceedings of Societies.

INTERNATIONAL SURGICAL CONGRESS.

Fourth Triennial Congress, Held in New York, April 13, 14, 15, and 16, 1914.

The President, Dr. H. DEPAGE, of Brussels, Belgium, in the Chair.

(*Concluded from page 801.*)

Gastric and Duodenal Ulcers (*concluded*).—Dr. A. GERSTER, of New York, emphasized the danger which might occur as the result of the use of sutures and said that medical treatment of gastric and duodenal ulcers was quite as important as surgical measures.

Dr. ALEXANDER OCHSNER, of Chicago, thought that in the large majority of cases of gastric and duodenal ulcer, the occurrence of such ulcers was due to the habitual abuse of normal feeding. Long continued irritation of the lining of the gastrointestinal tract due to hyperacidity, bad teeth, and irritated condition of the gums and tonsils was a somewhat important contributing factor in the production of gastric and duodenal ulcers. Ochsner was of the opinion that dietetic and medical treatment would often effect a cure in these cases. He agreed with Lilienthal that in some instances a two stage operation was indicated.

Doctor RODMAN, of Philadelphia, thought that although many patients suffering from gastric and duodenal ulcers made an operative recovery, frequently they were not cured. He therefore held that an even more radical treatment was called for. He spoke of the difficulty of diagnosing between ulcer and cancer, and went on to say that what prevented surgeons from performing pylorectomy more often was the exaggerated idea of the danger attending this operative measure. He had collected statistics of 378 operations. Two hundred and four of these were pylorectomy and 174 were excision of ulcer. The mortality was slightly over five per cent. for the 378 operations; pylorectomies eight per cent., and excisions of ulcers away from pylorus less than two per cent. Some of the men who operated had had little experience. He too agreed that a two stage operation might have the effect of considerably decreasing the mortality. Others had stated that ulcers at the pylorus frequently became malignant in other parts of the stomach; this was a rare occurrence. He considered, on the whole, that pylorectomy was the most effective operation.

Dr. W. J. MAYO, of Rochester, Minn., referred to Rosenow's work and said that investigations along the same lines were being carried on at Rochester. He, however, thought that as yet it was too early to form any decided opinion. He drew attention to the fact that Rosenow had produced acute gastric ulcers in animals, but not chronic ulcers, and in his opinion acute ulcers seldom became chronic. Doctor Mayo mentioned the fact that carcinoma never developed in the base of the ulcer. Seeing that the base of an ulcer was never found to be carcinomatous, it might be safely inferred that the malignant growth was grafted on. Doctor Mayo said that he preferred to perform a one stage operation whenever possible, and resorted to a two stage operation only when it was absolutely necessary. Among those who took part in the discussion were Dr. M. Bloch, of Copenhagen; Doctor Sonnenburg, of Berlin; Doctor Kümmell, of Hamburg; Doctor Lambotte, of Antwerp; Doctor Ullmann, of Vienna; Doctor Subbotitch, of Belgrade; Doctor Manninger, of Budapest; Doctor Krynski, of Warsaw; Doctor Lilienthal, of New York.

The discussion on the papers was long and animated. Perhaps the most interesting feature of the discussion was a description of experiments and results of experiments made by Dr. EDWARD C. ROSENOW, professor of pathology at the University of Chicago, on the etiology of gastric and duodenal ulcers. Some of Doctor Rosenow's work was already well known; for example, his successful experiments with certain strains of bacteria by which he has produced endocardial lesions in animals, also his experiments by which he showed that a single strain of streptococcus when cultivated in a different medium will change its characteristics. Doctor Rosenow as a result of his experiments decided that each strain of bacteria possessed a selective action for certain tissues of the body. Applying then the principle by which he produced endocardial lesions and joint lesions, he has produced gastric and duodenal ulcers in animals. As Doctor Bevan remarked, the results of these experiments are extremely suggestive, and if Rosenow is correct, the specific cause of gastric and duodenal ulcers and of other diseases is a definite organism with a selective action for distinctive tissues in an animal with lowered vital resistance. Doctor Bevan likewise laid stress on the need of proper medical management of cases of gastric and duodenal ulcer, stating that in his opinion such management would cure many cases.

Dr. J. B. MURPHY, of Chicago, corroborated Doctor Bevan's statements with respect to Rosenow's discoveries and explained more fully the evolutionary changes which bacteria may undergo when subjected to a new environment. Doctor Murphy also took occasion to state that he still continued to use the button which goes by his name, not, however, the round button which he discarded ten years ago, but an oblong button, which he finds acts in the most satisfactory manner possible. Many of the speakers gave it as their opinion that a recurrence of a gastric ulcer was frequently due to the sutures.

Dr. HOWARD LILIENTHAL, of New York, recommended excision of the ulcer bearing area at once. When, however, there was a large indurated mass near the pylorus, it required a severe operation to remove it. In such cases he was accustomed to perform a gastroenterostomy near the pylorus close to the median line and afterward when the patient had well recovered strength, to perform a pylorectomy. Thus in ulcer cases with indurated deposits he performed a two stage operation.

That part of the proceedings of the congress devoted to papers and discussion of plastic surgery was obviously of deep interest from the surgeons' point of view. Much had already been effected in this direction, and the vista opened bids fair, if realized or partly realized, to revolutionize surgical treatment in some respects. The progress that has been

made was wonderful enough to warrant the prediction, or at any rate to raise the hope, that as time goes on the advance of the methods of plastic surgery will render possible regeneration of tissue, reconstruction of joints, and transplantation of organs, marking a new era in surgery. However, in connection with this subject it may be pointed out that grafts and transplantations of bones and organs appear to have their limitations. At least this seemed to be the general opinion of the authorities who have just met in New York. Up to the present time the success of experimental and practical experience goes to show that grafts and transplantation of bones and organs can only be assured when transplanted in the individual from whom they have been removed. When transplanted from one to another of the same species, the method was rarely successful, and when transplanted from one species to another, was never successful. In the opinion of Dr. Alexis Carrel, with which the surgeons present at the congress were in agreement, it was definitely established that autoplastic transplantation of organs was practically always successful; homoplastic transplantations, although the immediate results may be excellent, were nearly always ultimately unsuccessful, and heteroplastic transplantations were always unsuccessful.

As to reconstruction of joints, the results in the hands of masters of the art, as Lexer, of Jena and J. B. Murphy, of Chicago, have been eminently satisfactory. The first paper read on grafts and transplantations was by one of the chief French exponents of these methods, Dr. H. Morestin, of Paris. The title of his paper was Grafts and Transplantations in Reparative Surgery. Doctor Morestin said in part: Grafts and transplantations of tissues have considerably enlarged the limits of reparative surgery. They have enabled surgeons to remedy under better conditions many grave deformities and have led to many other restorations hitherto almost unrealizable, giving hopes for a future of marvelous progress. For the proof of this, a glance at the actual treatment of the principal injuries and deformities for which plastic operations were employed showed the changes brought about by the results of cutaneous, epidermic, cartilaginous, and fatty grafts.

Free cutaneous grafting succeeded fairly well under certain conditions; for example, when a small fragment detached from a soft thin skin and deprived of its pannicle, was applied to a living surface strictly aseptic. But these indications have a limited scope, especially in reparative surgery of the face, on account of the trophic disturbance of the graft and the yellowish or whitish coloration which it retained indefinitely. Cutaneous transplantation had two distinct periods. The Italian method, notwithstanding the difficulties attending the procedure, was from this point of view by far the most satisfactory. It was preferable in cases in which it is absolutely impossible to find at hand the materials for a restoration which will allow the use of all the thickness of the skin and not only of its superficial layers. It must remain an exceptionally good method even for rhinoplasty, and blepharoplasty. Its triumph was the reconstitution of the lobule and the partition of the nose, by the aid of the skin from the palm surface of the hand. It alone permitted of a suitable reparation of the loss of substance from the palm of the hand.

Dermoepidermic graftings, he said, had innumerable indications in the treatment of superficial wounds and especially of those which by their extent prevent true methods of autoplasty; for example, great loss of substance following on burns, traumatism, or removal of tumors. These alone permit of the healing of wounds, resulting from the tearing off and complete destruction of the scalp, and were particularly recommended for the excrescences or cancers of the skin in old people.

In the surgery of the head, they constituted a sort of last resort. In the same way they afforded a mediocre resource in the treatment of deformities by scar. It may be advantageous to combine the use of dermoepidermic graftings with other methods of autoplasty, or also employ the method for reparations of a temporary sort which may enable one to discover later by the aid of other processes the means for attaining a more perfect result. Grafting of hairy parts was attainable either by free transplantation or by means of a fragment, this latter method being preferable, and even the only one to be recommended for an important grafting. By this method the eyebrow and even the moustache may be restored. The transplantations of cartilage constituted one of the most remarkable innovations in reparative surgery. It was thanks to this that the question of how to obtain total rhinoplasty had been solved. For centuries the difficulty of establishing a framework had been the stumbling block. This difficulty overcome, all became attainable. For in spite of various attempts, a successful result could never be attained, so long as no use could be made of the cartilaginous prothesis. From the moment when this was done dated the rhinoplasty worthy of the name. Cartilage was a trustworthy material. It exhibited great powers of absorption. It preserved its life for an indefinite period, and regarded from this point of view, it may be said that it was the only one of its kind amongst the transplanted tissues.

The facility with which cartilage lent itself to modelling rendered it very valuable in the reconstruction of nasal frameworks. In addition to total or subtotal rhinoplasty, and the correction of nasal malformations, other restorations may be doubtless aided by cartilaginous grafting. Morestin believed that numerous applications can be made of this method to the cure of deformities produced by more or less serious destruction of the facial structure. By incorporating fragments of cartilage with cutaneous pieces, for instance, under given conditions, certain gaps in the jaw and in the surrounding soft parts could be filled up, a result which up to the present had been unattainable. Adipose graftings were excellent for filling up empty spaces, bony hollows, and for effacing the depressions of soft parts. They therefore rendered the greatest service in the repairing of cranial gaps and facial deformities. Almost inert fatty tissue with few bloodvessels was among the most easily transplanted from one region to another. The transplant could almost always be made use of, pro-

vided it was placed in a rigorously antiseptic surrounding. This did not mean that it continued to live. After a more or less short struggle, it succumbed, but was replaced progressively by tissues of new formation, to which it served as a kind of protection. Thus while its role was transitory, this did not prevent its results from being stable. The easy means of procuring fat and the great facility with which it could be used in all deformities caused by depression, the beauty of results obtained by simple operations, served to render adipose grafting a very valuable acquisition to esthetic and reparative surgery.

Doctor E. Villard, of Lyons, presented a paper on vascular grafts and commenced by pointing out that there existed two large categories of vascular graftings; extemporaneous graftings and grafting of preserved vessels. Arterial graftings were distinguished from venous graftings by considering the nature of the graft. A grafting was auto- homo- or heteroplastic according as the graft was taken from the subject under treatment, from a subject of the same species, or from a subject of a different species. The result of grafting must be appreciated from the double point of view, macroscopic and microscopic; an excellent functional result, allowing nothing to be seen from the anatomical state of the graft, may by the microscope reveal sometimes profound lesions on a segment macroscopically healthy.

Extemporaneous grafting. From the standpoint of technic, Carrel's process gave the maximum of safety. 1. Arterial autoplastic grafting. Arteries transplanted on the same animal healed without modification. The segment grafted acquired fresh life in its new surrounding with the histological structure that characterized it. 2. Arterial homoplastic grafting. Macroscopically these graftings give good results, but the histological lesions observed after a certain lapse of time imposed reservations with regard to the vitality of the vascular graft transplanted from one animal to another of the same species. 3. Arterial heteroplastic grafting. Grafting under this head was possible, but it appears that the graft served only as a protection to a process of reparation on the part of the animal undergoing the grafting. 4. Venous grafting. Such graftings were possible but more difficult to realize with success than arteriovenous graftings. The grafted venous segment became hypertrophied. It undergoes histological modifications which appeared to be a step in the direction of the arterial structure. Grafting of preserved vessels. The best process of preservation was that in physiological and aseptic surroundings, maintained at a temperature of six degrees. Some vascular fragments thus preserved may be grafted with success, but only their elastic frame was grafted, which was capable of being absorbed by the cellular elements arising from the grafted subject.

Application of vascular graftings to human surgery. Surgery may benefit by the employment of vascular grafting under three conditions. 1. In the course of vascular traumatism. 2. In the extirpation of a tumor adherent to the large vessels. 3. In the treatment of aneurysms. If the indications existed to perform vascular grafting in a man, one would have recourse by preference to an autoplastic grafting, more particularly to a venous grafting, the organism more easily supplying a venous than an arterial graft.

Dr. E. Lexer, of Jena, and Director of the Royal Surgical University Clinic and Polyclinic of Louisberg read a paper on grafts and transplantations and gave a really remarkable exhibition with lantern slides by which he demonstrated the wonderful work he had accomplished in the reparation of deformities caused by disease or accident, and in the reconstruction of joints. The paper read by Doctor Lexer and the illustrations on the screen showed the results of his methods, and were certainly features of the Congress. As is well known Doctor Lexer was a pioneer in this field of surgery and in 1908 made some original pronouncements with respect to the treatment of bony ankylosis. He had performed striking transplantations of joints and had stated that the substitution of half a joint can be as easily done as that of an entire joint and considered that the possibility of organic incorporation of a transplanted joint taken freshly from man was proved.

Doctor Lexer in the paper read by him before the Congress took the stand that his mission consisted in establishing the practical value of grafting on the grounds of his own personal work and experience. He considered the question first from a general point of view and then from a particular point of view.

In general, the value of the various tissues employed for grafting is differently appreciated by practitioners and by pathologists. An excellent clinical result may be obtained not only if the graft taken preserves its own structure, but also if it disappears slowly, giving place to tissues of substitution, and sometimes even if it is completely surrounded by adhesions.

On the other hand, the differences in the degree of clinical failures must be taken into consideration. The graft may be expelled by a violent reaction or disappear in a slowly progressive suppuration; on the cheek the graft may disappear before the process of substitution has taken place, or the latter may confine itself to the formation of scar tissue.

The cause of failure apart from suppuration rests principally on the existence of small blood clots which prevent the nourishment of the transplanted part from becoming normally established. Autoplasty, homoplasty, and heteroplasty present different conditions for a successful issue.

The following were some of the conditions necessary for obtaining good implantations, vitality, nutrition, powers of acclimatization, and the strength to transplant for sufficient regeneration; also the condition of the wound upon which the implantation was made. To be able to show from an operation the value of a tissue as a graft, the transplant must show a perfect adhesion with the implanted tissue.

From a technical point of view they must require

a scrupulous asepsis, a watch against hemorrhage, a careful manipulation of the grafts, and the absence of lines of suture on their surface; as regards postoperative treatment, strict account must be taken of the functional utilization.

With respect to the particular aspects of the question, Doctor Lexer first considered epidermic and cutaneous transplantation. He pointed out the simple transplantations of the skin without the epidermic. The value of epidermic and cutaneous homoplasty was very slight and its results were doubtful. Most frequently it was a question probably of cicatricial substitution or subcrustaceous healing. Then Lexer discussed the clinical results of the transplantations of mucous membranes, nerve and vascular tissues, tendons, aponeurosis, periosteum, bone, cartilage, and joints, and the paper concluded with various observations on the clinical checks in the grafting of organs.

Dr. J. B. Murphy, of Chicago, pointed out that in the reconstruction of joints we were coming back to the clinical fact that fascia and fat gave the best results. Doctor Murphy explained the modes of joint reconstruction practised by himself and showed on the screen many distinctive examples.

During the progress of the Congress, in response to the request of the visiting members, the New York members of the International Surgical Society arranged numerous clinics at hours which did not conflict with the meetings of the society. At Bellevue there were held operative clinics by Doctor Woolsey, Doctor Keyes, and Doctor Hotchkiss; at the German Hospital by Doctor Meyer; at the General Memorial Hospital by Doctor Coley; at the Hospital for Ruptured and Crippled by Doctor Coley, Doctor Hoguet, and Doctor Walker; at the Mount Sinai Hospital by Doctor Lilienthal and Doctor Gerster; at the New York Hospital by Doctor Gibson, Doctor Johnson, and Doctor Hitzrot; at the Norwegian Hospital by Doctor Delafour; at the Presbyterian Hospital by Doctor Eliot; at the Rockefeller Institute by Doctor Carrel and Mr. James; at the Roosevelt Hospital by Doctor Peck, Doctor Brewer, Doctor Russel, Doctor Dowd, and Doctor Darrach; at St. Luke's Hospital by Doctor Abbe; and at St. Mary's Hospital for Children by Doctor Dowd.

At the Hospital for Ruptured and Crippled, Doctor Lorthioir, of Brussels, operated, Thursday, April 16th, for the radical cure of hernia. The distinctive feature of the operation in the hands of Doctor Lorthioir was the employment of aluminum clamps for the purpose of binding the exterior incisions, instead of using a needle. The clamps were dropped into place by an automatic feeding forceps. Doctor Lorthioir operated without gloves, and the running commentaries in French made by him during the operations were translated by Dr. J. P. Hoguet.

Among the interesting items given in the presidential address of Professor Willems at the opening meeting, which were recapitulated in the address of the general secretary of the society, Dr. M. L. Mayer, of Brussels, was the fact that since the meeting in Brussels three years ago, the society had lost by death no fewer than thirty members, one of whom was the late president of the society, the revered and distinguished Doctor Lucas-Championnière. Since the society was first formed, now nine years, 117 members had died. The general secretary also pointed out that 114 new members proposed by the National Committee had been elected by the International Committee, namely 6 German, 1 Austrian, 1 Belgian, 2 Canadian, 74 American, 14 Danish, 1 English, 2 Italian, 1 Norwegian, 4 Dutch, 1 Roumanian, 4 Russian, 1 Swiss, 2 Hungarian.

Entertainments.—The entertainments began with an excursion up the Hudson River on Sunday, April 12th, for the foreign guests, on the yacht *Aphrodite* by invitation of Dr. L. A. Stimson. The inaugural reception was held in the grand ballroom of the Hotel Astor at 11.30 on Monday morning, many ladies being present beside the members of the association. A dinner was tendered to the members of the association and to the ladies accompanying them, by the American Surgical Association at the Hotel Astor on Monday evening. A luncheon was given to the ladies by Mrs. W. J. Mayo at the Hotel Biltmore on Tuesday. On the same day the ladies attended a matinee performance of *Peter Pan*. On Tuesday evening the visitors attended a special performance at the Metropolitan Opera House as guests of the American Surgical Association. On Wednesday evening the president of the congress received the members at the residence of Mr. and Mrs. Phipps on Fifth Avenue. On Wednesday morning the members were invited to visit the library of the late J. P. Morgan. On Thursday afternoon the ladies of the party made an automobile tour of the upper part of Manhattan Island. A ladies' committee was formed to care for the social features of the meeting with Mrs. Arpad Gerster as chairman. Beside these official functions, there was a number of private entertainments.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

American Red Cross Abridged Textbooks on First Aid. Woman's Edition, Miners' Edition, Railroad Edition, and Police and Firemen's Edition. Manuals of Instructions. By Major Charles Lynch, Medical Corps, United States Army. Prepared and Endorsed by the American Red Cross. With Illustrations. Philadelphia: P. Blakiston's Son & Co., 1913. (Price, 30 cents each.)

The publishers, under the auspices of the American Red Cross, have issued on excellent paper, and are selling at the low figure of 30 cents net a volume, a series of abridged textbooks on first aid. The name of the well known writer and authority, Major Charles Lynch, is a sufficient guarantee for the valuable subject matter of the well arranged and excellently illustrated text of the several special subjects treated in the four booklets. Each of these editions contains the necessary instruction in general principles. There are many conditions, however, peculiar to certain industries which require special information and training. These are thoroughly treated in the various editions, each of which has been prepared especially for those in the branch described. Well arranged indexes add much to their value. The women's edition must result, not only in many more women studying first aid to the injured, but also in giving women students of the subject better practical knowledge than has hitherto been available in one

book. The miners' edition has been prepared with the assistance of First Lieutenant M. J. Shields, medical reserve corps, U. S. A. Our authors say, "the spread of the first aid movement in a vast number of mines throughout the country has seemed to demand a special book for miners; furthermore, experience has shown that instruction in safety and in first aid should go together. Chapter x is especially valuable and interesting, with illustrations of the more common mine accidents. The pages of "don'ts" for the fire boss, miner, laborer, runners, drivers, trappers or door boys and footman or cager are invaluable safety warnings which ought to be posted in and about every mine in the country.

The railroad edition refers especially to the experience gained by the American National Red Cross, which has conducted a first aid campaign on the railroads of the United States during the past few years.

As to the police and firemen's edition, the author says it has been for years his earnest desire to prepare an edition specially adapted to the needs of policemen and firemen. After making a careful investigation in Europe in 1912, Major Lynch became even more convinced that there was room for a book of this character in our own country. After his return, he wrote to all the police and fire departments of our larger cities. Their commendation of the plan was almost universal and this special edition of the first aid manual has been the result.

The Healthy Marriage. A Medical and Psychological Guide for Wives. By G. T. WRENCH, M. D., B. S. (Lond.) Past Assistant-Master of the Rotunda Hospital, Dublin; Author of Practical Obstetrics, Midwifery for Nurses, The Mastery of Life, etc. New York: Paul B. Hoeber, 1914. Pp. viii-299. (Price, $1.50.)

Charm of style goes a long way toward rendering an old tale acceptable. Herein we have this truism well exemplified. Doctor Wrench has made a good book for wives, which their husbands or potential husbands would be wise also to read. Especially should one hesitating on the brink of matrimony read the excellent chapter on the value of marriage. He or she will then not dare to remain single—if qualified to marry. Ample experience and practical good sense are shown on every page. To be sure, European points of view diverge at times from American (till transplanted) and allowances should be made for localisms, such as on warming and lighting, baths and bathing, ventilation, and on the use of alcohol. In this last he is rather overliberal for most of us in this country, endorsing Matthew Arnold—but then, he is Irish, and there are two sides to every belief; also he might show a little less apprehension as to the morbidities of the menopause. It is an exceedingly useful book and deserves wide distribution among womankind. It is dedicated to his mother-in-law; there's testimony!

Über den gegenwärtigen Stand der Pathologie und Therapie des Diabetes insipidus. Von Professor Dr. ERICH MEYER, Vorstand der medizinischen Universitäts Poliklinik Strassburg, i. E. Halle a. S.: Carl Marhold Verlagsbuchhandlung, 1914. Pp. 58.

Doctor Meyer quite fully reviews the present day opinions concerning the pathology and therapy of diabetes insipidus. After discussing the pathology and physiology of this condition, he takes up the diagnosis, prognosis, and treatment. The author concludes that a true primary polyuria may result from the irritation of the central and peripheral sympathetic tracts; also, that in consequence of this irritation, there may occur extensive changes of the kidney function in respect to the excretion, not only of water, but of the salts as well. As far as the prognosis is concerned, the result depends not upon the diabetes insipidus itself, but upon the condition that may have caused it. This small pamphlet contains much that is useful and interesting.

Transactions of the American Association of Genitourinary Surgeons. Twenty-seventh Annual Meeting held at the Shoreham Hotel, Washington, D. C., May 6 and 7, 1913. Volume VIII. New York: Frederick H. Hitchcock, 1913. Pp. 313.

The matter contained in such a volume as this is of the highest interest to urologists, for it represents the best work done by the best men in that specialty today. Amid a wealth of interesting matter in the present volume we may select as especially noteworthy the contributions on the diagnostic importance of the infantile kidney, by Doctor Geraghty and Doctor Plaggemeyer; the observations on hexamethylenamine, by Doctor Hinman, and the clinical diagnosis of congenital anomaly in the kidney and ureter, by Doctor Braasch.

The Home Nurse. By E. B. LOWRY, Author of Herself, Confidences, Truths, etc. Chicago: Forbes and Company, 1914. Pp. 224. (Price, $1.)

Where it is not possible to obtain a hospital trained nurse or a graduate of a good correspondence school, in many an emergency this book should prove of great value to the relatives of some unfortunate invalid. The directions are plain, the language is simple throughout, and the great general principle, implicit obedience to the doctor, is carefully inculcated. Beginning with bed making and the observation of symptoms, the untrained but willing attendant is taken through an excellent course, including nursing in special diseases, and winding up with the home treatment of such disorders as tonsillitis, accidents and emergencies, adenoids, hernia, bow legs, etc. The country doctor might bear this work in mind to his very great relief in some important crisis.

Interclinical Notes.

A Synopsis of Medical Treatment, by George Cheever Shattuck, M. D., is published at $1.25 by W. M. Leonard, of Boston, enlarged and improved from the first edition. Doctor Shattuck has drawn upon his private practice and his clinical experiences in the Massachusetts General Hospital, to compress into fewer than 50 pages valuable knowledge concerning treatment only. A blank page opposite each printed one enables the student to add notes of his own. We recommend this book as a pocket companion to every advanced medical student, and fancy it may prove useful also to practitioners to refresh the memory. If we may judge by two tables on pages 94 and 95, Doctor Shattuck's armamentarium consists of thirty-four well tried remedies, of which twenty are favorites.

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Henry J. Glaisher, 55 Wigmore Street, London, publishes, at 2s. 6d., *Time and the Timeless,* Songs of Shadow and of Hope, by A Physician. The practitioner who thus modestly conceals himself under a *nom de guerre,* has a most decorous Muse, who trips along steadily and demurely, with no tango steps and no visible slit in her skirt. The little collection covers a wide range of subjects, from Life and Death to The Little Bistoury. The following verses from Lines to a Brother Physician are a fair sample of the writer's style:

The Father of our Art, Hippocrates,
Invoked Apollo, Æsculapius,
Hygeia, Panacea, and the gods:
By all the greatest names in earth and heaven
He dedicated to his art and ours
The ripening powers of his life and mind.
Alas! is Medicine less good, less great,
Than thrice three thousand years ago she seemed
To one great man, that we in later days,
Dream not of vows, of holy auspices,
Of Life to one high Purpose dedicate?

Meetings of Local Medical Societies.

MONDAY, *April 27th.*—Therapeutic Club, New York; Medical Society of the County of New York; Psychiatric Society of Ward's Island; Poughkeepsie Academy of Medicine.

TUESDAY, *April 28th.*—New York Psychoanalytic Society; New York Dermatological Society; Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Pathology); New York Medical Union; New York City Riverside Practitioners' Society; Valentine Mott Medical Society, New York; Washington Heights Medical Society, New York; Woman's Hospital Society, New York.

FRIDAY, *May 1st*.—New York Academy of Medicine (Section in Surgery); New Utrecht Medical Society; New York Microscopical Society; Gynecological Society, Brooklyn; Manhattan Dermatological Society; Practitioners' Society of New York; Corning Medical Association; Saratoga Springs Medical Society; Society for Serology and Hematology, New York.

SATURDAY, *May 2nd*.—Benjamin Rush Medical Society, New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending April 18, 1914.

Clark, T., Surgeon. Detailed to attend the meeting of the Virginia Public Health Association to be held at Charlottesville, Va., April 23, 1914, for the purpose of presenting a paper on trachoma. **Crane,** J. F., Acting Assistant Surgeon. Granted seven days' leave of absence from April 10, 1914. **Derivaux,** R. C., Assistant Surgeon. Directed to proceed, when directed by Surgeon R. H. von Ezdorf, to points in the South, particularly in the States of Arkansas, Mississippi, South Carolina, and Tennessee, for the investigation of the prevalence of malaria and the collection of pathological material and specimens of mosquitoes. **Fox,** Carroll, Surgeon. Granted one day's leave of absence, April 14, 1914. **Glanville,** W. E., Assistant Surgeon. Directed to report, April 20, 1914, to the commanding officer of the Revenue Cutter *Bear* at San Francisco, Cal., for duty during the summer cruise in Alaskan waters. **Jenkins,** Luther W., Assistant Surgeon. Directed to report, April 15, 1914, to the commanding officer of the Revenue Cutter *Manning* at San Francisco, Cal., for duty during the summer cruise in Alaskan waters. **Kerr,** J. W., Assistant Surgeon General. Directed to proceed, by way of Providence, R. I., to Boston, Mass., for consultation with the State authorities regarding methods of sanitary administration. **Marsh,** W. H., Acting Assistant Surgeon. Granted four days' leave of absence from April 27, 1914. **Pierce,** C. C., Surgeon. Directed to proceed to New York, N. Y., for the purpose of investigating a closet closing device now operating on certain railroads, also while in New York to visit such places as may be necessary to collect information, which may be of assistance in the preparation of the Service Exhibit at the Panama-Pacific International Exposition. **Rucker,** W. C., Assistant Surgeon General. Directed to proceed to Baltimore, Md., on April 14, 1914, for the purpose of delivering a stereopticon lecture on the subject of bubonic plague. **Smith,** E. E., Sanitary Bacteriologist. Directed, when instructed by the medical officer in charge of the investigations of the pollution of the Ohio River, to proceed to such points on the Ohio River Watershed, as he may designate, for the purpose of collecting samples of water, making sanitary surveys and laboratory investigations. **Treadway,** W. L., Assistant Surgeon. Granted two days' additional leave of absence from April 19, 1914. **Veldee,** Milton V., Sanitary Bacteriologist. Directed, when instructed by the medical officer in charge of the investigations of the pollution of the Ohio River, to proceed to such points on the Ohio River Watershed as he may designate, for the purpose of collecting samples of water, making sanitary surveys and laboratory investigations. **Von Ezdorf,** R. H., Surgeon. Detailed to attend the meeting of the Section in Malaria Eradication of the National Drainage Congress in Savannah, Ga., April 22 to 25, 1914, for the purpose of presenting a paper describing present and contemplated governmental activities in relation to malaria investigations.

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending April 17, 1914.

Arthur, William N., Colonel, Medical Corps. Granted leave of absence for three months, to take effect upon arrival in the United States. **Ashburn,** Percy M., Major, Medical Corps. Ordered to report to the governor of the Panama Canal for duty with the health department. **Austin,** Thomas C., Captain, Medical Corps. Granted six months' leave of absence, with permission to go beyond the sea, to take effect on his relief from duty in the Philippine Islands. **Bourke,** James, Captain, Medical Corps. Granted four months' leave of absence, with permission to go beyond the sea, to take effect when his services can be spared by his post commander. **Bradley,** A. E., Lieutenant Colonel, Medical Corps. Ordered to inspect Fort Jay, Fort Wood, Fort Totten, Fort Wadsworth, Fort Hamilton, and Fort Hancock. **Eckels,** L. S., First Lieutenant, Medical Reserve Corps. Granted five days' additional leave of absence. **Garcia,** L. C., Captain, Medical Corps. Granted three months' leave of absence about August 20, 1914, with permission to go beyond the sea. **Heath,** George D., Jr., Captain Medical Corps. Having been found incapacitated by an army retiring board, and the findings having been approved by the President, is retired from active duty; will proceed to his home. **Henning,** O. F., First Lieutenant, Medical Reserve Corps. Ordered to Gilroy, Cal., for special duty. **McDiarmid,** N. L., Captain, Medical Corps. Detailed with troop M, 1st Cavalry, to leave April 15th for Yosemite Park. **Noble,** Robert E., Major, Medical Corps. Granted leave of absence for one month, with permission to apply for an extension of two months.

Births, Marriages, and Deaths.

Married.

Ames—Calkins.—In Berkeley, Cal., on Wednesday, April 22d, Dr. Matthew H. Ames and Miss Harriett Rebecca Calkins. **Propper—Miller.**—In Milwaukee, Wis., on Sunday, April 5th, Dr. I. J. Propper, of Gary, Ind., and Miss Rose Miller. **Sinkler—Pearce.**—In Philadelphia, on Tuesday, April 14th, Dr. Francis Wharton Sinkler and Miss Mildred Scott Pearce.

Died.

Bainbridge.—In San Joaquin, Cal., on Sunday, April 5th, Dr. G. A. Bainbridge, aged eighty-one years. **Barnes.**—In Cambridge, Mass., on Sunday, April 12th, Dr. Allan Foster Barnes, aged thirty-nine years. **Boyle.**—In Glenside, Pa., on Thursday, April 9th, Dr. Morris P. Boyle, aged thirty-seven years. **Briggs.**—In St. Paul, Minn., on Monday, April 6th, Dr. Warren S. Briggs, aged sixty years. **Dent.**—In Maysville, Mo., on Tuesday, April 7th, Dr. Phillip A. Dent, aged seventy-nine years. **Dodge.**—In Menasha, Wis., on Monday, April 6th, Dr. G. W. Dodge, aged seventy-two years. **Hand.**—In Utica, N. Y., on Wednesday, April 8th, Dr. John T. Hand, of New Berlin, N. Y., aged fifty-five years. **Harry.**—In Conshohocken, Pa., on Friday, April 10th, Dr. David W. Harry, aged seventy-seven years. **Haynes.**—In Chicago, Ill., on Thursday, April 9th, Dr. Celia M. Haynes, aged sixty-nine years. **Horton.**—In Florence, Neb., on Saturday, April 4th, Dr. W. M. Horton. **Kimball.**—In Minneapolis, Minn., on Saturday, April 11th, Dr. Benjamin W. Kimball, aged eighty-five years. **Kinne.**—In Syracuse, N. Y., on Wednesday, April 15th, Dr. George Ritz Kinne, aged sixty years. **McDonald.**—In Fremont, Neb., on Sunday, April 5th, Dr. Robert C. McDonald. **McGrew.**—In Auburn, Neb., on Wednesday, April 1st, Dr. S. W. McGrew. **MacQuisten.**—In Flint, Mich., on Monday, April 6th, Dr. William D. MacQuisten, aged fifty-two years. **Mandeville.**—In New Orleans, La., on Friday, April 10th, Dr. William R. Mandeville, aged sixty-three years. **Palmer.**—In New York, on Friday, April 10th, Dr. Miles W. Palmer, aged ninety-two years. **Stookey.**—In Smithton, Mo., on Wednesday, April 8th, Dr. John D. Stookey, aged twenty-six years. **Van Zandt.**—In Texarkana, Texas, on Saturday, April 4th, Doctor Van Zandt. **Willis.**—In Rochester, N. Y., on Sunday, April 12th, Dr. Frederick Llewellyn Hovey Willis, aged eighty-five years. **Wilson.**—In Newark, N. J., on Thursday, April 9th, Dr. William Stockton Wilson, aged seventy-five years.

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THE DIFFERENT THEORIES OF APHASIA.*

BY CHARLES K. MILLS, M. D.,
Philadelphia,
Professor of Neurology, University of Pennsylvania.

That interest in the subject of aphasia has suffered no abatement, notwithstanding its frequent discussion since Marie's announcement of his view of the importance of mental deficit in the explanation of aphasic phenomena, is evidenced by the fact that at the recent International Medical Congress, held in London in August of last year, some of the greatest men in the field of neurology gave their attention and time to the consideration of the cerebral disturbances of speech. The members of this society, especially those connected with the Philadelphia General Hospital, with its wards rich in organic nervous disease, are especially fitted by their opportunities and investigations to contribute to the solution of disputed questions concerning aphasia. I regard it therefore as fortunate that the council of the society has deemed it worth while to suggest a symposium on affections of speech of cerebral origin, although these have not infrequently claimed attention in recent and more remote periods of our society's history. Some scientific basis must exist for the views of experienced and enlightened observers, and for this reason I have no doubt that the apparently conflicting data and theories of neurologists of such distinction as Déjerine, Marie, von Monakow, Liepmann, Moutier, and Dercum, must in large part be reconcilable. Divergence of opinion on this subject as on so many others is largely due to method of interpretation. In opening this discussion, therefore, I shall not so much attempt to give new facts and ideas as endeavor to show the possibility of harmonizing some apparently widely separated opinions.

The three theories regarding aphasia requiring attention in this discussion are: 1, The so called classical view based on the discoveries of Broca, Wernicke, and others; 2, the mental deficit theory of Marie; and, 3, Liepmann's doctrine of apraxia as applied to aphasia. The diaschisis of von Monakow must also receive consideration.

The older or so called classical view of aphasia is one that recognizes a subdivision of the cerebral zone of speech into at least two subareas, one sensory and the other motor. According to some authorities, a third area, which might be called conceptual, although the term is open to objection, is intercalated between the sensory and motor speech regions. Accepting the subdivision into sensory and motor areas, the sensory region has generally been recognized as subdivided into at least two parts, one auditory and the other visual, these being respectively places of concentration or storage of auditory and visual images.

Much objection has been made at times to the use of such expressions as centres and memorial images, because of their supposed lack of definiteness; but it matters little how these centres of function are designated or explained, if the fact is recognized that they are in some sense foci of activity resulting in special phenomena.

Mistakes are sometimes made by the opponents of localization, and perhaps also by the localizationists themselves, in giving a loose interpretation to the conception of centres. Every centre is simply one of the foci of a mechanism which has many associations and interrelations within itself and with other parts of the brain. Nevertheless, it has its particular purpose in the general machinery of which it is a part—a purpose which can be determined by investigation.

In *Science* for April, 1912, F. H. Pike has put this matter of localization of function so neatly and clearly that it seems worth while to make one or two citations from him in this connection:

> It is true that Marie and von Monakow have shown that certain of the more or less current conceptions of focal or insular representation of cerebral function, particularly those concerning the speech centre, are no longer tenable, but neither Marie nor von Monakow has denied that certain definite fibres arise from definite circumscribed areas of cells in the cerebral cortex and run to certain definite end stations. Indeed, no point of nervous anatomy or physiology seems better established than this. And stimulation of a definite, circumscribed area of the cerebral motor cortex of any one animal always elicits a response of a definite group of muscles, and never of any other groups. This definite, circumscribed cell area constitutes the focal or insular motor representation in the cerebral motor cortex of this particular group of muscles. Such a circumscribed area, frequently marked off from surrounding cells by a boundary of nonnervous tissue, is commonly known as a motor centre.
>
> It would, however, be an error to suppose that this group of cells is an isolated group. It has, through afferent association neurones, connections with practically every portion of the cerebral hemisphere of the same side; through commissural neurones, with practically every portion of the opposite side, and through afferent [efferent?] projection neurones, it is brought into relation, directly or indirectly, with the cerebellum, spinal cord, and other structures. The circumscribed area of cells thus becomes a part of an extremely complex and extensive *motor system*, but in such participation it loses nothing in definiteness of location or of function. The conception of a circumscribed motor

*Remarks made in opening a discussion on aphasia at the meeting of the Philadelphia Neurological Society, February 27, 1914.

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centre must be superseded by the conception of a motor system or mechanism. It is to such a mechanism that we may apply the conception of integration as developed by Sherrington. Integration is essentially a dynamic rather than a morphological process; but integration implies a certain definiteness of relationships, morphological as well as dynamic, throughout any one process. We have already stated that stimulation of the particular group of cells always evokes a response of a particular group of muscles—contraction of one set and relaxation of their antagonists. And since this phenomenon of group movement is constant from day to day or year to year in any one individual, we are justified in assuming that a certain rather constant morphological mechanism integrates certain rather constant relations in time and space to a fairly constant result. This is the essence of the modern dynamic view of localization of function.

The principles which are illustrated by this discussion of motor centres and integrating mechanisms, are equally applicable to the explanation of the phenomena of sensation and even those of mentation. Pike says again:

For my part I find it impossible to gain a clear idea of how the brain functions as a whole in motor processes. I do believe, however, that we may gain a certain degree of clearness of ideas if we suppose that certain definite circumscribed cell areas, and no others, acting through their association tracts, may evoke a definite motor reaction, and no other motor reaction. Similarly, I find it extremely difficult to see how the brain, acting as a whole and without reference to circumscribed cerebral areas or to integration systems involving two or more such areas, may give rise to a mental process. I can picture to myself a conceivable way in which several cell groups or systems, acting together in a particular manner and without special reference to the rest of the brain, may give rise to a particular mental process or conception made up of certain definite mental elements which are related in a definite way. Other parts of the brain may subsequently be involved in succeeding mental processes, but a definite order of succession may well be followed.

As regards the motor region for speech, the view maintained since the time of Broca is that a certain cortical area, usually defined as the hinder part of Broca's convolution or of this and the preinsula, is in some especial way concerned with emissive speech. Many explanations of the manner in which this so called motor centre for speech performs its important functions have been advocated. By some it has been called a zone for motor images; by others an arranging centre or place where language is prepared for emission by the motor projection system. Broadbent, with something of this kind in view, called it a "propositionizing centre"; but whatever the definition suggested or the position taken, until the time of Marie all writers and investigators held to the view that Broca's centre was the seat of some special activity concerned with speech.

Briefly stated, the views of Marie are in the first place, that auditory, visual, and motor speech centres in the sense usually accepted do not exist; that aphasic phenomena are not due to interference with auditory, visual, or other images, but to intellectual deficit, this deficit causing difficulty in the comprehension of speech and interfering with numerous didactic processes. Marie also holds that Broca's convolution takes no part in the function of speech, nor its lesions in the production of aphasia. This is perhaps the most startling of his assertions. He admits that sensory aphasia, motor aphasia, and anarthria are clinical facts, but explains these, especially as regards motor aphasia, differently from his predecessors—asserting that motor aphasia is nothing but sensory aphasia with the addition of anarthria. Anarthria, as he understands the term, is due to lesion of the lenticula and its environment. According to him the regions, lesions of which produce true aphasia, are all included in Wernicke's zone.

Mental deficit is present in all cases of true aphasia. We have mental deficit in which the defect in language comprehension of sensory aphasia predominates, mental deficit in which the inability to comprehend the meaning of words and the method of using language predominates, and mental deficit in which both incapacities are commingled as in some forms of sensorimotor aphasia. The deficit is due to the destruction or disruption of clearly recognizable special cortical centres and associating tracts and the connections of such associated centres with the sensory and motor projection system and other regions of the brain.

The apraxia theory of Liepmann has lately come into much prominence. Speaking generally, apraxia is the inability to apply knowledge purposively, this lack being particularly manifested in skilled movements of all sorts. The motor apraxic, for instance, may be unable to use his upper or lower extremity in work which requires skillful adaptation of the muscular power which he possesses. The movements concerned with phonation, enunciation, and articulation cannot be so made as to yield intelligible speech, although the patient may be able to use the musculature, out of tune as regards speech, for other purposes like chewing, swallowing, or breathing. Aphasia defined in terms of apraxia is especially the loss of certain skilled acquisitions. A sensory and an ideational apraxia as well as a motor apraxia are recognized and many of the phenomena of aphasia are to be referred to their presence.

More clearly perhaps than any other theory suggested by writers on aphasia, that of diaschisis throws light upon disputed problems and brings more nearly together the views of different authorities as just presented. According to this doctrine enunciated by von Monakow, circumscribed lesions give rise to symptoms—speech disturbance, paralytic phenomena, etc.—much more marked than one would expect considering what is regarded as the special function of the part affected. Groups of associated neurones are injured and functionally affected because of destruction of some important part of the system. The disturbance of function is widespread as the connection of the parts affected are widely situated. Restoration in whole or part may take place as structures are released or new paths are formed.

One important fact emphasized by von Monakow and others is that lesions of the brain are rarely purely cortical. Cortex and subcortex are nearly always involved in a gross lesion. This being the case, it follows that in all lesions involving special centres like those which have been spoken of as centres for word seeing and word hearing, motor images, etc., not only is the circumscribed area of cortical gray matter which is supposed to be the particular rendezvous of the dynamism which gives the cortical focus its name, affected by the lesion,

but all the parts anatomically and physiologically connected with it.

Accepting for the sake of argument the existence of a centre particularly concerned with the auditory comprehension of words and phrases, if such a centre is destroyed, even in the most circumscribed fashion, results of this destruction must extend to every part with which this centre is associated. The doctrine of diaschisis is based upon the recognition of integrating mechanisms. The theories to which I have called attention, it will be seen, can stand only on the basis of the admission of the existence in the human cerebral cortex of numerous centres. The whole fabric of focal diagnosis built up by the work of thousands of investigators in the last fifty years, would fall to pieces if we failed to recognize this fact.

The second fact which needs to be emphasized is that these so called centres, wherever located, have formed few or many associations with each other and with other regions, according to their character and importance. The idea of a centre of special function seems to be a bugbear to many who prefer rather to deal with vague generalizations about association phenomena. The true way to look at this subject is to accept both centres and associating mechanisms, and thus harmonize views which would otherwise get too far apart. The very existence of associations indicates something to be associated. Associating structures are not simply paths which come from nowhere and go nowhere. They are lines of connection between important structural and dynamic foci.

We can accept Marie's idea, that disturbance and the impairment in the comprehension of language are dependent upon intellectual deficit, but we must also accept the explanation of Déjerine that this deficit in its turn is dependent upon destruction or disruption of a mechanism which is made up of associated centres. To accept any other view would throw us back upon some ancient theological or metaphysical theory of the existence of mind outside of the body.

Those who oppose the idea of centres for auditory, visual, and other images, and invoke association to explain the facts of aphasia, in the act of doing this call to their aid the refinements of localization. At the same time that they would exclude from consideration centres for auditory and visual images, some of them discuss the contributory effects and the interrelation of centres for touch, taste, smell, and the like in the explanation of speech phenomena.

The phenomena of apraxia can be explained only by the acceptance of the idea of highly specialized centres linked structurally and functionally together. Liepmann recognized this and the further fact that these cortical dynamic areas reach over from one to the other in the performance of their functions. The entire idea on which the apraxia concept is based is one which must recognize an extraordinary development of cortical centres and elaborate neural associations which are the substrata of higher human acquisitions. It is these acquisitions which are interfered with in the apraxic, whether with regard to limb movements or speech movements or language comprehension, and every skilled acquisition is represented by a definite cerebral centre and integrating mechanism.

Too much emphasis may have been laid on the use of the word "motor" in the description of what is termed Broca's or motor aphasia. In a certain sense it is correct to retain this designation. Topographically, the so called motor centre for speech —by which I mean the hinder part of the left third frontal convolution and the anterior half of the insula—is in close proximity to the accepted motor region of the brain, and to structures like the lenticula and internal capsule, generally recognized as largely concerned with motor functions. While Broca's convolution and the preinsula do not constitute a sensory area in the same way as the centres and zones of the temporal and parietooccipital regions, this so called motor speech area is in a broad sense a region concerned with language comprehension, at least with the comprehension of the meaning of words and the method of using them, but in admitting this it must be understood that its function is entirely different from the functions of the centres in Wernicke's zone. Most writers on the subject of aphasia who believe in the classical theory, have more or less fully recognized the role just indicated as that played by Broca's area.

In connection herewith I might refer to one of the methods suggested for discriminating between motor and sensory aphasia, namely, that of Liepmann, although I am not sure that this suggestion can be fully endorsed. Liepmann says that while it may be admitted that some cases of motor aphasia reveal a "defect of intelligence," this defect is always of the nature of a failure to understand the meaning of words, whereas the failure of the typical cortical sensory aphasic is in understanding the sound of words. In the motor aphasic this "defect of intelligence," if present, indicates that he cannot associate quickly enough the words of a sentence with their corresponding inner meaning. (*Neurologisches Centralblatt*, p. 290, April, 1908.)

Motor aphasics may not understand the meaning of words, but to my mind their deficit is more than this—they do not understand the method of using words. It may also be questioned whether the sensory aphasic's deficit is simply a failure to understand the sound of words.

What then is the nature of the process which is interfered with, sometimes to the point of extinction, in cases of motor aphasia? It is most difficult to understand this matter and still more difficult to put the explanation in didactic form. This difficulty is the rock on which many of those who have attempted to explain the phenomena of aphasia have split.

In the first place the process which is interfered with is in the truest sense an intellectual one; in the second place it is as complex as language itself. Presuming a patient with Wernicke's zone intact and the cortical or corticosubcortical motor speech region destroyed, this patient, theoretically at least and to a large extent in fact, can understand what he hears or what he reads, this comprehension being disturbed only in an indirect way because of his deficiency by diaschisis. The essential thing is that he cannot speak, that he cannot

translate what he hears and sees and thinks into vocal and articulative movements.

The motor aphasic, as all experience shows, apparently cannot recall all the words and phrases which he should use, but it can be demonstrated that this *Amnesia verbalis* is only a part of his deficit, and it may be doubtful whether it is a fundamental loss. For some reason, whatever his interior knowledge of names and the meanings of words and phrases may be, he cannot recall and use them for the purposes of speech.

At first sight the motor apraxia of Liepmann would seem to be a fairly good explanation of the aphasic's deficiency, as he has evidently lost the acquired skill which formerly enabled him to use for the purpose of speaking the musculature usually employed in speech. He is a motor apraxic, but this is not all. He is not only unable to use the motor executive apparatus for speech—which may be intact from his cerebral motor cortex to his bulbar nuclei and to the peripheral neuromuscular apparatus itself—but as some carefully studied cases show, especially those in which the motor aphasic has been retrained to speak, regaining in large part if not altogether the power to use his neuromuscular apparatus,. he is still crippled, and it may be greatly crippled, in his powers of utterance. In several cases which I have carefully studied, it has become evident that the partially retrained motor aphasic is unable to understand the method of using language by putting together the elements of emissive speech in correct form, although he may have become competent to use separate words, or even to some extent phrases and sentences. For him the grammar of language has largely disappeared, it being understood that the word, grammar, is used in a very broad sense to apply to the former acquisitions in speech of the ignorant, the highly cultivated, and those of intermediate linguistic accomplishments.

For the motor aphasic the fabric of emissive speech in all its complexities has been shattered or destroyed. If he is an apraxic, his apraxia is more than simply motor. It is ideational and perhaps in part sensorial. In brief, he no longer comprehends the methods of expressing himself in speech, at least he cannot make use of these methods for the purposes of speech. He has become asyntactic.

Syntax in grammar refers to the process by which words are put in proper relation to each other in sentences so that the full meaning of the phrase or sentence is shown. This is exactly one of the things which a motor aphasic cannot do, and the defect is entirely different from the limitations of a sensorial aphasic and from the language disorder of an anarthric patient. His affection indicates an interference with an intellectual process of cortical or corticosubcortical origin if we keep in view the idea of integrating mechanisms. If a patient has a lesion producing this affection, it will interfere, not only with his powers of "propositionizing," as Broadbent would say, but also in less or greater degree with his readiness in comprehending or using language in any way. Remembering these facts, we can understand the interference with both language comprehension and language emission which motor aphasics show.

In the form of aphasia under consideration the difficulty is, as Déjerine has pointed out, that the patient does not know how to speak, that is, how to use his cortical and corticosubcortical motor executive apparatus, which may be unaffected by disease, although in some instances it may take part in such disease and thus give a more extensive symptomatology.

At one time it was the fashion to speak of a motor aphasic as an ataxic aphasic, but unless a broad and loose interpretation is given to the word ataxic, the explanation involved in this expression is not sufficient. It is not a question of disorder so much as of disablement, as Wyllie puts it, and therefore *Asynergia verbalis* as suggested by Ladame is more explanatory and intelligible. Certain things which formerly worked together to the end that the individual might speak, can no longer be properly harnessed together for the purposes of speech. The truth of the matter is, no single term is sufficiently expressive and descriptive to explain the disorder called motor aphasia; nor is any single theory sufficient for this purpose.

All who have seen many cases of aphasia, however, recognize the fact that in the clinical type called motor aphasia are included phenomena which cannot be explained on the doctrine that they are the result simply of sensory aphasia plus a paralytic anarthria, and I do not think we should accept any definition of anarthria which does not include the idea of paralysis. Uncomplicated true motor aphasia, as I have tried to show, gives symptoms radically different from those of sensory aphasia and sensory aphasia combined with paralytic anarthria. These symptoms are preeminently, according to all the light which we have with regard to cerebral phenomena, *cortical* in their nature. This is not to say that we may not have a subcortical motor aphasia, such as Déjerine has described under the name of pure motor aphasia. The phenomena of this form of aphasia are, however, the resultants of interference with structures associating cortical areas or cortical and other regions of the brain.

On the part of those who hold to the classical view of aphasia, the concession is necessary that the speech centre which I have just been discussing, and which simply for convenience is called the motor or Broca's centre, has a larger structural area than the hinder part of the left third frontal convolution. For a long time I have taught that the anterior portion of the insula must be included in this speech area, and I would go further than this. It is not impossible that it may also in some individuals take in a part of the first temporal convolution where this merges with the insula. The bearing of this concession upon the discussion in cases in which aphasia has been absent in lesions of Broca's convolution or present in the absence of such lesions is at once apparent.

In connection herewith the observations of E. A. Spitzka, showing the redundancy of the preinsula and its exposure because of this redundancy in the brains of some highly educated men, especially of those with an unusual gift of language, is of much interest.

Like Mingazzini and unlike Déjerine, I believe that the lenticula has some function connected with

motor speech. It is a motor organ, and as Mingazzini also holds, functionally subdivided into separate centres concerned with movements of the face, the upper and lower extremity, etc. It is not improbable that its functions, in part at least, are concerned with emotional expression, whether this is exhibited in speech or in limb movements or in movements of any kind whatever. It is not in any way concerned with language comprehension. Its lesions render the patient's language less energetic and less fluent. Just as its lesions give rise to paralyses of the limbs which are partial and of a very special kind, so certain restricted lesions of the putamen of the lenticula, and especially of the left lenticula, may give rise to partial and peculiar affections of speech and expression.

S. A. Kinnier Wilson (*Brain*, XXXIV, 4, March, 1912) holds that the dysarthria present in his cases of bilateral lenticular degeneration was due to hypertonicity of the musculature of speech and is referable to the same cause as the dysphagia, tremor, weakness, spasticity or hypertonicity, contracture attitudes, contractures and emotionalism, the symptoms which on the positive side constitute his lenticular symptom complex. According to him the dysarthria and anarthria are not paralytic disturbances in the ordinary sense. With this view I agree, at least as I understand the matter. My own view is that destructive lesions of the lenticula cause what might be termed affective motor paralysis or paresis, although secondarily voluntary motor weakness results. There is an affective motor system as well as a voluntary motor system. The former acts on the latter both in an excitory and inhibitory way, that is, both as an energizer and regulator. As I have indicated elsewhere in my paper on the *Cerebral Mechanism of Emotional Expression*, there is a cortical affective motor zone or emotive motor zone. Speech movements, movements of swallowing, limb movements, and all forms of motor activity are influenced through this affective motor system which gives affective or emotional tone to voluntary movements. The cortical portion of this affective motor system is midfrontal, or midfrontal and prefrontal, and is connected by efferent or associative fibres not only with the thalamus but also with the lenticula. The latter Wilson does not appear to hold, if I understand his statements and his schema correctly.

The lenticula seems to me to occupy a position in the affective motor system comparable to that occupied by the thalamus in the great sensory pathway. This affective motor system communicates by the ansa lenticularis and other fibre systems with the cerebellorubrothalamocortical system and the cerebellorubrospinal system.

The steadying influence exerted by the affective motor cortex on the pyramidal motor system is interrupted in the lenticula when lesions occur in this ganglion, this interruption resulting in the disorders of speech and movement which give the lenticular syndrome of Wilson.

If the lenticula has nothing to do with the comprehension of language or the comprehension of the method of using language, but is a motor organ of particular type; and if it is true also that motor aphasia is a form of speech disturbance which includes a loss of language comprehension and yet one entirely different from that present in Wernicke's aphasia, it follows logically that motor aphasia cannot be the result of a lesion of Wernicke's zone plus one of the lenticula. It will be readily seen that the same reasoning would apply to a lesion of any part of the internal capsule purely executive motor in function.

The insula is part of Marie's lenticular zone, but if my contention be true that the insula or a part of it is linked with the hinder part of the third frontal convolution in the formation of the so called motor centre for speech, its lesions may give rise to the phenomena of motor aphasia. In my experience when the insula alone is affected, Broca's convolution escaping, the aphasic phenomena are not as persistent as when both are implicated in the disease. It is probable that the extent to which both the third frontal and the insula function as a language centre is conditioned by individual attainments in language.

In these remarks I have made no effort to add new facts to the data of aphasia. My object is simply to open the discussion by directing attention to some features of the subject most deserving of attention and most likely to attract polemical consideration. My views, however, are founded on personal observation as well as a study of the literature of the subject. The members of the society will recall my contributions to the subject of aphasia and those which I have made in collaboration with Doctor Spiller and others, most of which were presented originally either at the meeting of this society or of the American Neurological Association. I would especially direct attention to the articles and bibliography in my work on *Diseases of the Brain and Cranial Nerves*, etc., and to the article written in collaboration with Doctor Spiller on the *Symptomatology of Lesions of the Lenticular Zone with Some Discussion of the Pathology of Aphasia*, and to the article on the *Cerebral Mechanism of Emotional Expression* presented to the College of Physicians, March 6, 1912.

1909 CHESTNUT STREET.

THE CLINICAL INTERPRETATION OF APHASIA.*

By F. X. DERCUM, M. D.,
Philadelphia,
[illegible] legè; Consulting Neurologist, Philadelphia General Hospital.

For the purpose of the present discussion, I have thought it wisest to lay aside in the beginning the views of Marie, the evidence adduced in their support by Moutier and others, as well as my own conceptions, and first to establish clearly the *facts* present in aphasia. For this purpose I know no better plan than to have recourse to the clinical descriptions of Déjerine. This distinguished neurologist has given in his *Sémiologie du système nerveux* descriptions alike accurate and detailed, and of which the main facts at least must be accepted without question. Further, in turning to Déjerine for my

*Read before the Philadelphia Neurological Society, February 27, 1914.

facts, I feel that I cannot be accused of a spirit of unfairness because I happen not to accept the classical view of aphasia of which he is so able an exponent. Finally, these descriptions of Déjerine have the added value that they antedate alike the appearance of the views of Marie and the outbreak of the now famous controversy to which these views gave rise.

As is well known, Déjerine separates aphasia into two forms, namely, "motor aphasia or aphasia of expression" and "sensory aphasia or aphasia of comprehension." The first Déjerine characterizes as follows:[1] "In motor aphasia, the loss or marked diminution of the number of words which the patient is able to emit, constitutes the predominant symptom of the affection. According to the state of the other manifestations of language, we distinguish two varieties of motor aphasia; true or cortical motor aphasia and pure or subcortical motor aphasia."

It will serve the purpose of clearness best if we begin with the form termed by Déjerine, pure or subcortical motor aphasia. In this form, Déjerine tells us, "the disturbances of spontaneous speech are identical with those of cortical motor aphasia; most frequently indeed they are much accentuated. The entire vocabulary may be wanting and the patient has only a few syllables at his disposal. The same is true of reading aloud and of speech by repetition. In singing, the articulation of the words is as impossible as in the spoken speech and the musical air does not aid at all in the articulation of the word which is always also defective.

"But if he is not able to emit words, the patient has preserved the motor images of articulation. He makes as many efforts at expiration as the words contain syllables (Déjerine). He grasps the hand as many times as there are syllables or letters in the word (Lichtheim), or rather he indicates, by means of his fingers and very rapidly, the number of syllables which the word, which he cannot pronounce, contains. There are here phenomena which are wanting in cortical motor aphasia. The mimicry of the patient is perfect, very expressive, and the intonation remarkably well preserved.

The integrity of the notion of a word and, in consequence, of the interior language, explains here the perfect preservation of spontaneous writing and of writing under dictation; as well with alphabet blocks as with the pen. Mental reading is perfect, normal, without even a latent disturbance. Auditory images are spontaneously called forth as in the normal individual.

After all, in this variety of motor aphasia, the sole morbid phenomenon consists in the impossibility of articulating sounds in all their modes but all the other modalities of language are intact and the interior language functions as in the normal individual.[2]

In other words, the patient in this form comprehends in a perfectly normal manner both spoken and written language, writes perfectly both spontaneously and at dictation, and unmistakably has a clear idea of the words he wishes to utter. The sole symptom consists in an inability to utter the words. That this condition is not one of loss of language knowledge goes without saying, and that it should not be included among the aphasias should, I think, be urgently insisted upon. Its true nature is further revealed by the symptoms observed while the affection is in process of recovery. In the case recently shown by myself before this society, the patient presented a condition typical of the description by Déjerine which I have just read. Immediately after his apoplectiform attack, the patient was unable to utter a word, though all the other modalities of language were preserved; this condi tion persisted for several weeks, when in response to active specific treatment the patient began to talk. His words were at first so imperfectly articulated, so dysarthric, that they could not at all or with difficulty be comprehended. Little by little his enunciation became more distinct until at present, while still measurably dysarthric, he can be quite readily understood. Clearly this patient was at no time aphasic, merely anarthric, his anarthria giving way in the course of his improvement to dysarthria. To say that there was here at first a paralysis of articulation in which improvement was attended by an incoordination of articulation, does not lessen the truth of the statement that aphasia was at no time present.

The other form of motor aphasia so called, Déjerine terms "true cortical motor aphasia or aphasia of Broca."[3] His description, which the time limit necessarily placed upon this discussion will not permit me to reproduce in detail may be briefly summarized as follows: First, there is in Broca's aphasia a loss of motor speech, *i. e.*, "the cortical motor aphasic has lost the ability to translate his thoughts into speech"; secondly, this loss is not absolute: quite commonly there is a retention of words like yes and no, together with occasional other words or phrases, oaths, expletives, and the like. Thirdly, the disturbances of speech are not limited to the loss or impairment of emissive speech, but disturbances of speech comprehension are also present. Says Déjerine:[4]

In reading aloud, or in repeating speech (spoken before the patient) the disturbances are the same as in spontaneous speech and exist in proportion to the changes in the latter. Mental reading is always changed. (Trousseau, Gairdner, Déjerine et Mirallie, Thomas et Roux.) In the beginning of the affection, the patient is most often incapable of reading; but he will scarcely admit this unless forced to or later when he has recovered. It is necessary, therefore, to study this symptom with care and to make every effort to reveal it. The patient may pretend to read as in the normal state, but sometimes he holds his book upside down or keeps on reading on the same page. At other times he guesses a word of a sentence and points to it triumphantly. Most frequently he recognizes his name; sometimes his first name; more rarely, the names of his wife and children. After the familiar words, the alexia involves the common words of which the patient may be entirely ignorant, or he recognizes them in greater or lesser number according to the case; a word recognized may enable him to guess the sense of a phrase; ordinarily the patient reads, but without comprehending, and with him it is as though he saw the word for the first time; the word does not awaken any longer the corresponding idea. In the less pronounced cases, the patient comprehends reading but forgets immediately that which he has read.

Side by side with this verbal blindness, and in the more pronounced cases, one may observe letter blindness. The patient is incapable of recognizing all or a part of the letters of the alphabet. The asyllabic patient recognizes letters, but is not able to assemble them into syllables. The dis-

[illegible] Traité de [illegible] Paris, Masson, [illegible]

[illegible]

[4] P. 400, *loco citato.*

turbances of reading, very pronounced at first, may remain intense indefinitely. Most often they improve and more rapidly in general than the disturbances of articulate speech, so that the alexia may disappear almost completely while the motor aphasia still persists.

At an advanced period of the affection, when the aphasic is improved, reading seems perfect, only there still persist latent disturbances to which I, together with my pupils, have called attention. The patient guesses the meaning of a part of the sentences instead of comprehending all of the words; he recognizes the form of a word, but no longer understands it, whether it is written in letters or in syllables arranged vertically or horizontally. (Thomas and Roux.) Finally we should note that in these patients, save as a complication, there is never present a hemianopsia or contraction of the visual field.

As regards ordinary conversation, after the first few days following the onset of the affection the patient comprehends all that is said to him, and audition is always remarkably better preserved than reading or speech. Notwithstanding, the functioning of the auditory images is not absolutely perfect. If we speak a little rapidly to these patients, it often happens that they do not comprehend completely or at first take in the complete or exact meaning of a sentence. The same thing is observed when we utter a sentence a trifle slowly. Thomas and Roux have indeed proved, by the following experiment, that the functioning of the auditory images is changed in cortical motor aphasia: If we show to a patient an object and pronounce before him several syllables, among which are found, it may be, the first syllable of the name of the object, it may be the last syllable, perhaps the intermediate syllable, the patient ought to recognize it. In cortical motor aphasics, the first syllable is quite often recognized, but the last syllable or the intermediate syllable never. Spontaneous writing and writing at dictation are absent or much changed. Copying, on the other hand, is preserved and the patient transcribes printed matter into manuscript.

Finally, and this is a point of first importance as much from the clinical as from the theoretical point of view, although in cortical motor aphasia the disturbances are manifestly more accentuated on the side of spoken speech and of the written language, *all of the modalities of language are involved*.[5] The varieties, in accordance with the degree of this alteration, are very numerous; but we always meet with this law; change of all of the modes of language with predominance on the side of articulate speech. After existing for a period, variable in duration, improvement may make its appearance, verbal blindness becomes less pronounced, spontaneous speech also returns, but more slowly; so that in individuals greatly improved, the disturbances of speech are still pronounced at a time when the patient comprehends all, or almost all, that he reads; but this fortunate termination does not often ensue, save after many years during which the patient has remained more or less alexic. It is necessary, therefore, in the study of these cases and in order to form a definite judgment, not only to base this upon the condition present, it may be several years after the beginning of the affection when the latter is on the high road of improvement, but also to take into account as much as posible the states which followed the onset. We can understand, moreover, without difficulty, that with these patients the course of the improvement is not by any means parallel and uniform; there may exist individual differences, more rapid improvements of one group of images; this does not impair at all the general conception of cortical motor aphasia, but on the contrary confirms it if we take into account the various periods of its history. Finally, in a general way and given an equal degree of lesion, the chances of amelioration and, therefore, of recovery are greater the younger the individual.

Déjerine states here in the clearest and most emphatic manner, that there are present in true cortical motor or Broca's aphasia, not only motor elements, but sensory elements as well. Finally—and the importance of this will appear later—"singing is ordinarily much better preserved than spoken speech." Says Déjerine[6] "In singing, the patient not only preserves the air of the song but more often articulates words which he cannot utter in speaking. I have observed for a long time at the Bicêtre a patient whose spontaneous speech had been reduced to a few words, and who in the evenings would give concerts to his comrades at the hospital and would sing, without difficulty, the ballads of *Mignon* and of *If I Were King*. But if with these patients we wish to make them recite as a piece of verse the ballad which they have been singing, the matter becomes much more difficult and with certain of them impossible."

Let us now turn our attention to the form which Déjerine calls sensory aphasia or aphasia of comprehension. Says Déjerine:[7]

In motor aphasia, the disturbances observed predominate on the side of the articulation of words. The lesion involves the centre of the motor images of articulation. Here, on the contrary, it is the centres of reception which are the seat of lesions, and in keeping with this the comprehension of speech and of reading is impaired.

Are there one or more sensory aphasias? For the sensory aphasia of Wernicke, Kussmaul has substituted two clinical forms; word blindness and word deafness, recognized also by Charcot. Wernicke never ceased to oppose this division. The most recent clinical and anatomopathological studies are in agreement in demonstrating the correctness of the conception of Wernicke. There is only one sensory aphasia, comprising at one and the same time the disturbances of the comprehension of spoken speech and the disturbances of reading. These disturbances may from the beginning be pronounced, one as much as the other, and may in this wise persist during the entire life of the patient, but when the lesion involves more particularly the auditory images or the visual images, the alteration of the images attacked will assume the first importance in the clinical picture; however, in such case the defect of the function giving rise to the symptoms assuming the secondary importance will not be less clearly marked, at least in the beginning. Later the images may seem to recover more or less integrally their functions without, however, that restoration being at any time complete. It is then that we have to do with the verbal blindness or the verbal deafness of Wernicke; but there are present in such case only terminal forms, remainders of a primary sensory aphasia; it is the latter which I will take as a type of my description.

Sensory aphasia may begin in several ways; as a consequence of an apoplectic attack, severe or even without loss of consciousness, the patient suddenly begins to stammer and losses the faculty of understanding words read or heard. At other times the affection is established slowly, progressively, and the subject is conscious throughout. Finally it may be established in several stages by successive attacks. Whatever may be the mode of origin, sensory aphasia once established is characterized in the following fashion:

Word deafness is the symptom which is the most striking. The patient, whose auditory acuity is normal, is incapable of comprehending words spoken before him. He resembles an individual transported into a foreign country, the language of which he does not understand. The words strike his ear as different and varied sounds, but not as representing ideas. The patient has then the appearance of a deaf person; the verbosity of his language, the incoherence of the words which he utters, lead also to his being regarded as attacked by confusion or with mental alienation. The degree of the verbal deafness is, moreover, very variable, according to the case. As a general rule, the patient recognizes his name and turns his head in the direction from which he is called; more rarely he recognizes his first name; exceptionally other familiar words (names of his wife and of his children). The common words may be altogether lost; sometimes certain of them are preserved; finally the verbal deafness may be very slight, may involve only some special words, or may be absolutely latent; it is then that it becomes necessary to unearth it, to search for it with care for fear that it may pass undetected. The patient understands a word of a phrase and, thanks to this, guesses the rest; his reply is

[5] Italics Dercum's.
[6] P. [illegible]
[7] P. [illegible]

precise and accurate; but if we change the idea of the phrase, while preserving the principal word, the reply of the patient does not vary. Most frequently, and by reason of the disturbance of the spoken language which exists in sensory aphasia, it is not by the verbal response of the patient that one can estimate the greater or less degree of verbal deafness which he presents, but rather by instructing him aloud to perform this or that act; to take a chair and seat himself, to rise, to walk, to pick up some object, etc. In the case of polyglots, verbal deafness may involve only one language. In general it is the language most familiar to the patient, the one of which he makes the most use—whether this be his own or his most recently acquired language—which disappears the last; it is the latter also which is the first to reappear when the condition of the patient improves. Not only does verbal deafness involve words, but it may also involve figures. It may also involve musical notation. The patient no longer recognizes airs formerly familiar and no longer distinguishes one from the other—*amusia*.

Verbal blindness is to vision what verbal deafness is to hearing. The patient is incapable of reading; written words have for him no meaning, "he simply sees black upon white"—*alexia*. Nevertheless, visual acuity is often perfect; the patient recognizes the shape, the detail of the letters; he is capable of recognizing the most delicate and most minute variations of two handwritings, but he does not comprehend their meaning. He sees the design, but not the idea which attaches to it; he is unable to pass from the written word to the idea which it represents.

As regards the intensity of the symptom, we find here the same varieties as in verbal deafness. As a general rule, the patient recognizes his name when placed among several other words differing from it only in some letters; much more rarely he recognizes his first name and some common words. The verbal blindness may be of such a character that the patient cannot even recognize a single letter (*letter blindness*); sometimes, although able to recognize them, he is incapable of assembling letters into syllables (*asyllabia*), nor into words (*verbal blindness*). In the less pronounced forms, the patient understands certain words, and guesses, thanks to them, the meaning of the sentences. It is necessary then to use extreme care in examining the patient, in order to bring out clearly the latent disturbances of mental reading.

The disturbances of reading involve equally printed matter or manuscript. Every letter, every word, printed or in manuscript, remains no less comprehensible to the patient. When the patient is able to write a word, . . . he is incapable of reading that which he has written; no matter what artifice he may employ, he is not able to succeed. In tracing with his finger the form of the letters, he does not always succeed in comprehending the meaning of the word formed; this experiment succeeds only indeed among patients who can write spontaneously—*pure verbal blindness*.

Ordinarily, verbal blindness involves only letters and words. The memory of figures is relatively better preserved; the patient is able to read figures, tens, hundreds, and to do some simple sums in arithmetic, although, as a rule, his aptitude for calculation is lessened. Verbal blindness may also involve musical notation; the notes have lost all sense for the musician, who thus becomes incapable of deciphering a single line of music—*musical blindness*. On the other hand, the comprehension of emblems is well preserved. One of my patients, incapable of comprehending the letters R. F., immediately said *République française* when the letters were framed, as in a seal. Finally, in the pure form of verbal blindness the patients play cards or dominoes, read rebuses, recognize a cipher language, the cipher and secret language of their business houses, etc. In fine, they have lost only the faculty of bringing to the conventional printed or written sign, the value corresponding to the idea in the ordinary language.

When we analyze this description of sensory aphasia, we find portrayed conditions strikingly identical with those observed in the aphasia termed true motor or Broca's aphasia. Thus, we note that Déjerine's description of the alexia present agrees, even in detail, with that given by him of the alexia present in Broca's aphasia. The alexia may be pronounced in either form or it may be so slightly marked in either form as to necessitate, both in sensory aphasia and in Broca's aphasia, care in the study of the case lest the symptom be overlooked.[8] The fact remains that it is always present in both forms.

When we turn our attention to the comprehension of spoken speech, we note that failure of comprehension is present in both forms, more marked in the so called sensory form, but none the less equally present in both. How emphatically Déjerine has insisted upon its presence in Broca's aphasia we have already seen. Again, he tells us that most frequently in sensory aphasia, it is not by the verbal response of the patient that we can estimate the greater or lesser degree of verbal deafness which the patient presents, but rather by instructing him aloud to perform this or that act, to take a chair and seat himself, to rise, to walk, to pick up some object, etc.; in other words by employing the very method —that of serial instructions—which Marie has so successfully employed in demonstrating the loss or impairment of the comprehension of spoken speech in Broca's aphasia—a loss which Déjerine, as we have already seen, not only abundantly admits, but insists upon.

Between the sensory phenomena of Broca's aphasia and the sensory phenomena of so called sensory aphasia, there is clearly no difference in kind, and if it be maintained that there is a difference in degree, this disappears when we study individual cases. As is pointed out in Déjerine's description of sensory aphasia, just read, the verbal deafness and verbal blindness differ greatly in degree. Déjerine tells us that verbal deafness is very variable in sensory aphasia, that it may be very slight, and must indeed at times be sought for very carefully in order that it may not be overlooked. In the verbal blindness of sensory aphasia, Déjerine tells us that we find the same variations as in verbal deafness, and that it is necessary in the less pronounced forms "to use extreme care in examining the patient in order to bring out clearly the latent disturbances of mental reading." Clearly the sensory phenomena of so called sensory aphasia differ neither in kind nor in degree from those of Broca's aphasia.

If the sensory phenomena of Broca's aphasia and the sensory phenomena of so called sensory aphasia are the same, the two affections should properly be regarded as identical, or, to use the expression of Marie, as constituting a "unity." Evidently Broca's aphasia consists of a loss of language knowledge to which the symptom of the loss of emissive speech has been added; that is to the phenomena of a so called sensory aphasia there are added the phenomena of Déjerine's pure or subcortical motor aphasia or Marie's anarthria. So called sensory aphasia, or Wernicke's aphasia, as it should properly be termed, merely differs from Broca's aphasia, if it differs at all, in that in it the loss of language knowledge is more profound; there is no difference in kind. In his paper on aphasia, anarthria, and apraxia, presented before the Section in Neuropathology at the International Congress in London,[9] Déjerine asserts that it is not exact to assimilate the alexia of

[8] *Loc. cit.*, pp. 400 and 402.

[9] Part 1, *Transactions*, Section of Neuropathology, p. 8.

Broca's aphasia with that of sensory aphasia. "In motor aphasia, aphasia of expression," says Déjerine, "the comprehension is only disturbed for the images, which, in the genesis of language, are subordinated to the motor act, that is to say, the visual images."[10] Similarly, he says, "As to the disturbances of the comprehension of spoken words which motor aphasics present, . . . they are not all those of verbal deafness. They consist of a defect of evocation of the verbal auditory image." He does not tell us what he means by the visual image being "subordinated to the motor act" nor how nor why this subordination gives rise to alexia. Again, he does not tell us in what respect the "defect of the evocation of the verbal auditory image "differs from the same defect in sensory aphasia. Surely it cannot be asserted that either of these explanations explains, but whether we accept or reject them, they certainly embody the continued recognition by Déjerine of the disturbances of comprehension of language, both written and spoken, in Broca's aphasia; further, they do not attempt to explain the latter away. The clinical fact of the loss remains. Further, Déjerine's explanations imply a recognition of the intimate relations of the various portions of the language function to each other and lead, it seems to me, inevitably to an admission of the unity of that function.

Let us next take up the much discussed question of the mental state of aphasics. Déjerine[11] tells us, in speaking of so called sensory aphasia, that "the intelligence is always involved. By the simultaneous loss of the comprehension of spoken speech and of reading—verbal deafness and blindness by the disturbances which they present on the side of spoken speech and writing—paraphasia and jargon aphasia, agraphia, these patients find themselves cut off from all communication with their fellows. The intellectual weakness in them is in general more marked than in the motor aphasic, but it may sometimes be almost nil. . . . The intellectual deficit betrays itself in the mimicry, in the gestures, which are always less expressive than in the normal man; nevertheless, the sensory aphasic is ordinarily capable by means of gestures to make his desires and his thoughts understood, at least partially. There exist of course in this respect quite marked differences according to the case." Again he[12] says:

> With every patient aphasic from lesion of the zone of language, the intelligence is diminished. This fact has been known for a long time and Trousseau had already insisted upon it. On the other hand, the intelligence is intact in aphasia having their origin in lesions outside of this zone—the pure aphasias.[13] The degree of change varies, it does not follow any rule, but it is more accentuated in sensory aphasia than in motor aphasia. Many elements for that matter enter into the problem, into the estimation of the factor of intelligence in these subjects.
>
> Everything depends upon the extent and intensity of the lesion, on the greater or lesser involvement of neighboring regions, on the condition of the vessels and of the circulation, and, above all, upon the age of the patient. These are merely so many factors which may bring about variations of one kind or another in the intellectual functions of this or that aphasic. Finally, it must not be forgotten that an insane person may become aphasic just as an aphasic may become insane. The question must indeed be settled in each particular case by the aid of a minute observation of the patient. The same remarks apply to questions of a medicolegal character—criminal matters, restraint, the validity or nonvalidity of a will—which may arise in regard to a patient attacked by motor or sensory aphasia.

Finally we are told[14] that in "total" aphasia, "the intellectual deficit is much more marked than in sensory or motor aphasia." We may ask ourselves frankly, what has Marie ever maintained more than this? It is Déjerine who first used the expression "intellectual deficit," not Marie.

Marie, some years ago, pointed out that intellectual deficit manifests itself in three ways: First, in the deficit seen in cases of arrest and imbecility; secondly, in cases of mental disease in which dementia is present; and, thirdly, as seen in aphasia. In his recent paper before the Section in Neuropathology of the International Congress,[15] Déjerine says that it is necessary to distinguish the intellectual deficit which results from the loss of the interior language from the psychic disturbances which result from the extension of the lesion, and that these two varieties are totally different. This every one is prepared to admit, though in actual practice it is difficult, if not impossible, to separate the general mental loss from the specific mental loss dependent upon language involvement; such losses are largely commingled. We can fairly ask ourselves the question, What is the difference between the mental loss admitted by Déjerine and the mental loss maintained by Marie? In truth, none can be discerned, save that Déjerine prefers to deal with a loss of "images," motor and sensory, while Marie prefers to deal with the impairment of mental processes. To me the latter method of view appeals more strongly. To me the deficit is a mental impairment which, because of the usually extensive character of the lesion, is evidenced by losses other than those pertaining to language alone. How they can be elicited, Marie has abundantly shown by his method of serial instructions, especially when the latter embody acts or duties which the patient has been in the habit of performing all his life, such, for example, as cooking. A patient, who was formerly very skillful at cooking, makes a lamentable failure of his tasks after he becomes aphasic, due not to his loss of language knowledge, but to his general mental impairment. Time unfortunately prevents a full discussion of this portion of the subject.

The basic or fundamental function of the cerebrum is, as Jacques Loeb has pointed out, that of association, and the recognition of articulate sounds is best interpreted as a function of association. In my paper read before the Neurological Section of the International Congress at Budapest, in 1909, I pointed out the analogy between the function of stereognosis and that of the comprehension of speech. In stereognosis there is an association of tactual qualities; in the recognition of articulate sounds there is an association of acoustic qualities. Viewed in this light, much of the mystery attached to the speech function disappears, and the region

[10] *Loco citato*, pp. 01 and 02.
[11] Semiologie, p. 412.
[12] *Loco citato*, p. 418.
[13] By this expression Dejerine refers to the aphasias which [illegible] subcortical.
[14] *Loco citato*, p. [illegible].
[15] *Loco citato*, p. 02.

of Wernicke becomes but a part of the great general posterior association area of Flechsig.

Again, the sound associations implied in the comprehension of speech are as fundamental as the tactual associations implied in the recognition of objects. Finally, the comprehension of spoken speech is a faculty as old as the human race. On the other hand, the faculty of the recognition of written speech is a faculty of inconceivably more recent development; it is indeed the acquisition of but a few generations. Naturally, therefore, it is a faculty most readily disturbed or lost, and it is for this reason that lesions giving rise to aphasia, give rise first and foremost to alexia, no matter what the other cognate phenomena may be.

Other interesting phenomena of aphasia, more especially those to which I have myself applied the term, reenforcement, time will not permit me to discuss. These deal, first, with the variable phenomena of emissive speech observed from time to time in the same patient—sometimes on the same day or on successive days; secondly, with the variations of emissive speech—the increased flow of words—observed during excitement; and, finally, with the remarkable phenomena observed in singing, in which, for example, a man limited ordinarily to Yes and No, may emit words embracing a wide vocabulary. Lastly, I would call attention to the phenomena of so called "optic aphasia." Here again we may borrow the terse and admirable description of Déjerine. Says the latter,[16] "The patient when an object is shown to him, although he recognizes it—and knows in consequence what are its properties and its uses—is incapable of naming it; but if he touches it, smells it, tastes it, he immediately pronounces its name. The visual image of the object is incapable of awakening the corresponding motor image of articulation; on the other hand, the tactile, olfactory, gustatory memories easily awaken this image." Clearly we have here the phenomena of a sensory reenforcement; one that overcomes the results of broken pathways of association. Reenforcement phenomena are also to be observed, it need hardly be added, under other circumstances, and are constantly taking place in the normal individual.

1719 Walnut Street.

TUBERCULOSIS OF THE RIGHT TESTICLE SECONDARY TO REMOVAL OF THE LEFT TESTICLE FOR TUBERCULOSIS.*

Orchidectomy with Apparent Cure.

By Victor Cox Pedersen, A. M., M. D.,
New York,
Associate Urologist, St. Mark's Hospital.

Men, Women,

It is a well known fact that tuberculosis in any organ of the urogenital tract on one side of the body has a tendency to involve other organs and the opposite side in more or less regular progress and



Fig. 1.—Showing the scar of the first operation with the infolded skin and sinus at the top about one year previous to the author's operation.

sequence, unless checked by suitable measures. There is nothing new in this fact because it is only the analogue of the same results in tuberculosis of the lungs, for example. Seemingly in no organs of the genital group is this more true than in the testicles; when one has been invaded by tuberculosis its fellow is apt to suffer after a year or two. The



Fig. 2.—Showing the sinuses, thickening of the scrotum, slight involvement in the groin on the right side, previous to the author's operation.

*Case report presented to the New York Society of the American

following case report of this condition is of sufficient interest to deserve addition to similar histories in medical literature and has the peculiarity of being concerned in a Chinaman who himself and whose interpreters spoke English so little that a full history could not be obtained.

CASE. C. C., Chinese, aged about forty years, married (No. 12,699), December 28, 1912. Diagnosis: Tuberculosis of the right testicle with sinus, secondary to removal of the left testicle for tuberculosis with sinus persisting about one year previously. No good former history could be obtained as to family, general, or venereal disease. The present illness seemed to have dated back about two years and to have been situated in the left testicle which was removed in one of our large hospitals about one year previous to his first visit, with an excellent result except for a small

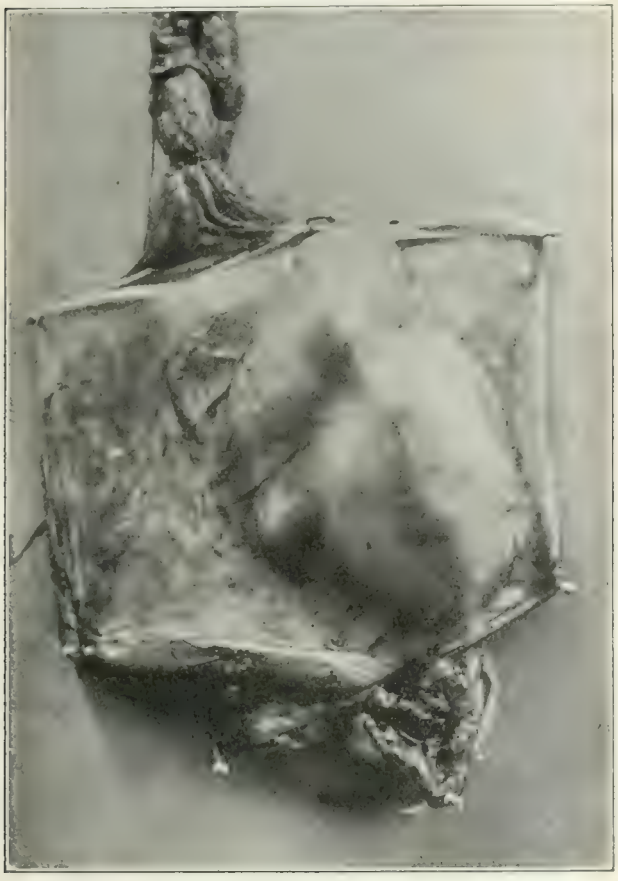


FIG. 3.—Gross specimen of lesions in testicle, epididymis and sinus after opening and extending the serous sac.

sinus persisting in the upper part of the wound near the root of the penis. During the year following this operation the patient seemed to have suffered from urinary symptoms, and received from a laboratory a suggested diagnosis of pyelitis as shown in the urinary analysis given below. After the administration of urinary antiseptics under the author's care, this suggested diagnosis was abandoned. In all three specimens at this same laboratory and in one at St. Mark's Hospital search was made for Bacillus tuberculosis with negative results. The gonococcus was also absent and the infecting organism was stated to be Diplococcus catarrhalis.

Cystoscopy done just before his discharge failed to reveal tuberculosis of the bladder or signs of it in either kidney or ureter so far as the outlets into the bladder could reveal. All the urinary specimens were centrifugated and at least four slides were prepared. No guineapigs were injected. The specific gravity ranged from 1,019 to 1,029. Turbidity was present only in the specimen previous to the operation at his first visit through decomposition. Acidity always normal. Indican in excess once. Albumin

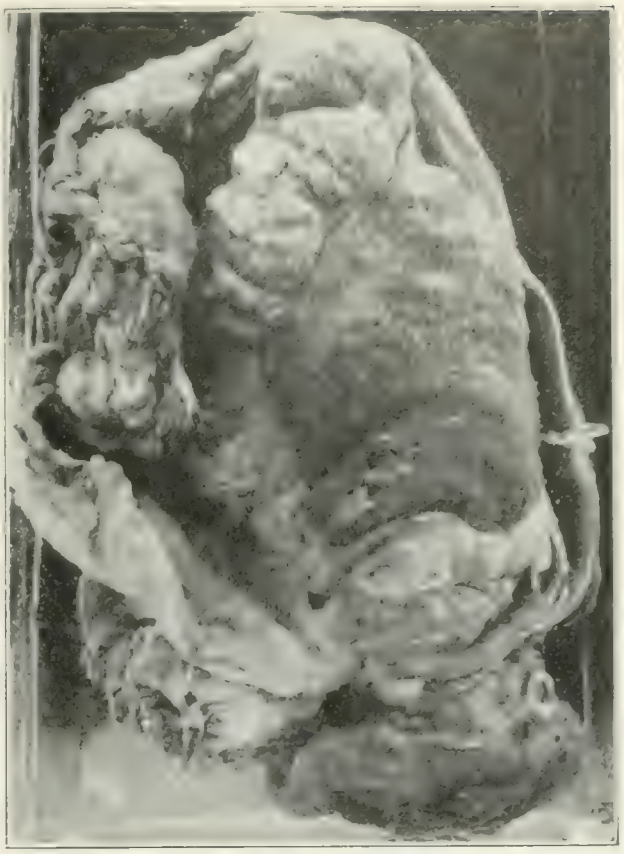


FIG. 4.—Lesions of testicle and epididymis dissected [illegible] their coverings. (By courtesy of the Department of Pathology, Cornell University Medical School.)

present in traces. Urea normal. Microscopical features were, pus cells, bladder and urethral cells, except in the specimen taken three months before his first visit, when cells from the pelves of the kidneys, also small flat and round cells and patches, were present. This was also the only specimen in which casts were a feature; the others contained only those commonly seen in most urines. The last uranalysis, done in August, 1913, nearly eight months after the operation, was the best and nearly normal



FIG. 5.—Photomicrograph [illegible]

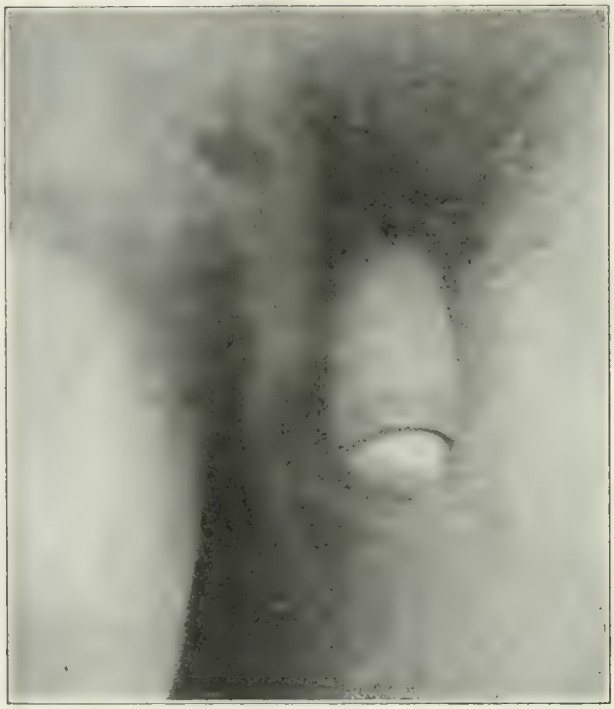


Fig. 6.—End result of second operation with depression of scar due to abscess at the groin, scrotal wound hidden by the hair.

throughout. Physical examination revealed a thin Chinaman without pulmonary tuberculosis, but with the usual signs of an opium user. It might be well to add that his wife was a white woman also an opium eater and possibly a cocaine fiend. After remaining faithful to him during his sickness in the hospital she left for parts and doubtless men unknown about the time of his discharge. On the left side of the scrotum was the wound of the former operation, ending in a sinus near the root of the penis. There seemed to be no deposits of tuberculosis in scrotum or scar or even in the sinus, which appeared to be kept open only by infolding of the skin. On the right side, the typical condition of tuberculosis of the testicle, epididymis, and vas deferens was present, with a recently ruptured abscess at the dependent portion of the scrotum, where two or three sinuses led up to the testicle. The prostate was not involved and only the right seminal vesicle showed lesions, the left having atrophied so as to be almost impossible to make out. These features are shown well in Figs. 1 and 2.

The operation was done at St. Mark's Hospital during the first week of January, 1913, by the following steps. The sinuses were protected as well as possible from distributing their pus about the field. The cord was exposed high up at the superficial abdominal ring, dissected free with only very gentle instrumental manipulation, divided between two ligatures, and both stumps were cauterized with pure carbolic acid. The distal stump in the grasp of a strong artery forceps was now pulled gently out of the wound and the testicle dissected free with gauze on the finger until the wall of the abscess was reached in all its circumference of attachment to the testicle. The gland was now returned to its bed in the scrotum and a uterine forceps was passed down to this line of attachment and the scrotum opened upon it as a guide. It was thereafter easy to remove the testicle along this line with the scissors, with the least possible danger of infecting the wound with the sinus discharge. The upper wound was closed with a small rubber tissue drain, removed at the end of twenty-four hours, and the lower wound was closed with a cigarette drain, removed at the end of three days and replaced with gauze, and finally stimulating dressings. The upper incision healed by primary intention at first, but after about three weeks showed a small abscess, undoubtedly tuberculous, which healed very quickly and permanently. The drainage canal of the lower wound was slower, as its lower limit showed the indolent infection of the abscess, possibly from the presence, in the lymphatics and tissues along the margin of the wound and on the skin, of infecting material notwithstanding all precautions taken. This wound healed finally without subsequent breakdown. During his stay in the hospital and his treatment in the clinic and until, contrary to advice, the patient disappeared from view, he received injections of tuberculin in ascending doses after the manner described and employed by Trudeau, and all the medication, diet, and hygienic methods for the tuberculous possible in the circumstances of the man's ignorance.

He remained under care until March, 1913, and reappeared in August of the same year, having gained at least twenty-five pounds and correspondingly in health, strength, and spirits. I hardly knew him when I first saw him on this occasion. With the gratitude so often shown by the Orientals he insisted on making me presents of a tea set and various articles of silk.

The pathological report was obtained through the courtesy of the Department of Pathology at Cornell University Medical School. It describes



Fig. 7.—Sinus of first operation healed after dimpling in was reduced by tree incision to permit approximation.

tuberculosis of the epididymis. The gross specimen is shown in Fig. 3 with the serous sack of the testicle spread and pinned out, and with the openings of the sinus turned forward below. The nodulations throughout the epididymis are clearly in view before dissection. Fig. 4 shows the lesions dissected free of their serous covering with early changes in the body of the testicle. Fig. 5 is a photomicrograph at 100 diameters of one of the typical lesions.

The end result is shown by Figs. 6 and 7 taken in September, 1913. Fig. 6 shows the upper wound healed after the abscess alluded to in the description of the aftertreatment. The lower wound in the scrotum could not be brought out definitely without shaving, which the patient refused. Fig. 7 shows the healed sinus on the left side after the dimpling in of the skin had been corrected sufficiently to permit healing, leaving considerable infolding of the scar for about three quarters of an inch. The end result spoken of above remains unchanged as far as the writer knows, as the patient has not been seen since the early part of September, 1913, and letters are unheeded.

45 West Ninth Street.

CEREBROCEREBELLAR DIPLEGIA.*

With Report of an Illustrative Case.

By L. Pierce Clark, M. D.,
New York.

Last year I undertook to outline the nature of flaccid palsy in certain types of children.[1] In that study of the disorder or condition, which I named cerebrocerebellar diplegia, the conclusion was reached that it was a relatively rare disease (many neurologists have never seen a case); that it had a probably unknown intrauterine causation which resulted in a more or less permanent disablement of the motor functions of the cerebellum and forebrain, and in a state of mutism and idiocy, accompanied by atonia, astasia, dysmetria, incoordination, and a generalized palsy in effect. The report was illustrated by several classic cases of the condition from my service at the Randall's Island institutions. Since the above mentioned report nothing new regarding the nature and pathology of the disorder, so far as I am aware, has appeared. I shall therefore take occasion to present in brief notes a new case, which, however, shades out into Batten's type of cerebellar diplegia, and which is most closely allied to his first case in his 1903 series. Lest many may be unaware of the essential nature of Batten's[2] type, I may say here that his series of cases on the whole showed, with individual variations, a marked ataxy of the cerebellar type independent of any rigidity, and many children thus afflicted had superadded cerebral symptoms of mental defect. In addition to the cerebellar ataxy, there were nystagmus, dysmetria, astasia, dysarthria, and in some, dysphagia. There was often present also a peculiar tremor, in part choreic and in part of a coarse intention type. In the course of a few years of observation the children gradually recovered from many of the foregoing symptoms; in nearly all, however, a mild degree of ataxy, a slow, deliberate, and uncertain gait, and a speech disorder of the dysarthric type usually remained. In speaking there was also a slow drawling and overprecise pronunciation of syllables. In many the enduring speech disorder was not dissimilar to that heard in mild and anomalous cases of disseminated sclerosis. Batten believed that while all cases showed preponderant and more or less permanent cerebellar symptoms, many of the cases exhibited not a few symptoms of a cerebral character, and one must believe that the injury not unusually produced a lesion which extended far beyond that which one might consider as merely a cerebellar involvement. It is rather surprising to note nowhere in Batten's report of cases, a single mention of undue flaccidity of joints and muscles, although he specifically states that in the majority of his cases little or no rigidity obtained. Just as some of us would make the diminished tonus of muscles and relaxed joints the dominant symptom in the clinical approach to our type, so in his series Batten makes the incoordination and ataxy the central setting.

Little doubt can be entertained that both our cases and Batten's form a large group of palsies of children which have heretofore been counted as cases of brain agenesis, pointed out in my first paper; or it may be these cases have been classed with the anomalous types of Little's disease, cerebral diplegia. This conclusion is the more obvious as one looks over the extensive literature of cerebral diplegia. Unwittingly many observers have reported under this head a series of symptoms which are plainly cerebellar in character and should in future be given a properly credited anatomical assignment to a grouping of the symptoms in cerebellar disease. No doubt this tardy reminder is the less necessary, as a more definite understanding of the function and disorders of the cerebellum and midbrain is shown in many recent clinical studies of tremors, ataxias, and disorders of muscle tonus. As an illustration that former groups of cerebral palsies included cerebellar symptoms, one may cite the statement of Freud, who, after outlining two cases showing many symptoms distinctive of Batten's type and not a few seen in mine, states that none of these symptoms are foreign to those commonly found in many cerebral diplegias, although much less pronounced in the common picture of the disorder. As a matter of fact, one acquainted with cerebral diplegias knows that incoordination, a certain degree of ataxy, nystagmus, and dysarthria, dysmetria, unsteadiness of hands, and a monotonous slow speech, usually counted as cerebellar symptoms, are very frequently encountered in the study of a large number of cases of diplegia. Again, some cases of cerebral diplegia present but little or no mental defect. That the injury in such is probably basal and in no wise involves the cerebral cortex, the heretofore commonly held opinion, must be revised in future. At least, one should view such lesions in the light of their being preponderatingly cerebellar diplegias of the agenetic type. The main lesson we derive from these discursive remarks, is that many

*Read before the New York Neurological Society, February 3, 1914.
[1]Infantile Cerebrocerebellar Diplegia, of Flaccid, Atonic-Astasic Type. *American Journal of Diseases of Children*, v, June, 1913.
[2]Congenital Cerebellar Ataxia (Cerebellar Diplegia). *Clinical Journal*, xxii, 5, May 27, 1903.



Fig. 1.—Shows the extreme flaccidity of all the muscles of the upper arm in extreme external rotation of the hand.

cerebral diplegics have accredited to them symptoms solely or preponderatingly cerebellar, and that my type of cerebrocerebellar diplegia has its seat of injury equally in the cerebellum as well as the cerebrum, and that Batten's group is akin to mine, but with the maximum lesion in the cerebellum. In point of prognosis, my type is the worst, because the cerebral injury is so great that it may not take up the delinquent functions of the cerebellum, consequently the children remain idiots and never walk. The ordinary cerebral diplegias have a little better outlook for physical and mental development, while Batten's type is the least severe of the three classes and is subject to great improvement, in some instances amounting to practical cure.

The case, which I shall report, was referred to me for examination and diagnosis; it was that of a boy suffering from mental deficiency with *peculiar motor defects.*

Case. The family history was entirely negative aside from the fact that the mother was rather stout, with a prominent thyroid gland of the goitrous type. She was thirty-eight years old when our patient, the third child, was born, who was thirteen and one half years younger than the preceding child. When pregnant about eight or ten weeks, she sustained a great psychic shock in the sudden death of her brother, and this induced symptoms suggestive that an abortion was to be expected. The mother was nauseated, became faint and dizzy, and was prostrated; many blood clots were passed. She remained quiet in bed for several days and then was up and about as usual, although blood clots continued to be passed for four weeks thereafter. The viability of child was obvious at the fourth month, and the pregnancy went on uneventfully to term. The labor was normal, no instruments being used. The child weighed 7 pounds, but was very puny and delicate looking. He was breast fed for three weeks and bottle fed thereafter. He was a restless, crying baby ,and required much attention. He was able to sit up at one year and walked at three years, but stumbled a great deal and dragged his feet, especially the left. The gait was wide and rather straddling; the feet were turned out in walking as though the boy had "flat feet" (cerebellar station and gait). He talked at three years of age. The speech was stammering, indistinct, and slurring, and only partially understood by the uninitiated. His balance in standing was always poor and he suffered frequent falls. In reaching for or handling things, there was a great disproportion in the kind and extent of movements, and "his hands fell short of the objects reached for or overshot the mark." In short, there was no rhythm or cadence in the movements. His attention was poor and he early disliked to use his hands or engage in any sports that brought out his motor defects.

Three months ago, at my first examination, he was a rather slender, poorly nourished boy two or three years behind in physical growth. He was three feet six inches in height, and weighed 57 pounds. He Bineted to six years plus in intellectual development, but was not equal to a child of two years in motor coordination or use of his hands. He had practically no faculty of sustained attention, was very restless, talkative, and constantly tried to explain various physical tests of strength and agility he or others might be made to do. His manner of speech was silly and infantile; his sentences for the most part were incomplete, mere fragments of ideas which he incessantly poured out in a desultory manner. No conversation was possible until he was banished from the consulting room. He worked up to a climax of excited declamatory speeches and then suddenly ceased for lack of breath, only to resume the incessant chatter as soon as he could get his breath again. In short, he appeared mentally as a low grade imbecile, and would have been classed as a more or less hopeless noneducable defective if it were not for the occasional utterance of extraordinary sentences of keen observation regarding himself and his home associations. A full analysis of the grotesque and dramatic points of his lopsided mental development will be dwelt upon at



Fig. 2.—Shows enormous flaccidity of the elbow, wrist, and finger joints. The patient had just used his right hand to bend the fingers of the left hand back so that they touched the forearm, and in the interval of release of the fingers this photograph was taken.



FIG. 3.—Another pose of the upper extremities in crossing the arms upon the back.

length at another time. The physical status present in our patient is our great concern at this time. The examination of the muscles and joints revealed, especially in the upper extremities, an enormously exaggerated motility of the joints. There was no muscular resistance and the different segments of the limbs, especially the arms, could be maintained easily in the abnormal positions without pain or even discomfort, as shown in the photographs. The parents stated that until a year ago the boy could do any contortionist act with his legs, even being able to lock both feet back of his head without touching his hands to these members.

The maximum of flaccidity is shown only in the arms now, and is best seen in the wrists and fingers. As a result of the gradual improvement in the hypotonia of the legs, voluntary control in station and walking has greatly improved. The ataxia and incoordination disappeared about a year ago; the feet were no longer everted and the gait ceased to be a straddling, skidding one, and dragging of the feet ceased. The left foot, the one yet most showing hypotonia, is still a little awkward and dysmetric in tests. In point of fact slow and unusual movements of the lower extremities still show dysmetria. The reflexes are about normal, being a little diminished for a child of his age. There is no Babinski. The speech defect under even a few months' training, the vicious associations with colored servants in his Southern home having been removed, still shows the dysarthria common in these cases.

It is unnecessary for me to say that a general neurological examination proved entirely negative aside from the symptoms touched upon in the text as significant of the cerebrocerebellar syndrome. Never having seen mild types of cerebrocerebellar diplegias, I was not prepared to witness the rapid improvement this case showed under an intensive training laxity of joints and muscles, and the poses laxity of joints and muscles, and the photographs taken but a month ago are no longer demonstrable. I can substantiate rather than discount Batten's statement that if the cerebellar function is the damaged part solely, the condition speedily improves. Just why these functions should have taken such a sudden start for the better in the last two years, and even with greatly accelerated progress in the past three months, I am unable to say.

However, the strange lack of muscle tone, the discontinuity of arm and hand movements caused by the absence of a cadence of rhythm and release between flexors and extensors of these parts, may still be easily demonstrated. The dysmetria, the lack of proportionate adjustments of movements to the object at hand, still make for rapid mental and physical fatigue in all educative effort. Even now when the arms, outstretched and resting in the examiner's hands, are suddenly released, they fall as though lifeless. Much of the listlessness and apparent shiftlessness of pose of these little patients is due to the enormously conscious effort constantly required to force the muscles of the body into coordinated function. As yet this boy can take but three or four minutes of active motor exercise without fatigue. Such a series of symptoms as we have here spells a cerebellar defect. The mental defect marks an unmistakable cerebral injury as well. The injury or developmental defect in these two parts of the brain is correlative as far as motor functions are concerned, but obviously real and lasting improvement of the mental function is very slow whenever the cerebral damage or defect has been great.

There are all possible grades of this disorder, which may range from the severest type shown in my first paper to that of the slightest as seen in Batten's type. Just as my reports of cases shade from the severe types of the disorder to those which have a more favorable prognosis, so Batten's type grades the other way. His severest case and my mildest one are therefore not greatly dissimilar. Again, as Förster first pointed out and as many of my cases corroborate, the flaccid type of palsy as a whole may shade out rather imperceptibly into that shown in the classic spastic syndrome. In the ordinary spastic diplegics one not infrequently sees choreic movements, suggesting the coarse intention tremor of disseminated sclerosis, showing that other than cerebral functions have been involved, though the condition is typical cerebral birth palsy. One of Förster's cases presented opisthotonos of the neck and back, whereas complete flaccidity obtained elsewhere in the body. In a typical flaccid case he found a Babinski, distinct spasticity in the lower extremities, and increased reflexes. Careful tests of very many spastics will show they have many flaccid joints which can be rationally explained only on the ground that the cerebellar structures have been damaged, and because of their very unobtrusive presence they are overshadowed in the clinical picture by the obvious spasticity. Bearing the foregoing points in mind, one surmises that the so called motor defects of the so called nonorganic feebleminded and imbecile class are really dependent upon cerebellar defects and not cerebral lesions solely. While this fact is readily admitted and tacitly assumed by many writers, it has not been sufficiently emphasized by those engaged in the training of the feebleminded. Medicopedagogists consider the dysmetria, discon-



FIG. 4.—Shows the flaccidity of [illegible] extremity, [illegible]

tinuity and incoordination frequently encountered, physical corollaries to the mental arrest or defect. When these motor disorders are considered in their true genetic origin as a cerebellar and not a cerebral defect, gymnastic efforts requiring quick and easy equilibrium tests will prevail over mere bench and tool work. One is seriously impressed that the feebleminded have been too strictly thought of in terms of cerebral defects and not enough as instances of cerebellum and basal ganglia disorders. The natural inference to be drawn is that the educational appeal for the proper development of the feebleminded must be as broad as the functions of the normal structure of all parts of the brain and not be narrowed to a strict system of pedagogics applied solely to the mental faculties.

I shall not reiterate here the elaborated thesis of the nature, etiology, and pathology of the infantile cerebrocerebellar diplegias of the flaccid type in my first paper other than to say, in conclusion, that the state is probably an agenetic disorder, possibly due to an intrauterine injury in exceptional instances; that it affects the functional development of the cerebellum and cerebrum and causes a wide range of paralytic symptoms, among which flaccidity of joints and muscles, dysmetria, speech defects, and general incoordination and mental defect are the more common. The value of its further study will not be so much confined to making this rare disorder the clearer clinically and pathologically, but such researches will help us to understand the obscure nature and pathology of all the cerebral palsies of children, and even throw light upon the nature of cerebral and cerebellar deficiencies now classed as simply feeblemindedness and idiocy.

I trust I may be pardoned for stating here that studies upon the whole cerebral palsy material in the Randall's Island service are under way; first, to take from the ordinary cerebral palsies all the symptoms referable to disturbance in cerebellar functions to make clearer the cerebral syndrome of this type of brain palsy with extraneous symptoms excluded from the picture; second, to determine if it be possible to indicate categorically the larger or grosser parts of brain damaged in these palsies, especially in the more definite light of the researches of the functions of the cerebellum and midbrain, to the end that all treatment of the different types of palsies in children may be improved and materially enhanced. A detailed study upon the foregoing lines will soon be forthcoming.

84 East Fifty-sixth Street.

DERMATITIS EXFOLIATIVA IN AN INSANE PATIENT.*

Fatal Result.

By Robert M. Alexander, M. D.,
Wernersville, Pa.,
Physician to State Asylum for Chronic Insane.

Case. F. R., male, Russian (Poland), aged thirty-nine years, was admitted to Norristown State Asylum, September 29, 1909, and transferred to the Wernersville State Asylum for Chronic Insane, June 1, 1911. Father born in Russia (Poland), farmer, used alcohol moderately, died aged fifty-three years; cause unknown. Two brothers and four sisters living and well. Patient stated upon admission that he had never been ill. After coming to America he was employed in the Bethlehem Steel Works, and for last four years in the zinc mills at South Bethlehem, Pa.



Fig. 1.—Front view of chest and arms, showing inflammatory character of the lesions, pigmentation, and exfoliation.

Physical examination on admission showed patient to be well nourished. Pupils equal and medium in size and reacted well to light and accommodation. Tongue coated and fissured and had fibrillary tremor at the tip. Pharynx relaxed, abdomen flat, soft, and slight tenderness over large bowel. Appetite good, bowels regular. Chest, well formed, expansion equal on both sides and of good extent. Chest measured 37 inches, expanded 40 inches. Auscultation and percussion negative. Apex beat in fifth interspace and mammary line. Pulse full and of good tension. Arteries palpable. Systolic blood pressume 110. Diastolic 80. Rate 64. Denied venereal disease. A trace of albumin and a few hyaline and granular casts were found.

Soon after admission to the Wernersville State Asylum for Chronic Insane, a slight scaly eruption appeared on patient's chest and back, this did not persist, and though it recurred it did not become general until November 8, 1913, when it was found to have extended over patient's entire body, while pigmented areas, previously unnoticed, appeared on the chest, back, and arms. The urine at this time showed a heavy cloud of albumin and was loaded with granular casts. The disease was definitely exfoliative, without oozing, and mildly inflammatory. On the scalp, palms, and soles of the feet the process was of a branny character. By the sixth day the conjunctivæ and nasal mucous membrane were involved. Under treatment consisting of bismuth subgallate, one half dram, glycerin one dram, and saturated solution boric acid one ounce, the skin cleared up in four days, after which a hot pack was given, but it did not produce sweating. The patient died on the fourteenth day of the disease from acute nephritis.

*Case reported before Berks County Medical Society, December 18, 1913.

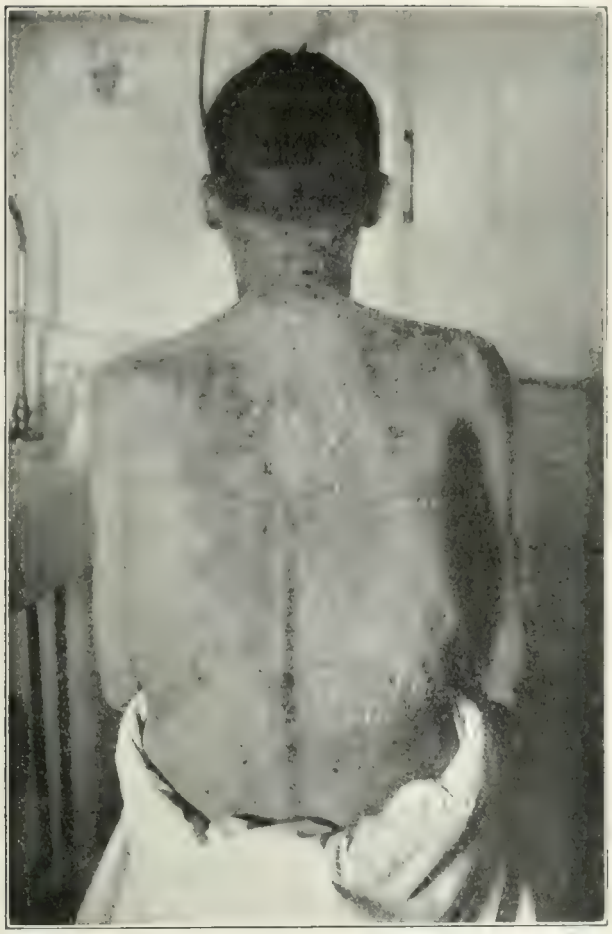


FIG. 2.—Showing same condition as in Fig. 1; same patient (Alexander).

LARYNGEAL CANCER.*

BY HARMON SMITH, M. D.,
New York.

CASE. J. P., tobacconist, aged fifty-five years, presented himself at my clinic at the Manhattan Eye, Ear, and Throat Hospital, October 4, 1913. He was assigned to Doctor Mulholland, who has ably assisted me in all operative work upon the patient. In earlier years he had been a hard drinker and had smoked more or less continually. The patient had complained of hoarseness over a period of two years. The first part of this hoarseness was intermittent, but for the last six months it had been persistent. The family history was negative and there was no history of syphilis. He complained of discomfort only in the larynx and slight pain in the left ear at times. Upon examination of the larynx, a small ulcerated area appeared upon the left true vocal cord at the junction of its middle and anterior third. From the borders of the ulceration one or more papillomatous looking projections could be seen. The surrounding tissues were red and indurated, presenting the picture of syphilis more than any other lesion occurring in this locality. The glands were uninvolved. October 7th, a Wassermann test was made which proved negative. October 28th, a small piece of the growth, embodying one of the papillomatous projections, was removed for a microscopical examination, and was reported by the hospital pathologist to be papilloma. Following this procedure there was rapid extension of the tumor and on November 2d a second piece was removed from the deeper structures of the cord. Microscopical diagnosis of this piece was cancer.

With a view to performing some radical operation upon the larynx, probably a hemilaryngectomy, I requested the visiting physician to examine the patient carefully to determine if he was a good operative risk. This examination revealed chronic kidney trouble, the urine showing an abundance of albumin together with hyaline, granular and bloody casts. The heart showed mitral stenotic and aortic regurgitant murmurs. The arteries were atheromatous. From this examination I was advised very strongly against employing any general anesthesia, even rectal, for operative work. Considering the dangers incident to operation, I naturally thought of radium and consulted one of the well known surgeons of this city relative to its employment. He advised a preliminary tracheotomy, after which the radium could be placed in the larynx and left there for the desired length of time without disturbance to respiration. On November 29th, under cocaine anesthesia, I performed a low tracheotomy. The patient withstood the effects of the operation well and the wound healed both above and below the tracheotomy tube by primary union. One week after the tracheotomy I again submitted a history of the case to the surgeon who consented to use his radium, but after explaining more fully the physical conditions coincident with the cancer, and likewise relating the rapidity with which the tumor had grown after removing the piece for microscopical examination, he decided that it was probably beyond the reach of radium and declined to apply it.

Being disappointed in the radium, I determined to try to remove the half of the larynx under local anesthesia. December 11th, under cocaine and adrenaline anesthesia, I made a quadrilateral flap with the expectation of removing the left half of the larynx, but upon opening the thyroid cartilage and freeing the outer part of the left wing of muscular attachment, I found that the tumor had not passed through that side of the larynx and was apparently still intrinsic. I then peeled the perichondrium away from the inner side of the cartilage, carrying the mucoperichondrial elevation well posteriorly, also extending it to the cricoid cartilage inferiorly and to the rim of the thyroid cartilage superiorly. I then excised the tumor at the farthest points of elevation and felt that the malignant mass had been entirely encompassed. Examination of the part removed, however, revealed the fact that posteriorly the tumor had extended beyond where I had made my incision. The quadrilateral flap, made for the purpose of hemilaryngectomy, sloughed at its inferior border and continued to suppurate for some weeks subsequent to the operation. The patient suffered but slight discomfort following the operation, and after the second day was able to swallow sterilized milk and water, although I relied principally upon rectal feeding for nourishment.

In the latter part of December, Doctor Freudenthal kindly consented to give us the use of his radium tube, and upon request placed it in the larynx for a space of twenty-four hours. Following this application there was considerable edema, and the appearance of the laryngeal tissues simulated that of syphilis. During the first part of January there appeared to be a recurrence of the growth on the opposite side of the larynx, so Doctor Freudenthal again applied the radium, but, owing to a laryngeal

*Patient and history presented before the Section in Laryngology, New York Academy of Medicine, February 25, 1914.

spasm during which the tube was expelled, it remained in place only a few hours, so that the effect from radium of the second application can be considered nil. Since that time the laryngeal space has been steadily encroached upon by the growth of the opposite side, and there is now a recurrence on the side originally involved. The tracheotomy tube has remained in place since its introduction, as there is insufficient space within the larynx for respiration. The patient now suffers at times from pain, particularly in the left ear, but has slight discomfort in swallowing. Considering the underlying constitutional disturbances, the progress of the disease will unquestionably be rapid and ultimately fatal. Following the operation the patient has gained in weight and strength and for the past six weeks has been able to come and go from his home to the clinic.

OBSERVATIONS.

In a man past fifty years, with a history of hoarseness extending over a long period of time, with slight localized discomfort or pain, occasionally referred to the ear, with decreased movement of one side of the larynx, with a wartlike tumor, where the base is well supplied with bloodvessels which radiate from it toward the outer side, one may reasonably conclude that he has cancer to deal with. In this particular case the laryngoscopic image indicated syphilis, and a correct diagnosis was still further delayed by the microscopical findings in the first piece which indicated papilloma. If the patient had not had the heart, kidney, and arterial complications and could have stood a general anesthesia, laryngectomy in the first instance would probably have proved successful. Under cocaine anesthesia it is difficult to remove the larynx, although there are a number of successful cases on record, where local anesthesia alone has been employed. In subsequent cases I shall make deep injections into and around the laryngeal structure, of novocaine solution, before any cutaneous incision is made. In this way I believe the deeper parts can be more successfully anesthetized than when the injections are made superficially and at varying times during the process of the operation. While radium has benefited many superficial epitheliomata, it has not been definitely determined that it will materially affect deep seated laryngeal cancer.

44 West Forty-ninth Street.

PITUITRIN.

Its Abuse and Dangers.

By A. J. Rongy, M. D.,
New York,
Attending Gynecologist, Lebanon Hospital,
and S. S. Arluck, M. D.,
New York,
Former House Surgeon, Jewish Maternity Hospital.

We are fully aware that the physiological action and the indications for the use of pituitrin in obstetrics have been thoroughly discussed, and little can be added to such exhaustive studies as those of Edgar and others. It is nevertheless surprising that notwithstanding all that has been published in reference to its proper use, how vague and uncertain its action seems to be in the minds of a great number of the profession.

Pituitrin is at the present time passing through a period of enthusiasm common to all new therapeutic agents, and its use is therefore fraught with all the dangers associated with remedies the definite indications of which have not as yet been clinically standardized. In the case of pituitrin, its use has been more readily adopted by the profession at large, for not only has it tended to relieve the patient, but it also promised to spare the attending physician unnecessary waste of time. In a measure we cannot blame the general practitioner for its indiscriminate use, for obstetricians are still divided in their opinions as to its therapeutic indications. Those having the more extensive experience with this drug, however, have to a great extent narrowed its field of usefulness.

The writing of this article is prompted by the many inquiries of practising physicians regarding the indications and effect of pituitrin. An article was recently published, in which the author cites his experience with ten cases. He concluded that pituitrin seems to be practically devoid of harmful effects, and that its dangers are few and easily guarded against; also that it is of value occasionally for the induction of labor, at or near term.

In the light of our experience, extending over a series of about 300 cases, we find that such conclusions are not only not warranted, but may even prove dangerous. When this product was first placed at the disposal of the profession, we began its use in the obstetric services of the Jewish Maternity and Lebanon Hospitals. At that time the indications for the use of this drug were not clearly understood and it was therefore used indiscriminately, with results at times most discouraging. Close study and observation of its physiological action, however, soon made it apparent that its application is best restricted to certain definite conditions; to these we shall refer later.

For the proper conception of the therapeutic effect of pituitrin, a brief reference to its physiological action is necessary. It is now well established that the action of this drug is transient in character, lasting at most an hour. Its action is primarily peripheral, acting on all unstriped muscle, producing strong contractions, which are most marked in the muscle of the uterus. It is essential, however, that these muscular structures maintain their state of tonicity, for pituitrin will, very poorly if at all, stimulate an already tired or fatigued muscular organ. Pituitrin also secondarily raises blood pressure.

Clinically the principle action of this drug is on the muscular structure of the uterus, particularly after labor has set in, causing prolonged and more powerful contractions and not infrequently changing their character from tonic to that of clonic. The latter fact must be constantly borne in mind, for should this emergency arise, delivery must be rapidly terminated or an anesthetic administered, in order to prevent rupture of the uterus or asphyxia of the child.

Having the physiological action of pituitrin before us, we are better able to outline its indications in

the field of obstetrics. Since it does not primarily produce contractions of the uterus, its efficacy *per se*, in induction of labor is questionable. This was proved in a series of experiments carried out by Dr. A. M. Hilkowich about three years ago, in his service at the Jewish Maternity Hospital. He injected a number of patients at term, intramuscularly, with the view of inducing labor. In all these experiments the end result was uniformly negative. The only condition noticed in a few instances, was short feeble contractions which quickly disappeared. Even were it possible to induce labor by the use of pituitrin, it would still be of little practical value, for in order to have labor continued and terminated it would necessitate the frequent repetition of the drug, with the possibility of producing untoward effects.

On the other hand, pituitrin is a great aid in cases in which pregnancy is interrupted in the early months, either by the use of the catheter or bag. In these cases it has been our custom to give it as soon as there is evidence of uterine contractions. When given in this stage, the uterine wall is thick, the contractions are not violent, and the resistance offered to the fetus is comparatively slight. All this justifies the administration of pituitrin in this class of cases. It must be remembered that it is to be given only after labor pains have already commenced, for as previously stated pituitrin by itself will not induce contractions. It has been our experience in the induction of labor by the catheter method, the only procedure followed by us, that while labor nearly always sets in, still the contractions are irregular, frequently feeble, and sometimes disappear entirely. By alministering pituitrin during this early stage, the pains become more regular, more intense, and labor is more likely to continue uninterruptedly.

It is a well known fact that spontaneous rupture of the uterus takes place in cases of dystocia, owing either to a rigid and undilatable cervix or to an existing disproportion between the presenting part and the pelvis. It is but reasonable to assume, that when contractions are reinforced by so active a drug as pituitrin, rupture is much more likely to occur. We are personally familiar with two such cases and know of several others.

Inertia uteri.—No one condition in obstetrics is so little understood and so improperly treated as inertia uteri. The underlying causes are usually not correctly analyzed. The practice of obstetrics would be greatly improved if the fundamental physiological principles governing the functioning powers of the various organs were applied to inertia uteri.

It has long since been demonstrated that the tonicity of muscle is limited, and that after undue exertion, muscle passes into a state of fatigue; in this condition it will not respond to stimulation in any form. A period of absolute rest is necessary before it will regain its tonicity. In inertia uteri we have an absence or loss of muscular tone, usually due to overexertion, and therefore the most rational procedure would be to put the uterine muscle at complete rest until its tonicity was fully regained. Any artificial measure to make this exhausted muscle contract will not only fail in its purpose, but may even become harmful. We can now very readily see why pituitrin is contraindicated in this condition; the uterine wall is thinned out, the retraction ring is very high, and to try to induce contractions under such circumstances, even were it possible, would be very unsafe.

Our rule is to leave the patient alone until sufficiently rested. This rest is best obtained by the administration of morphine, hypodermically. After the patient has rested for a short period of time, the uterus regains its irritability and labor pains again set in. If we now find that the contractions are feeble or irregular, pituitrin may be given to reinforce them. We cannot too strongly emphasize the fact that a state of exhaustion of any organ in the body requires rest, and this is sometimes best obtained by the use of morphine, particularly in the case of uterine inertia. For some reason physicians are reluctant to use this drug, fearing its baneful effects upon the child. We have seldom found such to be the case, even though the doses of morphine were at times very large. Morphine, in addition to inducing sleep and rest, causes relaxation of the circular muscle of the cervix and thus helps dilatation.

Malpositions.—Many authors recommend the use of pituitrin in some of the malpositions, also in slightly contracted pelves. From our observations, we believe it to be unsafe. It is impossible to foretell how pituitrin may act in a given case, for apparently some patients are more susceptible than others, with the result that it will produce violent contractions in one case and prove ineffectual in another. Bearing this fact in mind, we feel that it would be inadvisable to produce long and continued contractions in a case in which the resistance to the presenting part is great, either because of malposition or contracted pelvis. This procedure may prove to be harmful not only to the mother, but also to the child. As a general rule pituitrin should not be used in any form of dystocia, unless labor has progressed to a stage where artificial delivery can be readily accomplished with reasonable safety to both mother and child.

Pituitrin is never indicated in cases having high blood pressure, particularly in the toxemias of pregnancy. It is also contraindicated where an increase in blood pressure may prove harmful, for it is well established that pituitrin quickly raises blood pressure from twenty-five to forty mm. This fact has been vividly impressed upon us by those cases in which pituitrin was administered intravenously. This sudden increase is likely to be harmful in various forms of cardiac disease. In order to study the exact changes in the blood pressure, we injected pituitrin intravenously in seventeen cases and found that within two or three minutes after injection, the pressure rose on an average from twenty-five to thirty-five mm. and remained so from thirty to forty minutes. This rise was often followed by a sudden fall below normal.

CONCLUSIONS

1. Pituitrin does not induce labor pains.
2. It should not be used in the early part of the first stage of labor, for its action is too transient.
3. It should not be used in complete inertia because of danger of rupture of the uterus.

4. It is contraindicated in cases of dystocia due to malposition or contracted pelves.

5. It should never be used in cases in which a sudden rise of blood pressure may prove dangerous.

6. A single dose of pituitrin may be used as an adjuvant in cases where pregnancy is interrupted, either by catheter or bag, and only when contractions of the uterus have already set in.

7. It should be used only in cases in which the cervix is dilated or dilatable and the presenting part engaged in the pelvic outlet.

8. It should be used cautiously in cases in which the fetal heart sounds are feeble or irregular.

9. It should never be used unless a general anesthetic is within easy reach, for the contractions may become so violent that rupture of the uterus becomes imminent.

Finally, the conclusions reached in this paper are based purely on our personal observations of the action of this drug in a very large series of cases. We feel that it may not be in accord with the experience of many other observers, still we maintain that in order to obviate many complications, which at times may become very dangerous, this drug should be used conservatively.

We appreciate its value when properly used; we realize its dangers when given injudiciously, and we cannot but advise the general practitioner to be conservative in its use.

62 West Eighty-ninth Street.

A NEW URETHROSCOPE.

Designed for the Diagnosis of Pathological Conditions in Men and Women.

By Granville MacGowan, M. D.,
Los Angeles.

Some thirty years ago, while Nietze and Leiter were struggling with the problem of obtaining a lamp that would illuminate the bladder, Grünfeld, of Vienna, demonstrated the possibility of obtaining very excellent views of the urethra from the meatus to the bladder neck by means of straight tubes made of vulcanized rubber, down which rays of sunlight reflected from a head mirror were passed. With a little practice one could learn to manipulate this instrument without difficulty. The images obtained were wonderfully clear, but the sun was not always shining. The treatment of pathological conditions of the urethra, such as granulation, papilloma, small abscesses, and the inspection of strictures, could be and were carried out very nicely with this instrument by a few people. Not many had the patience to learn to use it, and it was regarded by the profession in general more as a curiosity than a useful adjunct to the surgical armamentarium.

When the small incandescent lamp was invented, advantage was taken of it immediately by Valentine and others to illuminate the urethroscope. There arose two types of urethroscopes, one deriving its illumination from a lamp attached by a flange and pin to the tube on its outside, the light from which is reflected into the tube—the Leiter-Otis type. This is a very satisfactory instrument for those whose eyes possess the full power of accommodation. Its great disadvantage is that the lamp is much in the way in making applications through the tube. In the other type of instrument—the Valentine—the light attached to a long metal handle is carried down the tube to its distal extremity so that the object is lighted by direct instead of reflected rays. This type, the best example of which is that of Doctor Luys, of Paris, also has its shortcomings. The glare is apt to distort the image, and radiations from the lamp may befog or cloud the field. The ends of the small lamps, being conical, are often sufficiently sharp to catch on or entagle themselves in the cotton on the applicators, and, as they come in direct contact with fluid drugs used in treatment, or with blood which exudes from any granulated or wounded surface that may be present, the removal of the lamp is often necessary to cleanse it.

The best instrument, and it is far from being a perfect one, is that of Koch, which is manufactured by the Electro Surgical Instrument Company of Rochester, N. Y. The cylinder of this urethroscope is so constructed that it carries an auxiliary tube at the bottom, through which the light carrier is passed, thus keeping it entirely out of the field of vision. The light, when in place, lies exposed in a groove beneath the floor of the main tube within about three mm. of its distal extremity, but not in the way of the use of an applicator, and not liable to be soiled by secretions in the field unless these are very abundant. The sheath of the tube acts as a reflector and the whole field is illuminated clearly and evenly, giving an undistorted image, approaching closely to that obtained from sunlight. These tubes are made in sizes from 20 to 30 Charrière. The larger the size of the tube that can be used with comfort, the better the image, the more easy the manipulation, and the better the results obtained. The most useful pattern for examination and treatment is the straight type, and the calibre 24, 26, and 28 Charrière.

The male urethra in its posterior part, when the man is erect, is almost vertical and contains three curves. As it leaves the bladder, it presents a conconcavity toward the rectum in the supramontane portion and then a convexity forward at the colliculus, then again it extends in a long flowing S from the colliculus into the membranous urethra as a concavity upon the posterior wall.

It is easier to introduce a tube with a Mercier prostatic curve like the model of Swinburne, but this gives a view of the floor of the urethra exclusively. The roof and sides are frequently the site of pathological changes, so that a tube of this pattern has limited usefulness. The straight tube is the one which should be used by the surgeon. To learn to use it, he must exercise great patience, and persevere in learning the trick of changing the angle of the instrument at the triangular ligament so as to pass it easily from the posterior portion of the bulb into the membranous urethra. The writer uses only the straight tubes, and he has had his instrument so constructed that it is easier to pass into

this portion of the urethra than any other urethroscope that is manufactured.

To examine the posterior urethra with a straight tube, the subject is requested to remove his trousers and drawers and should be placed supine upon the operating table with his feet supported by leg rests made for the purpose and attached to the table, or by a small platform or chair of convenient height. He may lie flat upon his back or his shoulders may be raised by pillows or by a hinged flap in the table itself, or he may lie upon a table that has a Trendelenberg attachment so that the penis and perineum can be brought to the level of the eye of the operator seated upon a low stool in front of him, the patient's thighs so supported by the leg rests that they are well flexed upon the abdomen. The external genitals and their immediate neighborhood should be well cleansed with soap and warm water, then with warm water alone and then with a solution of bichloride or oxycyanide of mercury one to 4,000. It is presumed that the table is provided with

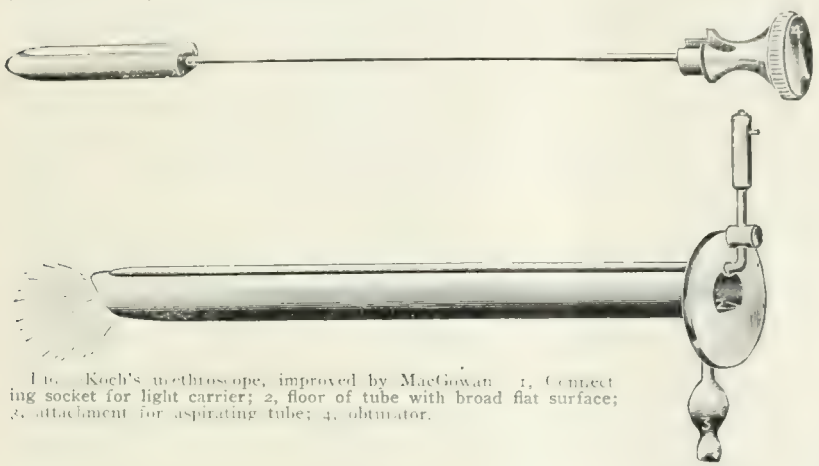


Fig. Koch's urethroscope, improved by MacGowan. 1, Connecting socket for light carrier; 2, floor of tube with broad flat surface; 3, attachment for aspirating tube; 4, obturator.

a basin or a tray which will catch these solutions as they are used. The parts are then protected with a sterile towel or small laparotomy sheet. The meatus is then inspected and a tube of suitable size selected. If the meatus is narrow, time should not be wasted by using a tube which is too small to be efficient. A meatotomy should be performed, and when doing this the surgeon should see that the meatus is split wide enough to take an instrument 28 to 30 in calibre easily and readily. In case this little preliminary maneuvre is necessary, it will often be advisable to defer endoscopy until the wound is so far healed that it no longer bleeds upon the passage of the dilator. The bladder should previously be emptied. The operator should then introduce two to five c. c. of a one per cent. stovaine solution into the bladder through a small silk catheter by means of a sterile Guyon, Record, or Luer syringe. As the catheter is withdrawn, all of the urethra should be filled with this fluid to distention. The meatus should then be pinched transversely between the finger and thumb and the fluid retained within the urethra for ten minutes. The tube selected should be examined to see that its stylet or plunger fits accurately, and the current so regulated that a bright light is obtained. This is readily arrived at by holding the end of the tube over the left hand, looking down it; when the irregularities of the palm can be seen with perfect plainness, if the amount of light is correct. The Iceland moss lubricant should then be applied to the tube and to the meatus and the tube introduced into the urethra by a kind of rotary motion, because there is a tendency always for the tube to stick slightly at the meatus. As the individual lies upon the table, the direction of the tube, as it enters the urethra and is passed on into the lower part of the bulb, is almost perpendicular to the plane of the body.

The end of the plunger is now in contact with the outer layer of the triangular ligament. The tendency of Nature is to keep this portion of the urethra continuously closed. As soon as it is approached, the ever alert external sphincter and the perineal muscles get into action. Even in the obtunded or anesthetized urethra we meet with resistance from muscular contraction. To pass from the bulb into the membranous urethra, we must change the line of direction of the tube and overcome the muscular contraction without injury to the tissues. This is accomplished by maintaining the point of the obturator stationary against the anterior portion of the triangular ligament and depressing the whole instrument slowly, gently, and steadily until it is nearly parallel with the plane of the body, while, at the same time, the proximal end of the plunger is pressed forward with the thumbs and index fingers of both hands firmly against the external sphincter, which will be soon felt to relax, and the tube slides into the membranous urethra. Its proximal end is then further depressed and advanced until the eye of the operator is really looking slightly upward, when, if the obturator is removed, the mouth of the tube should be directly in front of the colliculus. The patient must always be cautioned against struggling, or moving, or raising his head to see what is going on, or coughing, or straining, or placing his arms above his head, because the sheath of the instrument is very thin and any unexpected movement or any very rough manipulation by the surgeon may bruise or lacerate the tissues in the deep urethra. The colliculus will be recognized by its characteristic shape; the utricle and the minute openings of the ejaculatory ducts should also be seen. To enter the supramontane portion of the urethra, it is necessary still further to depress the outer end of the instrument and press the tube onward, always using gentleness and care, when the tissues of the colliculus will be seen to roll backward beneath it. As the bladder is approached one can see plainly on the floor and the sides and the roof of the urethra the openings of the ducts of the mucous glands and the prostatic glands which discharge into it. One can see also perfectly any ulcerations, growths, cysts, or enlarged bloodvessels or abscesses that may be present.

When the internal sphincter is reached, if the bladder contains any fluid, this will be announced the tube and then, when the resistance of the by the seepage, first, of a drop or two of urine in

sphincter is overcome and the end of the tube enters the bladder, its contents will rush out, filling the tube. The rush of fluid from the bladder will, without any provision to take care of it, prevent a close examination of the bladder neck or operative interference with it or the urethra within a few mm. of the bladder outlet. The urethroscope of George Luys contains an auxiliary tube which, by adjusting to a suction pump upon the water tap, is used as an aspirator and keeps the field of operation dry, but the lamp of the Luys instrument lies loose in the tube and has a tendency to bob up into its lumen, thus interfering very materially with the field of vision and the use of other instruments within the tube. To overcome both difficulties, I have devised the instrument which I am presenting, making use of the Koch method of illumination and of the Luys aspirating tube, obtaining an unobstructed tube through which one can work with comfort in a dry space at the bladder neck and the urethra immediately in front of it.

The light is carried in an auxiliary tube on the roof of the instrument and the cords carrying the electric current are out of the way. The aspirating tube is placed on the floor of the instrument and this floor is made flat so that an electric cautery or the carrier of a fulgurating wire can be directed easily to the exact spot where it is desired to use it —something which is very difficult with the Koch urethroscope, because the curve of the auxiliary tube in this instrument interferes with the accurate placing of the cautery point. The aspirator is connected up with a very firm small rubber hose to the pump on the water tap or, what we prefer, to the suction apparatus upon the Kellogg pump, which is somewhat more costly but more satisfactory. With this urethroscope the field is kept dry and one can see the whole neck of the bladder, the trigonum, the ureteral mouths, and the adjacent portion of the bladder wall; make applications of chemicals; use the cautery or the fulgurating wire anywhere in the field; and treat the posterior urethra close up to the neck of the bladder, without being annoyed by the urine. If the urine is clear, the pump always acts satisfactorily. If the urine is very foul and filled with clumps of pus or very bloody, the aspirator will sometimes become choked. The obstruction is usually at its entrance and can nearly always be displaced by cotton swabs used upon ordinary wooden applicators. If this does not suffice, the attachment to the pump can be removed and a stream of normal salt solution forced through the aspiratory tube from a syringe and then the attachment made again to the pump.

The advantage which this instrument possesses over the Goldsmith, the Wossidlo, or the Burger water dilating urethroscope, is that the pathological conditions are viewed exactly as they exist, they are not magnified, and operation can be done or application made with ease at the time of the examination. The instrument can also be used for the location and removal of a portion of a catheter that has been lost in the bladder.

The lamps used in the light carrier are Tungsten and are easily illuminated by the current obtained from a very small dry battery which can be carried in the pocket of the gown worn by the operator. The Electro Surgical Instrument Company makes a small battery with a metal cover suitable for this purpose.

602 Lissner Building.

COMPLETE INVERSION OF THE UTERUS FOLLOWING DELIVERY.

Report of a Case.

By John Hamilton Telfair, M. D.,
New York,
Obstetrician, Fordham Hospital; Clinical Professor of Obstetrics, Fordham University Medical School.

The patient whose case is herewith reported was admitted to my service at Fordham Hospital, June 29, 1913.

Case. Mrs. Z., para I, was delivered of a full term child about ten hours before admission. Following delivery she had a profuse hemorrhage, and when admitted, had complete inversion of the uterus, was gasping for air, skin cold, no radial pulse. Her condition was so desperate when she reached the operating room that I decided that no treatment was possible until her profound shock had been at least partially overcome. Saline infusion, Murphy drip, and the usual quickly diffusible stimulants were given and she commenced to react.

Examination revealed a large, bleeding pear shaped tumor, extending ten cm. outside the vulva. This I washed off with hot saline solution, and grasping the whole mass, attempted to push it up in the axis of the pelvic inlet. There was a sense of firm resistance and upon deep abdominal palpation, I found this to be due to a firm circular contraction of the muscle fibres at the cervicocorporeal junction. The patient was given ether to the surgical degree, and when relaxed I found it possible to introduce the thumb and three fingers of my left hand into this cup-like depression, and actually dilate it as one might dilate a cervix through the vagina. With my left hand still exerting this dilating force through the abdominal wall, I commenced upward pressure on the uterus on the right lateral wall, and succeeded in starting this portion through the cervix, then by continuous pressure gradually worked the fundus up, until the whole inverted mass reduced itself with a snap, just as a rubber ball does after having been compressed. I packed the uterus firmly with plain gauze, and the patient was returned to bed in fair condition. About four hours after the operation the patient again went into collapse and was given a transfusion of blood. The result was remarkably good.

This patient recovered partially from the primary shock and hemorrhage, but left the hospital against advice on the third day. She died of sepsis on the seventh day after delivery.

One would think from looking up the literature on post partum inversion of the uterus, that next to vagitus uterinus, it is the most uncommon accident that happens to the parturient woman. The most striking thing about the statistics is the tremendous difference in the various figures. Braun states that it happens once in 250,000 labors, while Kehrer gives one case in 2,000 labors. An average made from statistics of ten different men is one case in 128,766 labors. This condition is undoubtedly extremely uncommon, but I am of the opinion that it happens more frequently than the figures seem to indicate. Practically all the figures are based upon hospital records, and undoubtedly complete inversion of the uterus following delivery is relatively more

common among the practice of midwives and physicians who would not report the cases.

There are various classifications describing the degree and the time of occurrence of inversion of the uterus, but for the purposes of this paper, I prefer to speak of complete inversion of the uterus as being puerperal or nonpuerperal. Puerperal inversion occurs during or immediately after the third stage, while nonpuerperal inversion occurs independently of labor as an etiological factor, and is practically always caused by fibroid tumors of the uterus. The type of inversion caused by uterine tumors rarely happens at the time of delivery, so I shall confine myself to a discussion of the causes, symptoms, and treatment of puerperal or complete inversion of the uterus following delivery.

Etiology.—The primary cause of puerperal inversion is a diffuse uterine relaxation. The secondary causes are pressure upon the fundus and traction upon the cord. Further secondary causes might be given that act through the production of uterine inertia, but it is useless further to complicate the subject, when the primary and underlying cause is absolutely necessary for inversion. It is doubtful if traction on the cord or too forcible Credé pressure could produce inversion of an uterus whose musculature was not abnormally relaxed. Vogel found that in 100 cases of puerperal inversion, traction had been made on the cord in forty-seven cases. There are numerous cases where a rough, improperly done Credé manipulation produced inversion.

The accident may happen without either of these two secondary causes. Thorn states that spontaneous inversion occurred in 180 out of 437 cases. If this is true, I can conceive of it happening only in the presence of an abnormally relaxed uterus and a lower uterine segment sufficiently patulous to admit the passage of the corpus uteri.

Symptoms.—Cases have been described in which there were few subjective symptoms, but practically all acute inversions present three definite symptoms; pain, hemorrhage, and shock, occuring in the order named. The physical evidence of complete inversion is the presence of a large, bleeding tumor at, or protruding through the vulva.

Diagnosis.—Differential diagnosis has no place in a discussion of this subject, for I feel that an absolute and immediate diagnosis should be made in every case of acute inversion that is not complicated by a fibroid.

Prognosis.—The prognosis is extremely bad and death occurs within a short time, from shock and hemorrhage or later from infection. An average of the mortality tables given by Beckman, McGlinn, and Kehrer is thirty-six per cent.

Treatment.—The treatment of this condition depends upon the duration of the inversion and the condition of the patient. Immediate manual reposition should be done at the time the accident happens. If the case is not seen until the uterus has been inverted several hours, and there is marked constriction of the cervical region, the treatment should depend upon the amount of hemorrhage and shock. The degree of shock in these cases is profound, and is produced by the act of inversion of the uterus, even in the absence of much hemorrhage. Reinversion also produces shock, and should be very carefully considered before treatment is instituted. The presence of dangerous hemorrhage demands immediate replacement, but the writer feels that in a case where the uterus has been inverted several hours, the patient not bleeding but presenting evidence of profound shock, all efforts at reposition had best be deferred until the condition of shock has been satisfactorily treated. Successful replacement may prove fatal by aggravating shock already present.

The actual methods of reducing the inversion are. 1, Manual reposition; 2, various surgical procedures which have for their object the relief of the strangulating action of the cervix.

The technic of manual reposition will depend upon whether the placenta is adherent to the uterus, as it is found to be in one half of all acute puerperal inversions. If the placenta is easily detached, this should be done before reposition is attempted, but if this cannot be accomplished, leave the placenta *in situ* and return the uterus to its normal position. Persisting in attempts to remove an adherent placenta wastes valuable time, gives the cervix an opportunity to constrict the prolapsed mass, and last, but in no sense least, if the placenta is successfully removed with the uterus turned inside out, the hemorrhage is apt to prove dangerous.

Manual replacement, done immediately after the inversion occurs, should be possible without anesthesia, but where the condition presents any difficulties or when the cervix has constricted the mass, anesthesia to the surgical degree should be brought about. Under anesthesia, the relaxation will favor a rapid reduction, and the shock to the patient will be less. Manual replacement might, I think, more properly be called bimanual replacement, for no matter just how the pressure from below is exerted, the other hand of the operator should be placed deeply into the pelvis through the abdominal wall, to resist the upward pressure from below, so that too much strain is not put upon the pelvic attachments of the uterus. In cases of inversion that are reduced immediately, starting the pressure at the fundus should be effectual. If the case is hours old before reduction is attempted, and the cervical ring has contracted around the prolapsed mass, starting the pressure on one of the lateral walls or near the cervical ring, after the manner of Hirst and Fraser, will probably be more effectual. Before replacing the uterus, it should be washed with hot saline solution, and after replacement, packed with gauze.

There are twelve different surgical operations for the reduction of the inverted uterus, but the majority of them have been devised for the correction of chronic inversions. In acute puerperal inversion, where attempts at manual reposition have been unsuccessfully tried, the operation of choice is colpohysterotomy. The incision is made through the cervix posteriorly, deep enough to overcome the constricting ring, and the fundus is pushed up through the cervix, in practically the same way as it is in bimanual replacement.

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2 Marble Hill Avenue.

VARIATION IN DRUGS.

Some Notes Based on Twenty Years of Dispensing.

By William M. Gregory, M. D.,
Berea, Ohio.

In a short time I shall complete my nineteenth year in private practice, during which time I have put up my own prescriptions almost entirely. A large part of my last year in college was spent in discharging the duties of dispensary physician; it was my duty to put up all dispensary prescriptions. My experience has been such as to convince me that the average physician knows but a small fraction of what he ought to know concerning kinds and qualities of medicine. While fraud and substitution are common enough in the compounding of prescriptions, it must be remembered that a prescription may be honestly compounded, and yet be far from being as efficient and certain in its effect as it might be. The more thoroughly familiar the doctor becomes with his remedies, the more he will notice the difference between remedies prepared by ordinary pharmaceutical methods, and those that, by a considerable degree of skill, have been brought up to a high standard of strength and uniformity. There is no department of medicine that will so well repay a man for close, careful, and long continued study, as the task of making himself thoroughly familiar with the various kinds, qualities, and modes of preparation of the medicines that we use or *might use* if we knew more about them. For instance, the hypodermic tablets of the more powerful alkaloids, like morphine and strychnine, prepared by some leading pharmaceutical houses, certainly contain a far better quality of alkaloid than the ordinary tablet triturates of those remedies prepared by the same firms.

A physician of long experience said to me some years ago, "I don't get any very good or remarkable results fom those two remedies, gelsemium and hydrastis, that some men praise up so much." I asked him what preparations of those remedies he had used, and he replied, "why the U. S. P. fluidextracts, of course." My answer was: "Doctor, you need not expect the best results from those remedies unless you use the green plant preparations." Most medicinal plants lose the greater part of their strength in drying and to appreciate them at their true value, one must use preparations made from fresh gathered plants. Several years ago, when the grippe was very common in a very severe form, I was having great success in relieving it quickly, generally removing all the acute symptoms in one or two days, by the use of certain antipyretic and heart sedative remedies prepared from fresh gathered plants. All at once, just after getting in a fresh stock of medicine, my cases all began to go wrong and I could not give them the expected relief at all. I proceeded to make a thorough inquiry and was told by the pharmacist that the reason my green plant tinctures were so inert, was that pharmacists had begun to make them all of only ten per cent. strength in order to comply with the rules of the new pharmacopœia. I abandoned them at once, desiring to have only instruments of precision in my outfit, and I have been using the specific or normal green plant preparations ever since. I think many physicians do not clearly understand the meaning of the term "specific" as used with relation to medicines. It does not mean that they are alleged to be specific cures for disease, but that they are of a certain *specified* or definite strength, and this is perfectly true, as I have verified by long use and the excellent results I get from them. These vegetable remedies contain the full strength of one grain of standardized, assayed drug to each minim of finished product.

I should like to call the attention of the profession to the inferiority of Dover's powder made according to the new formula to that made according to the old one. The old formula calls for opium, ipecac, and *sulphate of potassium,* for which last sugar of milk is substituted in the new formula. It lessens its efficiency very much, which is a pity, for the old powder is an exceedingly good remedy in conjunction with gelsemium and bryonia in acute bronchitis, pleurisy, and bronchial pneumonia.

Koplik's Spots Occurring on the Tonsils.—S. R. Miller, in the *Bulletin of the Johns Hopkins Hospital* for March, 1914, refers to the case of an infant which had suddenly shown marked respiratory difficulty. The tonsils were greatly swollen, nearly touching in the midline when the child gagged, and on each were visible twenty-five or more small, bluish, semitransparent elevations, having a minute white dot in the centre. Smears showed no Klebs-Loeffler bacilli; nor were the spots perceptibly damaged in the process of swabbing the throat. No Koplik spots were to be seen on the lips or cheeks. Administration of an enema and hot mustard foot bath, and the starting of a steam kettle, soon relieved the dyspnea; simultaneously with this relief, a typical measles rash developed, which became universal within three hours. The subsequent course was that of measles. The author considers the bluish elevations on the tonsils to have been Koplik spots in an unusual situation. The child in question was soon after found to be anaphylactic to egg albumin, but this is not believed to have had any influence in causing the tonsillar eruption.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXLV.—How do you treat alcoholic cirrhosis of the liver? (Closed.)

CXLVI.—How do you treat scarlet fever? (Answers due not later than May 15th.)

CXLVII.—How do you treat tetanus? (Answers due not later than June 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The Prize of $25 for the best essay submitted in answer to Question CXLIV was awarded to Dr. Thomas J. Tuder, of Keokee, Va., whose article appears below:

PRIZE QUESTION NO. CXLIV.

THE TREATMENT OF DIPHTHERIA.

By THOMAS J. TUDER, M. D.,
Keokee, Va.

Diphtheria is a disease which should, in many instances, be regarded as diphtheria and treated as such before it is actually known to be diphtheria. Any physician, doing an extensive practice among children, will find that only a small proportion of the acutely inflamed throats, even when there is a membrane on one or both tonsils, will prove to be diphtheria, and I believe that it is possible in a large majority of the cases, especially after he has treated children from time to time and knows them, for a physician to be reasonably certain when he has a case of follicular tonsillitis, evidenced by a higher temperature at the onset, the spots on the tonsils discrete, tonsils usually more or less hypertrophied, a history of recurring attacks of the same trouble whenever the child takes cold, etc. However, even cases which we are reasonably certain are not dipththeria, should be watched closely, and if the discrete spots on the tonsils become confluent or spread to the pillars of the fauces, uvula, or elsewhere, the regular treatment for diphtheria should be begun at once; and it is far safer, even in those cases which we are satisfied from the clinical appearance and the course of the disease are not diphtheria, to take a culture from the throat at the first visit, and if the Klebs-Loeffler bacilli are found, of course antitoxin should be administered at once, even if the case should be improving.

My rule is to give antitoxin immediately in all cases showing a continuous membrane over the tonsils, even if it has not appeared elsewhere in the pharynx, and in all cases manifesting considerable dyspnea with a red or congested throat, provided this dyspnea cannot be otherwise accounted for, as the diagnosis in the laryngeal type of diphtheria must be clinical, and the treatment must be given early to save life. Every case of "spasmodic" croup, which has resisted treatment for a few hours, even in the absence of pharyngeal or other signs of diphtheria than the dyspnea, should have a large dose of antitoxin, and, in the absence of substantial improvement, this should be repeated in six or eight hours or sooner if the case should be growing progressively worse. It is sometimes safe, in mild cases of diphtheria, to take a culture from the throat and wait for the laboratory report if it can be had promptly, but where there is any suspicion of diphtheria, it is far safer to give the antitoxin at once; laryngeal cases should never be delayed.

Experience everywhere has demonstrated that the earlier in the course of the disease the antitoxin is administered the more effective it is, and, as a rule, *practically the whole amount should be administered during the first twenty-four hours of treatment,* and it is really much better for it all to be administered in the first dose, because when second and third doses are necessary it is usually because the first has not been large enough. The most careful and discriminating judgment should be used in gauging the initial dose of antitoxin to fit the severity and stage of the disease.

Braun's recent experiments have led him to conclude, with some other observers, that to be decidedly effective antitoxin must be administered within thirty hours of the onset of the disease. However, as long as there is life, we should trust antitoxin, for all have seen patients ill for five or six days without it, whom we thought moribund, slowly recover from late administration in enormous doses.

The dose of antitoxin varies with the stage of the disease and the severity of the attack. In the mildest cases, if given early 3,000 units may be sufficient, but except to children less than one year old, I never give an initial curative dose of less than 5,000 units, using from that up to 7,500 in cases of pharyngeal involvement only. The cellular tissue of the abdomen about McBurney's point, or the corresponding point on the opposite side is painted with tincture of iodine and allowed to dry, the antitoxin is administered subcutaneously, and the needle puncture is dressed with collodion or a piece of zinc oxide adhesive plaster. More urgent cases are better treated by the intramuscular administration, preferably in the gluteal region, as absorption will be much more rapid, and in desperate cases the antitoxin should be warmed to blood heat and given intravenously. In this method an aseptic technic is imperative.

Eight or ten hours after the first dose, if the patient is not improving, another dose as large as the first should be given, and this should be repeated every six or eight hours until substantial improvement is manifest. Those cases showing laryngeal involvement should have twice, and if very severe, even three or four times the foregoing dose, repeated at slightly shorter intervals, and if the aseptic technic can be carried out the intravenous administration is to be preferred. Ehrlich's theory that the late toxic effects of diphtheria, such

as paralysis, heart complications, etc., are due to a toxone, which has less affinity for antitoxin, and is not bound unless much more of the antibodies are given than are neccessary to bind the toxin, explains the need of large doses, and it is undoubtedly true that heart complications, involvement of the vagus, paralysis, etc., do not appear because of antitoxin, but as a rule because of inadequate dose or late administration.

During the attack, it is well to irrigate the nose and throat every four to six hours with some mild antiseptic, such as normal salt solution, or a saturated aqueous solution of boric acid to which a little glycerin has been added to impart a pleasant taste. Dobell's solution is also satisfactory. Lactic acid sprays have been thought materially to assist in ridding the nose and throat of the germs, and this spray can be used in a somewhat crude manner anywhere by irrigating with sour milk. Recent experiments with spraying nose and throat with a solution of strains of Staphylococcus pyogenes aureus have caused the diphtheria bacilli to disappear, probably largely by overriding. Tincture of iodine applied directly to the part involved every few days, is perhaps the most effective method at our disposal for inhibition of the germ growth.

If the heart needs stimulation, this organ should be watched very closely throughout the attack—brandy, strychnine and tincture of strophanthus are my favorite stimulants in the order named. In order to protect the heart and prevent complications and sequelæ, these patients should be kept in bed for a few weeks, and in the severe cases six weeks, even though they may feel perfectly well and insist on getting out. The bowels should be kept well open, frequent small doses of calomel serving well for this purpose, and corrosive sublimate has seemed to exert a favorable effect on the course of the disease and should be given in doses of one sixtieth grain to a child of five years.

The food during the height of the attack should be nourishing, concentrated, and liquid, returning gradually to the regular diet as the patient improves.

Intubation and tracheotomy, in the desperate cases of laryngeal involvement, are often life saving measures. The patients should be kept in warm, airy rooms, preferably with a sunny exposure, and they should be as far removed from the other members of the family as possible. No needless furniture, clothing, or hangings should be left in the room, and no other member of the family should be allowed to enter. The other members of the family should have a prophylactic dose of antitoxin, 500 units for those under and 1,000 for those over five years of age, and it is well to extend this immunization to the nurse in charge, repeating it if subsequent cases make it necessary, as this immunization is effective only for three weeks.

The child should have special dishes assigned to it, and these should be boiled after use and kept away from the houshold dishes, and all clothing removed from the patient or its bed should be disinfected; soaked in one to 2,000 bichloride for an hour will do. None of the children should be allowed to leave the house, and no outsiders other than the physician and nurse to enter during the existence of the quarantine, which should begin with the onset of the disease and last until three cultures taken on consecutive days fail to show the presence of the Klebs-Loeffler bacilli. The first culture should be taken one week after the disappearance of the membrane and the cessation of the nasal discharge. If impracticable to have these cultures examined, the quarantine should last for three weeks from date of onset of disease. At the end of the quarantine all bed and body linen in the room should be boiled for an hour and this should be followed by effective fumigation of the premises.

Diphtheria may affect eyes, mouth, rectum, vagina, wounds, etc., and the treatment is essentially the same, antitoxin being the main reliance, and local applications, stimulants, etc., mere auxiliaries. In involvement of the eye, antitoxin should be administered in massive doses, 15,000 to 30,000 units, the eye irrigated with saturated solution of boric acid every two hours, the pupil should be kept well dilated with atropine, the other eye covered with a watchglass to prevent infection, and the patient kept in a darkened room.

Much has been written about the by effects of antitoxin. Asthmatics, especially those affected with horse asthma, have sometimes borne antitoxin badly, but even these subjects should have antitoxin when affected with diphtheria. Anaphylactic shock has caused death in these patients, as well as subjects of status lymphaticus; atropine hypodermically has been used and, should anaphylaxis appear, atropine is the most common remedy and adrenaline the next. Fortunately, this condition is very rare, except in people sensitized by a previous vaccination for an infectious disease, and few have seen it.

Vomiting, fainting, fever, arthralgia, adenopathy, angioneurotic edema, as well as the much more frequent rashes, urticaria, erythema, etc., are by effects, the treatment of which is largely symptomatic and recovery the rule. Much work is being done in the direction of active immunization against diphtheria, but nothing definite has been accomplished, and there is yet no effective method of treating diphtheria carriers, some of whom doubtless harbor harmless strains of the bacilli, while other strains are actively pathogenic when they enter another host.

Dr. Charles A. Sparrow, of Worcester, Mass., writes:

Make an early diagnosis and administer antitoxin until the characteristic effects are produced, whether 4,000 or 70,000 units are needed. As we have no way of knowing the amount of toxin generated by the membrane, we must administer antitoxin until the membrane begins to shrivel up, the edges to loosen, the nasal discharge to decrease, and the general condition of the patient to improve. The antitoxin should be fresh, made by a reliable firm. It is better to give large doses at first than frequent small ones, the amount given being determined by results obtained. Injection may be made in the loose skin of the abdomen, in the side of the thigh, or in the back at the angle of the scapula. The interval between injections will be determined by the seriousness of the case, and the

effect upon the membrane, which must be frequently examined. The interval may vary from six or eight hours to twelve or fourteen hours. The first change in the membrane, if the dose has been sufficient, should take place in eight to twelve hours, and complete removal in thirty to forty-eight hours. If antitoxin is given late it cannot counteract the mischief already done by the toxins; hence early administration is most important.

The rest of the treatment is secondary, and may be considered under the following heads:

General.—The patient should be isolated. Absolute rest in bed until one week after disappearance of membrane, and avoidance of sudden exertion are necessary. Careful watch must be kept for deviation in pulse character during convalescence. The diet consists of concentrated fluid food, milk, albumen, and barley water, beef juice, soups, and plenty of water. Rectal feeding is a last resort. Remember, as a tissue builder in convalescence, there is no medicine like nourishing food. Two sponge baths should be given daily (temperature of water regulated by pyrexia) to promote elimination and aid in diaphoresis.

Local.—Cleanliness is the keynote and not destruction of the bacilli which cannot be satisfactorily done after membrane formation. The aim is to facilitate removal of the membrane and prevent reinfection. Keep the local area as clean as possible without taxing the strength of the patient. The best gargle is Seiler's solution, well diluted (two tablets to a pint of water). Syringe the affected parts of nose and pharynx with salt solution one per cent., or boric acid solution, one per cent. to four per cent. Use solutions warm and in copious quantities to irrigate parts thoroughly. In laryngeal cases requiring steam inhalation, use equal parts of oil of eucalyptus and alcohol, twenty to thirty drops in water. An ice bag applied to neck and larynx also gives relief.

Medicinal.—Except for stimulation or control of special symptoms (vomiting, diarrhea) all internal medicine is of little avail. Iron is most useful in beginning to combat the anemia of convalescence. The *routine* use of alcohol is to be condemned. In cases of depression, weak heart action, and sepsis shown by great prostration, feeble pulse, and weak first heart sound, it may be employed in doses corresponding to age of patient. Generally by the third or fourth day, if alcohol is needed, it may be best given in the form of brandy well diluted. Strychnine is the next best stimulant. The routine use of emetics is also to be condemned, for the laryngeal symptoms may be relieved by other means without the aftereffects of depression and gastrointestinal trouble.

Special.—Intubation requires a "light hand" and practice. It is best done in a hospital or under constant observance by a physician. It is a safe, generally sure method of relief in cases showing gradually increasing dyspnea, great tracheal spasm, retractions of supraclavicular space and epigastrium, or use of accessory breathing muscles with restlessness and much uneasiness. Tracheotomy is the last resort in cases where the membrane extends into the trachea and tubes are not available or do not give relief. Often it is the better operation for the country doctor where trained hospital experts are not at hand to manage intubation and frequent reintubation.

Dr. A. Walter Jones, Akron, Ohio, remarks:

As in other contagious diseases the patient should be isolated in a large airy room, which is stripped of all unnecessary furniture, carpets, rugs, hangings, books, toys, etc. The room must be free from draught, so arranged that proper ventilation can be carried out, and kept at a temperature of 70° F. Fresh air in the treatment of this disease is of great importance. Everything used by the patient or with which he comes in contact should be reserved for him alone. Instruments, tongue depressors, spoons, dishes, bed linen and clothing should be boiled or placed in a five per cent. carbolic solution.

Antitoxin serum is indicated in all cases of diphtheria, and the dose should depend upon the severity of the disease and not upon the age of the patient. It has been my experience in treating over four hundred cases of diphtheria that children require just as large, or even larger doses than adults, for these reasons: Their mucous membrane is softer, they are more susceptible to the disease, and have less power of resistance. No time should be lost in administering the antitoxin and the dose should be larger than it has been the custom to use, and if possible, should be given in a single dose. The injection should be made where the skin is loose, and for that reason I generally select a place between the shoulder blades.

In all cases of diphtheria stimulants are indicated from the onset. It is a mistake to wait for signs of debility before using alcohol in this disease. Strychnine, digitalis, and caffeine are used also with benefit.

The nose and throat should be kept clean. This is best accomplished by using an antiseptic gargle and a nasal spray. For the gargle, I generally use a thirty per cent. solution of peroxide of hydrogen and for the nasal spray, a weak Seiler's solution, every two hours. If the nasal passage becomes irritated a little zinc oxide ointment applied three or four times a day affords great relief. A slight nasal hemorrhage may necessitate less frequent syringing and a free hemorrhage would stop the use of the syringe entirely. In all cases the bowels should be kept regular by the use of laxatives, and the condition of the kidneys carefully watched throughout the disease. If the kidneys are found to be secreting a small amount of urine, an active diuretic would be indicated.

For the fever the best antipyretic measure consists in sponging with evaporating lotions, such as alcohol and water: the cold pack and colonic irrigation are very serviceable in some cases. High fever due to pneumonia or any other complication should be treated independently of diphtheria.

Careful feeding forms an essential part of the treatment; the diet should be light and consist of articles that will not disturb digestion. Milk, broths, beef juice, albumin water, custards, cereals, etc., every two or three hours is indispensable. As

the symptoms subside soft boiled eggs and milk toast may be added to the diet. When it is difficult to feed by the mouth owing to excessive vomiting or other causes, it is a good plan to let the stomach have absolute rest and to depend on rectal feeding for a short time.

(*To be concluded.*)

Therapeutic Notes.

Acid Saturation in the Treatment of Febrile Disorders.—Pallais, in the *American Journal of Tropical Diseases and Preventive Medicine* for March, 1914, is stated to have found large doses of citric or tartaric acid of great value in the treatment of various infections. Among the conditions referred to is malaria, in all forms of which these organic acids proved useful. In some cases that had resisted quinine, in fact, the acids were found valuable substitutes for it. A combination of the two measures is advantageous, the quinine being administered hypodermically and the acid (citric usually) by mouth.

In the atypical cases of typhoid fever frequently seen in the tropics, sometimes resembling malaria of a continuous type, the results of the organic acid treatment proved so striking and prompt that Pallais uses it to the exclusion of all other measures. It not only overcomes serious cases, but also mitigates the course of the disease where given early, the tongue rapidly clearing, the tympanites, abdominal pain, constipation, and fetor of the stools passing off, the fever receding, and the albuminuria disappearing in a few days.

In blackwater fever the hematuria or hemoglobinuria is regularly arrested in a short time by the same treatment. In yellow fever massive doses of citric acid were found to cause a surprisingly rapid and marked improvement in the symptoms, hemorrhage, epigastric pain, jaundice, albuminuria, etc., quickly disappearing. Patients considered moribund or hopeless made a good recovery under the treatment, whereas, when used from the beginning of the attack, the acid was found to mitigate all the manifestations in a notable degree.

Finally, in cases of puerperal fever, equally good results were obtained. The author considers that the organic acids act by diminishing the alkalinity of the blood, thereby rendering the latter a less favorable medium for the growth of the invading organisms.

The dose of the acids administered by the author is from 300 to 450 grains (20 to 30 grams) in the twenty-four hours, given in ten ounces (300 grams) of water. In severe cases he gives as much as 600 grains (40 grams). For children of ten years, half doses are given; for those of five years, quarter doses; nurslings stand 30 to 75 grains (2 to 5 grams) very well. When giving citric acid in combination with quinine, Pallais uses the following formula:

℞ Quininæ sulphatis, ...grs. xv (1 gram);
Acidi citrici, ...ʒiii-iv (12-15 grams);
Aquæ, ...ʒiv (120 grams).
M. Sig.: Two tablespoonfuls every two hours.

The citric acid treatment, using massive doses, proved entirely harmless, the only untoward effect being a mild degree of laryngitis, which disappeared as soon as the treatment was stopped.

Treatment of Diffuse Alopecia.—S. Ernest Dore, in the *Clinical Journal* for January 21, 1914, points out that the treatment of commencing baldness is chiefly that of the seborrhea with which it is associated. A feature to be remembered is the inaccessibility and impermeability of the hair follicles to drugs, so that the treatment of seborrhea is similar to that of ringworm, and no mere perfunctory dabbing on of a little lotion or ointment can be expected to eradicate what is really a deep seated disease.

Sulphur and tar are objectionable because of their unpleasant odor. In most cases a lotion is all that is required, and is much preferred by the patient. A useful one is the following:

℞ Hydrargyri chloridi corrosivi,
gr. ss-ii (0.03-0.12 gram);
Resorcinolis vel acidi salicylici,
gr. v-x (0.3-0.6 gram);
Olei lavandulæ, ...♏i-ii (0.06-0.12 c. c.);
Olei ricini vel glycerini, ...♏v-x (0.3-0.6 c. c.);
Alcoholis, q. s. ad.....ʒi (30 c. c.).
M. et ft. lotio.

If the scalp is dry the amount of castor oil in the formula may be increased; if excessively greasy, ether or acetone may be added. An alcoholic lotion is the best dressing for the hair of women; in men, water or dilute alcohol with glycerin instead of castor oil is sometimes preferable. Resorcinol discolors white or very fair hair, and salicylic acid should be substituted for it under these circumstances.

In severe cases an ointment may be required at first. It may be rubbed in every night and washed off in the morning, or a small quantity applied once or twice a week after shampooing, e. g.:

℞ Betanaphtholis, ...grs. v-x (0.3-0.6 gram);
Sulphuris præcipitati, / Resorcinolis, } āā grs. x-xx (0.6-1.2 gram);
Olei lavandulæ, ...♏i-ii (0.06-0.12 c. c.);
Petrolati, q. s. ad.....ʒi (30 grams).
M. ft. unguentum.

To this oil of cade or other agents may be added. When seborrhea is not a marked feature, as in toxic and nervous cases, pilocarpine may be substituted for the mercury salt in the first formula or prescribed with ammonia or other stimulant, e. g.:

℞ Pilocarpinæ nitratis, ...gr. v (0.3 gram);
Aquæ ammoniæ fortioris, / Tincturæ lavandulæ compositæ, } ...āā 5i (4 c. c.);
Alcoholis, ...ʒiss (45 c. c.);
Aquæ, q. s. ad.....ʒvi (180 c. c.).
M. et ft. lotio.

This lotion is also effective in slight degrees of seborrhea, as the ammonia forms a soap with the fat of the scalp. Other useful stimulants are chloral hydrate, acetic acid, and cantharides (the last to be used with caution).

Internal medication should not be forgotten, especially in neurotic and anemic cases; the glycerophosphates, codliver oil, iron, strychnine, and arsenic are of service.

Vaccines of the microbacillus of seborrhea have yielded only temporary results in the author's hands. Massage and the high frequency current are sometimes of service, but too often are persisted in long after they have ceased to do good.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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THE SANITATION OF COMFORT STATIONS.

During the last few years, concomitant with the development of the science of epidemiology, a great deal of progress has been made in ascertaining the causation of epidemic diseases; in contrast to this, the increasing interest in the isolated or sporadic cases is of comparatively recent origin. At the present time the etiological factor in the "outside" case is frequently obscure. A Report on the Typhoid Fever Epidemic in March, 1913, by Corwin and Armstrong, published in the NEW YORK MEDICAL JOURNAL for January 10, 1914, showed that an alarmingly large percentage of typhoid cases was probably the result of contact infection or of food contamination in the home. A more recent study of the sanitary equipment in the public and semipublic toilets of New York city by Doctor Armstrong, of the Association for Improving the Condition of the Poor, points out the possibilities of disease transmission in these much used public facilities and emphasizes the necessity for improved methods of sanitation and for the more strict control of common utensils in these places.

In connection with a general survey of common utensils, bacteriological studies were made in several of the most used public toilets. Doctor Armstrong's report states that "out of ten samples taken from several stations and from varied points of contact, colon bacilli were indicated four times. It is true that these presumption tests were positive only in large quantities (2.5 to 4.5 c. c.). At the same time results show that these utensils were contaminated by organisms from the intestines of human beings coming from the station closets. It is obvious that a typhoid carrier could transmit this disease in this way."

Although forbidden by the sanitary code, common towels and common cups are still widely used in the poorer type of hotel and lodging house. The possibilities for secondary infections in private lodging houses are indicated by the fact that in twenty-two Bowery "hotels" investigated, eight common cups and twenty common towels were found. The types of flushes for closets and urinals were also studied, and it was found that while automatic flushes requiring no personal contact can be and are successfully used in a small number of places, the installation of nonautomatic methods, either chain, handle, button, or valve, is well nigh universal in New York city. In regard to the question of toilet seat disinfection, a great variety of methods is found, most of them inefficient. In cooperation with the Association for Improving the Condition of the Poor, the health department has been experimenting in an effort to discover a combination which would be effective both as an insecticide and a germicide. Recommended, provisionally at least, is a one to 1,000 solution of bichloride of mercury in kerosene.

The Association for Improving the Condition of the Poor, beside recommending to the public and semipublic authorities action based on the above mentioned findings, urges the elimination, so far as possible, of doors with handles and locks, the provision of soap and water and individual towels for the patrons, the supplying of toilet paper, of sanitary napkins in the women's stations, by automatic device, a more thorough soap and water cleansing of the comfort station utensils, etc. While it is sometimes difficult to base recommendations of this character strictly upon health grounds, and while it is often necessary to justify them from the viewpoint of decency as well, undoubtedly these measures are of great sanitary importance and their control can be demonstrated to have a direct, even though minor influence upon morbidity and mortality. It is true, however, that people must be made to appreciate the purpose and necessity for the kind of municipal expenditure which this sanitary equipment requires. No devices, however elaborate or sanitary, are likely to be a success in public institutions unless their installation and use are accompanied or even preceded by the public's education.

JUDGE BREGY'S VIVISECTION RULING UNTENABLE.

In the editorial article published in our issue for April 25th on the Philadelphia vivisection trial in which six distinguished members of the medical faculty of the University of Pennsylvania were accused, we held that a calm analysis of Judge Bregy's ruling that the law of Pennsylvania did not allow pain to be inflicted upon an animal for any purpose other than to relieve suffering in the animal itself, would show that such an interpretation could not be sustained by higher tribunals. Our conclusion was based on the fact that Judge Bregy endowed the law with a degree of comprehensiveness which it had never been intended to possess, the sacrifice of animals used as food, dress or ornamentation, or for sporting purposes, for instance, being in no way interpretable in the light of an effort to relieve the animal itself of suffering. Since the editorial article was written, legal authorities have independently adopted precisely the same line of argument to indicate that Judge Bregy's ruling would doubtless be overruled. Quoting a decision of the Supreme Court in the case of Commonwealth *versus* Lewis, 140 Pennsylvania, 261, for example, Samuel Dickson, Esq., wrote in a letter to Provost Smith of the University of Pennsylvania: "The gelding of calves, colts, cats, dogs, and chickens has been in common use from time immemorial. Fishermen have played with game fish upon the hook almost by the hour, and in the case of the tarpon, for several hours, without intending to use the fish for food; birds and animals have been trapped or wounded by sportsmen and have suffered day after day in pain, and, indeed, the butcher does not kill animals for food for the relief of the suffering of the animal itself." Bearing directly upon the question in point was the view of the late Chief Justice Paxson, quoted by the same authority, that there is no violation of the law where the injury is inflicted for a lawful purpose in virtue of the act of June 3, 1911, which authorizes the search of any building where it is believed that an act of cruelty to animals is being perpetrated. It is specifically provided, moreover, that "no search warrant shall be issued, under the provision of this act, which shall authorize any officer, policeman, constable, agent of a society, or other person, to enter upon or search premises where scientific research work is being conducted by or under the supervision of graduates of reputable scientific schools, or where biological products are being produced for the cure or prevention of disease."

Judge Bregy's ruling, if sound, would have done incalculable harm to progressive medicine and have served to perpetuate suffering in many directions by affecting to a greater or less extent all institutions of medical learning in Pennsylvania. Indeed, as did the plague—before it had been mastered by the benefactors of humanity whose labors it is the purpose of the antivivisectionists wantonly to destroy—its evil influence would soon have spread broadcast, and particularly to the many States provided with just laws against "any person who should wantonly or cruelly maltreat, beat, or otherwise abuse any animal or animals belonging either to himself or others." But the salient and everpresent defect of the antivivisectionists' misinterpretation came to the fore in the present instance, "owing," it is said, "to the hurry of a jury trial which did not permit of exhaustive argument" and, we would add, of adequate search for precedents, a defect sufficient to mislead even a learned and justly respected magistrate. Fortunately, his ruling is not only indefensible, but it will have served greatly to advance the cause of animal experimentation by emphasizing its true worth to mankind.

THE ENLIGHTENED STAND OF AN OLD MEDICAL SCHOOL.

In another column we report the graduation exercises of the Dartmouth Medical School, at which six men received the degree of Doctor of Medicine. This bids fair to be the last time that such a degree is granted from this school, for the trustees and the faculty have accepted the inevitable and have discontinued the last two years of the course in medicine, retaining only the first two or laboratory years. This is the fourth medical school in the United States in point of age, having been founded in 1797. The first degrees were given to two men in June, 1798, and from that time to the present classes have graduated each year. Until 1812 the degree was that of M. B., but it was then changed to the doctorate. Owing to the age of the school and the high reputation which it has always enjoyed, the decision to abandon the granting of degrees must have been a source of much regret to the trustees, the faculty, and the alumni. But, with the advance in the requirements for adequate clinical material, such a step became an absolute necessity owing solely to the situation of the school in the small town of Hanover, which numbers far less than five thousand inhabitants including the student population of the college. The decision to provide only the first two years of the medical course was an indication of the high ideals of the faculty, and of their determination to maintain only the best standards of medical education. They are to be congratulated on their wisdom and the readiness with which they made the sacrifice.

They have justly earned their reward, however, for they are accorded a position in the highest class of medical schools by the strict rating of the American Medical Association. We feel that their action might well be emulated by a few other schools which are the victims of unfavorable location.

INLAND WATERS AND TYPHOID FEVER.

In a recent number of the *Public Health Reports*, De Valin calls attention to a very important factor in the continuance of typhoid fever. It is well recognized that, although cities and towns may suffer from epidemics of typhoid fever, the most common source of cases is infection from typhoid carriers. It is not until such persons are controlled that we may expect our labors in sanitation to be fully rewarded.

Every year more and more members of the community take advantage of the summer for purposes of rest and travel. In this part of the country the Great Lakes are very popular. When the records for the fiscal year ending June 30, 1913, are reviewed, it is found that there were over 1,600 steam vessels on the lakes, carrying over 16,000,000 passengers. During the summer months there is also a great increase in the population of the towns and villages along the water front. It can therefore readily be understood how this lake traffic plays an important role in the maintenance of the country's high typhoid rate.

In 1907, during a short period of a summer's cruise, seventy-seven cases of typhoid fever developed as the result of the use of impure drinking water taken from the Detroit River. Lumsden reports an outbreak, in 1912, among 1,200 passengers on a Mississippi River excursion steamer, in which there occurred over 600 cases of diarrhea and thirteen cases of typhoid fever, with five deaths. On three Great Lakes vessels during the summer of 1913, out of a total of 750 people there were over 300 cases of diarrhea and fifty-two cases of typhoid, with seven deaths.

Recent sanitary surveys of the Great Lakes region by the international commission, have demonstrated that sewage pollution of these bodies of water is yearly becoming more extensive and is proportionately lessening their value as a source of pure water supply. Inasmuch as the vessels on these lakes take on their water as necessity arises, and more or less irrespective of locality, it is evident that pollution of the supply is much more likely to be the rule than the exception. That the supply may be impure, even when far out in the lakes, is evident if one considers that the vessels travel in definite lanes and, as a rule, discharge their sewage directly overboard.

As summer is approaching, it is well to remember that impure water supplies and typhoid fever go hand in hand, and unless the summer traveller wishes to become a typhoid carrier his chief duty should be the avoidance of places where the water is not above suspicion.

THE ANAPHYLACTIC THEORY OF SYMPATHETIC OPHTHALMIA.

An eye is wounded; a few weeks later the other eye becomes inflamed and is usually lost from sympathetic ophthalmia. In what manner the inflammation in the injured eye excites a corresponding condition in the healthy eye, with no involvement of the connecting structures, is a puzzle that has not yet been solved, in spite of the immense amount of study that has been devoted to this disease and the many theories that have been promulgated. The latest theory, advanced first by Elschnig, but only a little later by Kümmell, is that sympathetic ophthalmia is a phenomenon of anaphylaxis. Briefly and roughly stated, the idea is that the uveal tissue in the wounded eye becomes disintegrated by the iridocyclitis, is then absorbed and carried by the circulation to the uvea of the healthy eye, which it sensitizes and renders ready to respond with an iridocyclitis exactly like that in the first eye when acted on by some unknown agent, perhaps some coexistent disease, an autointoxication, or some preexisting constitutional condition. Experimental support is lacking to this, as well as to all other theories, because sympathetic ophthalmia is a disease peculiar to the human race, and the nature and phenomena of anaphylaxis are not yet perfectly understood, so the only test we can make of this theory is to inquire how far it is explanatory of the known facts.

Sympathetic ophthalmia very rarely, if ever, follows a traumatism, no matter to how great a degree the interior of the eye is disorganized, unless it is associated with a wound that penetrates the capsule of the injured eye. It never follows the injury immediately, but always after an interval that may vary from two weeks to several years, though usually of about six weeks. As a rule it starts in the uvea as an iridocyclitis, the same form of inflammation as that present in the wounded eye, and often runs an even more disastrous course, but in rare cases its onset is in the papilla of the optic nerve. It is not associated with any known lesion, disease, or congenital condition elsewhere in the body.

The anaphylactic theory fails to explain why the absorbed, disintegrated uveal tissue sensitizes the uvea of the other eye if the traumatism incises or ruptures the capsule of the injured eyeball, but does not when the capsule is left intact. It may explain the interval between the injury and the onset of sympathetic ophthalmia, but this can be explained just as well in several other ways. It may very well be considered to explain the identical nature of the inflammation in the two eyes which occurs as a rule, but it leaves the rare cases of sympathetic papilloretinitis unexplained. Finally, it has to call to its aid some unknown condition in the body to act as the exciting agent after the healthy uvea has been made hypersensitive. This may be the case, for there are plenty of bodily phenomena unknown to us, and if this was the only objection that could be urged, the theory would seem more plausible.

It is natural that investigators engaged in the study of the obscure subject of anaphylaxis should take into account its possible connection with morbid phenomena of unknown nature, and incline to favor a possible interdependence, especially when they bear some resemblance to the phenomena of anaphylaxis. It is also easy for those to whom anaphylaxis is little more than a name to accept the arguments of such investigators as conclusive, even though they do not mean to hide ignorance beneath a high sounding word, for it is difficult to meet arguments based on grounds with which we are unfamiliar. The best we can do is to test the theory with the known facts, and then to withhold judgment, for further research in anaphylaxis may prove it to be correct; we may do this the more readily as the theory suggests as yet nothing new pertaining to the prevention or cure of sympathetic ophthalmia.

TYPHUS FEVER.

According to the *Public Health Reports*, xxix, 16, for April 17th, since November 19, 1913, nineteen cases of typhus fever have been discovered in immigrants arriving at Atlantic ports from Europe. Seven of these cases arrived at Providence from Marseilles and Naples and twelve at New York quarantine, mainly from southern European ports. Within recent years it has been demonstrated that typhus fever is spread from man to man by the body louse and that apparently this is the only way in which it is spread. This makes the control of the disease comparatively simple when it exists in small foci, and its control even in large outbreaks has been rendered not difficult.

During the latter part of February of this year typhus fever became epidemic in Tokyo, Japan, and from March 20th to April 5th there have been notified 1,750 cases. Epidemics of this size have been exceedingly rare during recent years. In the Tokyo outbreak the fatality rate has been reported to be approximately twelve per cent. This is of interest as showing the variations in the virulence of the disease. Higher fatality rates have been given in times past, also much lower fatality rates, an illustration of the latter being the absence of fatality in the type which has been present to a limited extent in New York city and undoubtedly in other American cities for a number of years. Reference is made to what is known as Brill's disease, which is without doubt typhus fever.

Immediately upon the outbreak in Tokyo the Public Health Service officer stationed there, in cooperation with the American consul, put into operation the United States quarantine regulations as they related to ships clearing and passengers embarking for United States ports. Passengers from infected territory were detained, bathed, and their clothing was disinfected. It is possible that occasional cases of the disease may arrive at Pacific ports in spite of these precautions, and they should be watched for.

ANOTHER SPRING CLEANING.

We learn that, at the request of a large number of civic and other associations interested in public health, and with their active cooperation, the Department of Health is about to inaugurate a "clean up" campaign similar to the very successful one conducted a year ago. Notices will be distributed to all householders calling their attention to the need of removal of accumulated dirt and rubbish, and a date will be set on which collectors from the Department of Street Cleaning will call for the accumulated material. Owing to the intimate relation existing between filth and disease, the department hopes that physicians will lend this plan their hearty support.

News Items.

Exhibition of Lincoln Hospital's Industrial Work.—An exhibition of the industrial work done in the home department of the Lincoln Hospital and Home at 141st Street and Southern Boulevard, New York city, was held on April 22d, 23d, and 24th, at 665 Fifth Avenue. This work comprised the product of the industrial department and consisted of woven rugs, garden baskets, etc.

Musser Memorial Tablet Unveiled.—A tablet in memory of Dr. John Herr Musser, was unveiled at the University Hospital, Philadelphia, on Wednesday afternoon, April 15th. Dr. George E. de Schweinitz was chairman and made the presentation address, and Dr. M. Howard Fussell, secretary of the general committee, delivered the speech of acceptance. Doctor Musser was founder of the social service department of the hospital.

Testimonial to Dr. John A. Wyeth.—On the evening of Friday, May 1st, the medical staff and woman's auxiliary board of the New York Polyclinic Medical School and Hospital presented to that institution a portrait bust of Dr. John Allan Wyeth, the founder of the school and its surgeon-in-chief. The bust is of bronze and was executed by Mr. Herbert Adams, of New York. Addresses were made by Dr. Charles H. Chetwood, Dr. John A. Bodine, Dr. D. Bryden Delavan, and Dr. John A. Wyeth. The occasion marked the second anniversary of the new building of the Polyclinic.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, May 4th, Wills Hospital Ophthalmic Society, Academy of Surgery, Philadelphia Clinical Association; Wednesday, May 6th, Physicians' Motor Club, directors, and the College of Physicians; Thursday, May 7th, Obstetrical Society; Friday, May 8th, Northern Medical Association, and the Psychiatric Society.

Medical Association of Georgia.—The sixty-fifth annual meeting of this association, which was held in Atlanta on April 15th, 16th, and 17th, under the presidency of Dr. Ralston Lattimore, of Savannah, was one of the largest and most successful ever held by the organization. Officers for the ensuing year were elected as follows: Dr. W. B. Hardman, of Commerce, president; Dr. H. J. Williams, of Macon, first vice-president; Dr. S. D. Patterson, of Cuthbert, second vice-president; Dr. W. C. Lyle, of Augusta, secretary and treasurer; Dr. E. C. Davis, of Atlanta, delegate to the national convention in Atlantic City in June.

Commencement Exercises at Dartmouth Medical School.—The graduation exercises of Dartmouth Medical School, Hanover, N. H., were held on the evening of April 24th in the new administration building. The degree of Doctor of Medicine was conferred upon six graduates. A farewell address to the last graduating class of the medical department of Dartmouth College was made by the dean, Doctor Gile, to which Dr. A. W. Burnham, one of the graduates, responded. At the close of the exercises a dinner was held in College Hall, at which President Nichols presided. All the graduates have been successful in obtaining appointments in some of the larger hospitals of New England.

The Truth About the Friedmann Tuberculosis Treatment.—Requests for information concerning the effect of the so called Friedmann tuberculosis treatment, resulted in an effort on the part of the Department of Health to ascertain the recent status of seventy-seven cases treated in hospitals in this city at the time of Doctor Friedmann's visit. Of the total of seventy-seven patients, nineteen could not be found, while eleven were reported to have moved out of town permanently, so that nothing could be learned of their present condition. The department was therefore able to obtain a report on but forty-seven of the cases in question. The report is summarized as follows: At home 5; in hospitals and sanatoria (indicating failure to cure), 22; attending clinics (showing need of further treatment), 7; attended by private physician, 1; died, 12; total, 47.

Comment is unnecessary; the figures tell their own story.

American Proctologic Society.—The sixteenth annual meeting of this society will be held in Atlantic City, N. J., on Monday and Tuesday, June 22d and 23d, with headquarters at Hotel Chalfonte. The annual address of the president will be delivered at the first regular session, at two o'clock on Tuesday afternoon, his subject being the Future of Proctoenterology. Eighteen papers on topics relating to proctology will be read and discussed, and the meeting gives promise of being unusually interesting. The officers are: President, Dr. Joseph M. Mathews, of Louisville; vice-president, Dr. James A. MacMillan, of Detroit; secretary-treasurer, Dr. Alfred J. Zobel, of San Francisco; executive council, Dr. Louis J. Hirschmann, of Detroit, chairman; Dr. William M. Beach, of Pittsburgh; Dr. J. Rawson Pennington, of Chicago, and Dr. Alfred J. Zobel, of San Francisco.

The Health Department's Attitude toward Free Vaccination.—Following the recent agitation by the Department of Health to secure adequate protection for this community against smallpox, a communication was addressed to the commissioner by the president of the Brooklyn Medico-Economic League, protesting against free vaccination by the Department of Health. To all who have carefully observed the events of the past six or eight weeks, it must be clear that the Department of Health has used all its influence to encourage general vaccination throughout the city in a proper way. While it is undoubtedly preferable that vaccination should be done, wherever social conditions warrant, by the individual initiative of the citizens, at their own expense, it is clear that the first and last duty of the Department of Health is to prevent epidemics. Under conditions like the present, vaccination is imperative and rather than permit it to be undone, the department prefers to do the vaccinations even if some individuals wrongfully take advantage of this action.

The Pan-American Medical Association.—This association was formally organized in New Orleans, La., on Wednesday, April 15th, with the following officers to serve for the first year: Dr. S. W. Stafford, president; Dr. J. A. Estopinal, Dr. C. G. Cole, Dr. C. V. Unsworth, and Dr. W. E. Mahler, vice-presidents; Dr. J. J. Wymer, secretary; Dr. W. F. Patton, treasurer. The new organization has about one hundred members.

Physicians and Pharmacists to Discuss Pharmacopeial Revision.—Under the auspices of the New York Branch of the American Pharmaceutical Association, a joint meeting of physicians and pharmacists will be held on Monday evening, May 18th, at 8 o'clock, in the College of Pharmacy Building, New York, for the purpose of discussing the revision of the United States Pharmacopeia. Professor Joseph P. Remington, of Philadelphia, chairman of the Committee of Revision, will open the discussion.

Personal.—Dr. George L. Streeter, professor of anatomy in the medical department of the University of Michigan, has been appointed professor of embryology in the Carnegie Institute of Embryology, Johns Hopkins Medical School.

Passed Assistant Surgeon Marshall Guthrie, United States Public Health Service, has been appointed chief quarantine officer of the Panama Canal Zone.

It is reported that Professor Leopold Freund, of the University of Vienna, has received an invitation to become chief of the x ray department of the Michael Reese Hospital, Chicago.

Dr. George S. Comstock, of Woodhaven, N. Y., has been commissioned captain of the Fifth Company, Thirteenth Regiment, Coast Artillery, of the National Guard, stationed at Brooklyn, and expects to see service in Mexico. Doctor Comstock is a veteran of the Spanish-American War.

Dr. William Hallock Park, professor of bacteriology and hygiene in the University and Bellevue Hospital Medical College, was unanimously elected dean of the college by the council of New York University, which met on Monday afternoon, April 27th. Doctor Park will succeed Dr. Egbert LeFevre, who died on March 30th. Doctor Park has been director of the research laboratories of the Department of Health of the City of New York since 1897.

Dr. Theodore C. Janeway, Bard professor of the practice of medicine in Columbia University, has accepted the professorship of medicine in Johns Hopkins University under the full time basis made possible by the gift of $1,500,000 by the General Education Board. Dr. Llewellys F. Barker, who succeeded Dr. William Osler in the chair of medicine, but who was unable to accept the university professorship under the new conditions, will continue his connection with the hospital.

Dr. Simon Flexner, director of the laboratories of the Rockefeller Institute for Medical Research, has received notice through the French Ambassador in Washington that the Cross of Chevalier of the Legion of Honor has been conferred upon him by President Poincaré.

Surgeon General William C. Gorgas, United States Army, has been awarded the Dr. Louis Livingston Seaman medal by the American Museum of Safety as a recognition of his work in making the Panama Canal Zone habitable and sanitary.

Dr. William J. Hickson, of Vineland, N. J., has been appointed chief surgeon to the psychopathic laboratory recently opened in Chicago.

Dr. M. P. Ravenel, professor of bacteriology at the University of Wisconsin and director of the State hygienic laboratory, has resigned and will become professor of preventive medicine in the University of Missouri. Doctor Ravenel's resignation will take effect in June.

Dr. O. W. H. Mitchell, of the medical department of the University of Missouri, has resigned as associate professor of bacteriology in that institution, and will go to Syracuse, N. Y., where he has been appointed professor of bacteriology in Syracuse University; he will also become city bacteriologist.

Dr. George C. Ruhland has been appointed health commissioner of Milwaukee, succeeding Dr. F. A. Kraft.

Dr. Herbert Old, of Richmond, has resigned as secretary of the Virginia State Board of Medical Examiners.

Dr. Joseph Rivière, editor of the *Annales de physicothérapie* and proprietor of the well known Maison de cure *et de repos* in Paris, has recently been promoted to the grade of officer of the Legion of Honor.

Pith of Progressive Literature.

ZENTRALBLATT FÜR CHIRURGIE.

March 21, 1914.

The Thymus in Exophthalmic Goitre and Allied Diseases.—M. Simmonds found that the thymus was abnormally large in fourteen out of eighteen cases of exophthalmic goitre, normal in only four, abnormal in seven out of sixteen cases of thyroidism, normal in nine. Hence he thinks that an abnormal thymus is to be expected in more than three fourths of the cases of exophthalmic goitre, though in scarcely half of the cases of thyroidism. He recommends that a bit of the thymus be excised during an operation on the thyroid gland, in order to determine its condition.

Aftertreatment of Prostatectomy.—J. W. van Bisselick recommends after an operation for removal of the prostate, a retention catheter to be used continuously for a while to wash out and empty the bladder. The wound is tamponed with gauze, together with the entire bladder when the hemorrhage is great. The greater part of the wound in the bladder is closed with two rows of sutures, the inner row of catgut, the outer of silk. The tampon is usually removed at the end of twenty-four hours, the bladder washed out from above downward to remove clots, and certain sutures are tied that were left untied the day before. The bladder is then washed out every two hours, and the catheter is changed daily for three or four days, then used only nights for the rest of the week. Six out of nine patients treated in this manner were able to urinate naturally within two weeks.

PRESSE MÉDICALE.

March 28, 1914.

Endocrin Tumors of the Appendix.—A. Gosset and P. Masson divide so called cancer of the appendix into two groups of cases: 1, Epithelioma of the ordinary intestinal cylindric celled type; 2, small adenomata or "carcinoid" growths, which staining with silver salts proved to be related to endocrin glandular structures of the walls of the small and large intestine, discovered by Schmidt and Ciaccio. The authors report two cases of the second type, of which they made a careful histological study. Such tumors are certainly not confined to the appendix, and one may logically expect to meet with them wherever the endodermic epithelium of the alimentary tract contains argentaffin cells. Such tissue is homologous to the endocrin gland of the pancreas, constituted by the islands of Langerhans.

Late Osseous Manifestations of Inherited Syphilis.—P. V. Badin asserts that this condition, though not uncommon, is frequently overlooked. The adolescent type of Lannelongue occurs in two forms: 1, Localized gummatous osteoperiostitis, frequently accompanied by suppuration and necrosis; 2, a diffuse form, involving various bones, and without the tendency to pronounced inflammatory complications or suppuration. In the latter form, which is the commoner of the two, osteoperiostitis begins in long bones, which become thickened and deformed. In the author's case there was pronounced disease of the right femur, tibia, and ilium, which were markedly shortened and thickened. There were also shortening of the right arm, some deformity of the right hand, facial asymmetry, and abnormalities of the teeth and palate. X ray examination showed marked rarefaction in the enlarged portions of the bones. The patient was a boy aged six years; none of the bony changes had begun before the age of two. The complete absence of pain and tenderness in the involved parts was significant. Mercury and iodides brought the process to a standstill, but could not remove the deformities already established.

Constricted Pelvis through Absence of Sacrum.—P. Desfosses reports the case of a female child aged seven months, exhibiting complete absence of the spinal column below the second lumbar vertebra, together with pronounced atrophy of the ilia and ischiopubic rami. The two ilia appear in the radiogram to be fused posteriorly. Wassermann's reaction was negative in both mother and child. The mother asserted that she had been severely poisoned, at the fourth month of pregnancy, from eating mussels.

April 4, 1914.

Pituitary Opotherapy in Gynecology.—F. Jayle reports his experience in fifty cases with the subcutaneous administration of a liquid extract of the posterior lobe of the hypophysis. Among the patients were some suffering from chronic metritis, subinvolution with metrorrhagia, uterine sclerosis of the menopause with metrorrhagia, chronic nonsuppurative salpingitis, chronic oophoritis, fibromyoma, and inoperable cervical epithelioma with hemorrhage. The immediate results are asserted to be satisfactory, but nothing definite can as yet be said as to the late results. Pituitary medication appears to be serviceable in mild—though rebellious—lesions of the ovaries, tubes, and peritoneum in young women, in women suffering from metrorrhagia at the period of the menopause, and in those afflicted with attacks of pelvic congestion without associated macroscopic lesions. It is also capable of being useful as a complementary measure after conservative pelvic operations when the latter are only incompletely effectual. It appears to be a serviceable substitute for electric, x ray, and radium treatment in some of their indications. Its mode of action seems to be complex. All signs of vasoconstriction are noted, but some of the author's observations appeared to him strongly to suggest that the secretion of the ovaries is itself influenced by the administration of the pituitary product. The injections were made in series of five to fourteen, at daily or longer intervals.

SEMAINE MÉDICALE

April 1, 1914.

Segmental Localization of Cortical Ataxia.—F. Rose asserts that cortical ataxia, contrary to prevailing views, does not always manifest itself in defective coordination involving chiefly specialized movements of the fingers. Sensation being provided, like motion, with projection paths into the cortical region, ataxia varies, as regards its segmental localization, according to the projection field which is involved.

REVUE MÉDICALE DE LA SUISSE ROMANDE.

March, 1914.

Diagnostic Errors in Extrauterine Gestation.—L. Aubert reports cases in which ectopic gestation was mistaken for acute appendicitis, perforation of the stomach or intestine, and other conditions, and lays stress on the necessity of thinking of extrauterine gestation in all cases of acute abdominal disease in women. Insistent inquiry should be made for any intrapelvic disturbance recently experienced by the patient, and vaginal or rectal palpation should be practised. In actual cases of ectopic gestation, the cervix will frequently be found softened; an abnormal sensitiveness or softness over the vaginal vaults will be noted. The latter sign was often observed by Aubert before a hematocele could be distinctly made out. Puncture into the posterior cul-de-sac with a long needle and syringe may be of signal service, though not infrequently coexisting disease contraindicates its use.

Oxygen Injections in Nervous and Mental Diseases.—M. Dardel reports twelve cases, including two of neurasthenia and two of catatonic dementia, and one of epilepsy, circular insanity in the maniacal stage, and chronic gastritis with obstinate insomnia, in which repeated subcutaneous injections of 300 to 500 c. c. of oxygen gas uniformly brought about favorable effects, especially as regards the promotion of sleep at night. In excited cases the injections regularly procured at least a few hours' quiet sleep each night, so that the customary hypnotic drugs could be dispensed with. The sleep brought by oxygen is natural, deep, and is never followed by lassitude such as that succeeding the use of hypnotics. In nervous cases a sensation of well being is afforded, the patients no longer "feel their nerves." Even in chronic brain affections generally considered incurable, a hypnotic and general sedative effect results, which cannot but react favorably on the condition of the patients.

Migrainoid Attacks of Syphilitic Causation.—Roubaudi reports two cases illustrative of the fact that migraine symptoms of sudden and daily character should awaken suspicions of syphilis. Too much stress should not be laid on the evening or nocturnal occurrence of pains due to syphilis.

BRITISH MEDICAL JOURNAL.

April 11, 1914.

Laryngeal Tuberculosis.—St. Clair Thomson presents results of sanatorium treatment of laryngeal tuberculosis. He cites two opinions regarding its prognosis; the older one, that it is almost always fatal, and the newer one, that it is not very fatal and that many recoveries follow treatment. He urges that both views are wrong, the truth being that, while the condition is very serious and often fatal, recovery can be expected in a fair proportion of cases under proper treatment. Such treatment, in his experience, is chiefly residence in a sanatorium with "the removal from vitiated and dusty air, the suppression of alcohol, the limitation or abolition of tobacco, the vocal rest, and all the improvement in general health brought about by the regular existence, the abundant nourishment, the rest and exercise, and the other factors of the simple life under constant medical supervision." Under such conditions alone, "the congestion and catarrh subside, the dirty ulcers clean, irritation and cough disappear, and all our symptomatic armamentaria of sprays, inhalations, lozenges, powders, insufflations, paints, caustics, and intratracheal injections are uncalled for." His statistics show that of thirty-seven cases of arrest of tuberculous laryngitis, no less than twenty-two healed without any direct treatment. In the remaining fifteen, the galvanocautery was used to bring about cicatrization. He used tuberculin in a number of cases, but without any marked beneficial results. In a total of 693 cases of tuberculosis of the lungs, 178, or 25.6 per cent., had involvement of the larynx. In this series, women were somewhat more numerous than men. Sanatorium treatment of the 178 cases gave nearly twenty-one per cent. of arrests, about thirty-five per cent. were improved, an equal number remained unchanged, and nine per cent. grew worse. Mortality of cases without laryngeal disease was 26.5 per cent., of those with such involvement 50.9 per cent.

Subcutaneous Tuberculosis Following Circumcision.—Sydney T. Champtaloup's patient was a child ten months old, with a history of circumcision performed when he was seven weeks old, by a physician who, as ascertained later, was then suffering with laryngeal tuberculosis. The wound suppurated badly, and three weeks after the operation the right inguinal glands became enlarged and an abscess, which formed there, was incised. A week later a measleslike rash developed on the face, body, and extremities. This slowly faded, but several small areas became indurated, and suppurated. The child also lost appetite and grew thin. Although each suppurated area was incised, most of them failed to heal after treatment of several months. At this stage the patient, first seen by the author, showed many suppurating foci on the body, face, and extremities, a number of which had failed to heal at all after incision. Many of the suppurating and ulcerated areas had purplish, indurated edges. The child was hectic, and greatly emaciated, and the diagnosis was in doubt. Cultures and smears were negative, but the condition was proved to be tuberculous as the result of inoculation of some of the pus into guineapigs. No tuberculous lesions were found other than those in the subcutaneous tissues. Although extremely ill with little hope of recovery, the child, after an injection of tuberculin, promptly improved, and was apparently completely well, eight months later.

LANCET.

April 11, 1914.

Standardization of Bacterial Vaccines.—Ernest E. Glynn and his collaborators draw the following conclusions regarding the methods of standardization, and propose a new and improved chamber for the purpose. 1. The most scientific method of enumerating the bacteria for vaccines is in some form of hemocytometer chamber. 2. An optically plane and rigid coverslip must be used with such apparatus, for it is recognized as essential when counting blood and is still more essential when counting bacteria, where accuracy is of greater importance. Owing to the small free working distance of oil immersion lenses, most optically plane coverslips

are too thick. 3. Two types of hemocytometer chamber may be employed. The ordinary chamber 0.1 mm. deep, with an optically plane coverslip 0.13 mm. thick. This is suitable for all oil immersion lenses with a free working distance of 0.17 mm. and some of 0.15 mm. A chamber 0.02 mm. deep, with a special safety trench 2.5 mm. wide and optically plane coverslip 0.18 mm. thick. This is suitable for all achromatic oil immersion lenses, even if the free working distance is as low as 0.09. 4. The 0.02 mm. chamber is much superior for the following reasons: Almost all the bacteria settle at the bottom in fifteen minutes, when accurate counts can be made, whereas in the 0.1 mm. chamber, a considerable number are still moving after half an hour. Bacteria adhering to the under surface of the coverslip or still floating in the chamber are more easily enumerated. The optical definition of the bacteria is better owing to the small quantity of fluid. The free working distance is greater, and the coverslip being 0.18 mm. thick is more durable. Counting is quicker owing to the much smaller number of moving bacteria and the greater ease in focusing the top and bottom of the chamber. A weak solution of carbol thionin is the best diluting and staining fluid; unlike a weak solution of Giemsa it is quite free from precipitate and stains more intensely. The authors believe that this method is faster and more accurate than the method of Wright, and does not underestimate the strength of bacterial emulsions, as is the case with the Wright method.

Notes on Diabetic Retinitis.—Samuel West believes that the retinitis associated with diabetes is not in any respect typical nor diagnostic and says that, in his opinion, it is "impossible to diagnose diabetes from anything that can be seen in the retina." He also agrees with the view that many cases of so called diabetic retinitis are typically albuminuric, due to the association of granular kidney. He describes two forms of albuminuric retinitis—the degenerative and the exudative. The first is the common type with the white glistening patches of degeneration, grouped especially about the yellow spot. Such a form occurs in no other disease. The exudative form is marked by the presence of exudation, usually extending out from the disc, and occurring in patches, but these are never glistening, but are of a dull fluffy character. This form has nothing by which it may be distinguished from the neuroretinitis of other conditions, and West believes it to be of toxic origin. Hence retinitis, which is associated with diabetes, is indistinguishable from other common types of retinitis, and, therefore, not in the least diagnostic of diabetes.

Therapeutic Value of the Potato.—Heaton C. Howard, as a result of long observation, reports that concentrated preparations of the expressed juice of potato exert a marked anodyne effect on certain painful conditions, when applied externally to the part in the form of a wet dressing, a plaster, or an ointment. He reports cases to substantiate his contention. He states that he is unable to account for this power of a juice which contains no active alkaloid, and which seems to be composed mainly of potassium salts.

PRACTITIONER.

March, 1914.

Radiations and New Growths.—W. S. Lazarus-Barlow concludes from his investigations: 1. If radium acts on ova of Ascaris megalocephala in the resting stage, in quantities of the order of 5×10 mgr. for a continuous period of about thirty hours at 0° C., on subsequent incubation at 37° C. cellular division proceeds at an accelerated rate. 2, Greater quantities, or more prolonged exposures, progressively retard the rate of division. 3, These effects are brought about by the action of alpha, beta, and gamma rays acting together. 4, Beta and gamma rays alone, alpha rays being excluded, act similarly. 5, The action of alpha rays appears to be about one hundred times as great as the action of beta rays

Sprains and Strains of the Knee Joint.—G. Lenthal Cheatle divides these cases into those in which there is a foreign body, or tissues, between the ends of the bones, and those in which there is not. If there is a dislocated semilunar cartilage, the treatment depends upon, 1, whether it is of recent origin and has happened for the first time; 2, whether it has happened twice or many times; 3, whether the patient's occupation would lead him into situations in which a loose cartilage could cause a serious accident. When no such condition is present, and the case is an acute one, in which a severe sprain has occurred for the first time, and in which no rupture of the ligamentum patellæ has occurred, the limb must be rested for about twenty-four hours—not necessarily in a splint—a thick layer of cotton and a bandage is often sufficient. If seen within the first five minutes, cold, applied by means of ice, might arrest the hemorrhage. After the first half hour, it is best to apply large, hot, and frequent fomentations. At the end of twenty-four hours, gentle massage may be given the thigh muscles and the articulation, and passive movements can be begun. In performing passive movements it is essential that the patient should help the surgeon in every movement. The patient's muscles will then be acting with, and not against the surgeon, and there will be no fear of excessive movement. In a very severe sprain this treatment should be continued for three or four days, when the patient can begin to walk. At the end of a week massage of the muscles and joint can be continued, and he should perform regular muscular exercises. The usual history of chronic sprains is, that after the accident, the limb is kept too long at rest with or without splints.

Some Current Methods of Treating Acute Pneumonia.—E. Curtin thinks that the formation of fibrin increases the danger and should, if possible, be controlled or limited. With this end in view, the salts of potassium and ammonium are indicated early in the disease. The citrates and iodides of potassium are especially useful owing to their action in reducing the apoplasmic state of the blood. They also promote diuresis by abstracting water from the tissues.

Thermoprecipitin Reaction in the Diagnosis of Pulmonary Tuberculosis.—Elizabeth T. Fraser thinks that this reaction has some clinical value; a

negative result speaks strongly against a diagnosis of tuberculosis. But the statistics show the lack of absolute reliability, due in the first place to the fact that, in any list of cases diagnosed clinically as free from tuberculosis, there is probably a certain percentage in which the infection is in reality present; and in the second place, to the inconstancy of all tuberculous antibodies.

Relation of the Time of Day to Mortality.—See this JOURNAL, page 594.

BOSTON MEDICAL AND SURGICAL JOURNAL.

April 16, 1914

Some Problems in Nephritis.—Horace D. Arnold says that cases of nephritis do better on a low protein diet, which requires less functional activity on the part of the kidneys. The degree to which the protein should be cut down depends on the degree of impairment of the renal functions. A rough estimate can be made on the basis of allowing ninety grams of protein in the lightest cases, and about forty grams in the severe or advanced cases. Intermediate grades should have an amount of protein between these extremes, varying according to the severity of the disease. If the symptoms improve and the blood pressure falls, the functional tests are not essential; otherwise valuable information may be obtained from them, even in the present stage of our knowledge. With the accumulation of more data, the inferences that may be drawn from these functional tests will be more and more valuable. In cases with edema, and also in the cases in which the blood pressure remains high, although the protein in the food is reduced, the amount of salt should be reduced. It is probable that there are at least two or three clinical types of chronic interstitial nephritis. A proper regulation of diet, not forgetting to provide a sufficient amount of nutrition, will enable many of these patients to live in comfort for years longer than we have been taught to expect.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

April 18, 1914

Constrictions of the Duodenum Due to Abnormal Folds of the Anterior Mesogastrium.—M. L. Harris calls attention to a condition hitherto undescribed, a constriction at the second part of the duodenum with quite distinct, if not characteristic symptoms, due to the remains of a definite and perfectly normal embryological structure. He has now operated in six of these cases, and their histories are related. In all there was a disturbance of digestion, evidenced by more or less distress in the epigastrium, coming on some time after eating, and usually relieved by food. Tenderness in this region was also present in all. The trouble was distinctly chronic, often dating from early life. Hyperchlorhydria was always present whenever examined for. These symptoms strongly suggested duodenal ulcer, yet in none of the cases were any evidences of present or past ulcers of duodenum or stomach found at operation. Analysis seemed to show that there was an absence of the marked intermissions and bad relapses, so common in ulcer cases. Occult blood in the stools was not noted, which indicated this condition rather than ulcer. The x ray is a valuable aid in the diagnosis.

Treatment of Acute Osteomyelitis of the Long Bones by Means of the Dental Engine and a Large Burr.—F. G. Dyas, in describing this method, says that the operator readily acquires the ability to decide when the burr is drilling out diseased or normal bone, because of greater resistance offered by healthy tissue. The burr is easily manipulated, and one may safely venture into areas in which it would be very dangerous to use chisel and mallet. Risk of fracturing the long bones is reduced to a minimum, violent trauma being avoided. Thus, by the use of the burr, a hazardous, violent, and crude procedure is transformed into a comparatively safe operation with a definite and precise technic.

Wiring with Electrolysis for Aortic Aneurysm.—H. A. Hare reports three additional instances of this treatment for aneurysm of the thoracic aorta, and states that one patient illustrates the beneficial effects more than four years after a second wiring, which was resorted to because he had a return of very severe pain and a marked bulging near the site of the original sac. The author repeats the conclusions reached in a previous paper (*Journal A. M. A.*, April 13, 1912) and adds that, having performed this operation twenty-five times, he can see no reason for changing his views; he would only emphasize once more the fact that only specially prepared wire can be used; silver wire, because it does not coil, is an unsuitable agent. This operation like others depends largely for its success on how it is done. If too much current is used, serious damage and necrosis of tissues may be induced, and he has been led to believe that in several cases, not reported, of others, such an error in technic has been followed by bad results. If the street current is used, it is not only necessary that the table on which the patient lies should be insulated, but that the operator should wear thick, rubber soled shoes and stand on a perfectly dry floor.

Some Notes on Hay Fever.—H. L. Ulrich's conclusions are as follows: Autumnal pollinosis can be treated in three ways: 1. By removal of the cause, namely, eradication of ragweed; 2, by the removal of the patient from the ragweed environment; 3, by producing antihypersensibility. The author's point of view differs from that of Dunbar, Noon and Freeman, and Clowes, who hold that they are dealing with an infectious process similar to bacterial infection; while he contends that the process is of the nature of a protein toxicosis. In a number of cases he found pollen toxin fairly successful. He believes that in hay fever, more than in any other clinical entity, there is a fruitful field of research in those vague conditions grouped under the term "hypersensibilities."

Luetin Cutaneous Reaction for Syphilis.—A. R. Kilgore reports 150 tests in 120 cases (ninety cases in the medical wards and thirty cases in the orthopedic ward of the Massachusetts General Hospital), and states that in 120 tests there were but five reactions which were not typically negative; these were too superficial and faded too rapidly to be called positive. His conclusions are: The luetin test is of practical value in a few cases of late syphilis (four out of thirty-six), in which it is

positive when the Wassermann reaction is negative. Second injections apparently do not give positive reactions in nonsyphilitic cases.

MEDICAL RECORD.

April 18, 1914.

Syphilis in Relation to Life Insurance.—H. H. Schroeder states that an applicant with a syphilitic history should not be accepted unless one year at least has elapsed since last treatment, until several negative Wassermann tests have been made, and a negative Wassermann reaction obtained at the end of the year. A negative provocative Wassermann reaction, especially if repeated, indicates that the spirochetes have been destroyed in the parts reached by the circulating blood. The simple complement fixation reaction is invaluable as a proper control of treatment; it is of little value in determining a cure. Nonne's four points of diagnosis justify the belief that a patient has been cured; but this procedure is not practicable in life insurance. An applicant with a history of tertiary syphilis is not insurable in any circumstances. As to different tests, reports are absolutely valueless unless they come from competent and trustworthy serologists. Many applicants will consider the exactions too burdensome, or will not be in a position to comply with them, and, consequently, some business will be lost; but the loss of applicants with a syphilitic history will promote, rather than hurt the ultimate interests of the company.

Typhoid Immunization in Hospitals and Training Schools of New York.—Alfred Meyer, in December, 1913, sent an inquiry regarding immunization to the public and private hospitals and training schools of greater New York. Replies from forty-seven institutions show that immunization was voluntary in twenty-two and compulsory in five; in the sixth it was compulsory when typhoid patients were being cared for. Inoculations are practised in almost all the larger institutions of the city. In thirty of them, nurses and house staffs, and in eighteen, the administration staffs were immunized; immunization was voluntary in all.

Isoserum Treatment of the Vomiting of Pregnancy.—C. K. Austin says that the isoserum treatment of the autointoxication of pregnancy has been applied in twenty cases: Vomiting, nine (one failure); eclampsia, four; herpes gestationis, five; less well defined conditions, two (one failure); and that with eighteen patients, it succeeded, sometimes quite dramatically, while with only two did it result in failure. The marked success of these injections in the vomiting of pregnancy (eight out of nine), with the generally grave character of this disorder and our almost total lack of any other efficient means of cure, indicates a therapeutic agent of great service.

Epidemic Icterus.—A. Strauch reports four cases of jaundice occurring consecutively in the children of one family within a period of less than four weeks. He ascertained that about the same time, at least in one family living only two blocks from the other, all eight children became affected by jaundice. Contact among the children of the two families was very improbable. Three of the four cases observed by him were quite mild. The disease occurred in November and early December, when the weather was cool and damp, and it is a notable and well established fact that autumn and winter are the most common seasons of epidemic icterus; not the summer, as the greater prevalence of acute and chronic gastrointestinal disturbances would lead us to expect.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

April, 1914.

Cholecystitis without Stones or Jaundice in Its Relation to Chronic Pancreatitis.—W. J. Mayo finds that cholecystitis without stones is comparatively common; types vary greatly in intensity, and some uncertainty exists as to surgery of chronic cholecystitis. There is a group without gallstones and without jaundice, accompanied by undoubted chronic interlobular pancreatitis, cases in which there is no dilatation of the common duct and no distention of the gallbladder. That chronic pancreatitis is best treated by drainage of the bile tract is a lesson so thoroughly taught that, even where there is no evidence whatever of interference with biliary or pancreatic drainage, Mayo still adheres to the practice of draining the gallbladder, in spite of the fact that infection within the gallbladder has caused the disease of the pancreas, and that this infection will probably not be cured by drainage. The object of the paper is to show that in chronic pancreatitis, without jaundice and without evidence of back pressure on the biliary tract, the gallbladder should be removed if it shows marked evidence of chronic inflammation, especially of the strawberry type. In this type the mucous membrane is covered with yellow specks which are the bases of the exposed villi stripped of their covering epithelium, with their connective tissue stained yellow by the bile.

Treatment of Pylorospasm in Infancy.—J. Ruhräh calls attention particularly to the following points: 1. More careful diagnosis. 2. A longer trial of medical treatment, especially in all cases where the diagnosis of pylorospasm is probable. 3. Necessity of breast milk. 4. Superiority of atropine to other forms of medicine.

Clinical Significance of Diastolic and Pulse Pressure.—Percival Nicholson says that systolic blood pressure is an indicator of the ventricular contraction of the heart; diastolic pressure, the pressure when the heart and vessels are at rest, is an indicator of the amount of peripheral resistance. By substracting diastolic from systolic pressure, we obtain the pulse pressure, which in turn represents the head of flow. In other words, pulse pressure represents the excess force of the heart over the peripheral resistance represented by the diastolic pressure. It is the amount of pressure which carries on the circulation. The importance of diastolic and pulse pressure is apparent; the first represents the amount of resistance the heart has to overcome to cause the blood to flow; the second shows how much excess of pressure the heart is exerting to carry on the circulation. The systolic pressure by itself may furnish a great deal of information; it may also be misleading unless checked with the diastolic and pulse pressure. If there is a high systolic pressure and a correspondingly high

diastolic pressure, we may assume that there is a normal balance between vessels and heart and that a compensatory condition is present. Where high pressure is temporary, as in overeating, it will return to normal as soon as the cause is removed. Arterial, nephritic, and cardiac changes of a permanent character, not being removable, as damage is already done, can best be treated by general nutrition and prevention of further changes. The question is one of balance, it being important to know, not so much the pressure of the blood, but the volume of fresh blood delivered to the organs. Actual figures representing the systolic pressure may be an aid, but they are not important in themselves. It is essential to determine the pulse pressure, as the velocity of the blood stream is roughly equal to the pulse pressure multiplied by the pulse rate. There are other factors and this is not absolutely accurate in every case; however, it gives a very good idea of the amount of blood supplied to an organ. The author describes in detail his new pocket sphygmomanometer which, he says, possesses accuracy, portability, and durability.

Diagnostic Value of Percutaneous Tuberculin Test (Moro).—E. B. Krumbhaar and J. H. Musser, Jr., conclude: 1. The prevalent opinion that positive reactions in adults are of little or no value is erroneous. 2. The constant positive reaction in all undoubted early and moderate cases of tuberculosis is a strong indication of the specificity of the reaction. 3. The negative reaction in ninety per cent. of the far advanced cases indicates that, after bodily resistance has been overcome, with the probable disappearance of antibodies, the tissues fail to react to the test. 4. The test is of value in the differential diagnosis of pleural effusions, joint diseases, abdominal tuberculosis *versus* typhoid, etc.

AMERICAN JOURNAL OF TROPICAL DISEASES AND PREVENTIVE MEDICINE.

March, 1914.

Growth of Filarial Embryos in Vitro.—F. M. Johns and P. L. Querens found that in dextrose defibrinated blood from the dog, prepared as described by them in detail, at a temperature of 37° C., the embryos of Filaria immitis exhibit growth and motility for about fifteen days, after which the media and organisms begin to disintegrate. An increase of size from 155 by 4.3 microns to 264 by 5.7 microns was noted. In similar cultures from the blood of cattle, the embryos of Setaria labiatopapillosum showed growth and motility for fifty-two days. Beginning development of an alimentary tract, mouth parts, terminal spicule, and other structures, was witnessed in these embryos.

Innocuous Bites of Malaria and Yellow Fever Mosquitoes during the Daytime.—Emilio Echeverria refers to the well known efficacy in the prevention of infection by malaria and yellow fever bearing mosquitoes of avoiding nights in the lowlands and retiring to higher localities before dusk. He calls attention to the fact that a nonimmune person may be bitten with impunity by yellow fever mosquitoes, even at the height of a well marked epidemic of the disease, provided the biting occurs in the daytime. The only satisfactory explanation is that the female mosquito comes into the world with an inordinate appetite for blood, which will be procured at the earliest opportunity and regardless of the time of day, provided the wings are dry enough to carry the insect to the victim. The mosquitoes biting in the daytime, being young, have not yet had time to become infected from human yellow fever subjects. As soon as the early inordinate appetite is satisfied, the insect takes to its natural nocturnal habits, and no longer bites in the daytime. Thus, prophylaxis is comprised in the few words: "Avoid being bitten by a night mosquito."

INTERSTATE MEDICAL JOURNAL

March, 1914.

Chemotherapy of Tuberculosis.—H. G. Wells says that so far the attempts to evolve specific chemical therapeutic agents by means of chemical and experimental methods, in a certain measure has repeated the history of primitive attempts by empiricism. Empiricism stumbled on quinine and mercury; scientific chemotherapy, under the inspiration and guidance of Ehrlich, has devised a number of compounds which will destroy in the living animal body several varieties of trypanosomes and spirochetes, but we have yet to hear of a compound of equal potency in a bacterial infection. In a systematic investigation of the chemotherapy of tuberculosis, it seems desirable first to determine the entrance of various classes of substances into the tubercle and into the bacteria, since the effective tuberculocide must be, theoretically, one which enters freely and, if possible, selectively, into the avascular tubercle, and with like facility passes through the fatty sheath of the bacillus. In speaking of the use of copper the author, after referring to the contention of Linden and others that copper salts of various kinds have a striking effect on the tuberculosis of man and experimental animals, states that Pekanovich, who attempted to utilize the Linden methods on a series of patients with pulmonary tuberculosis, and Somagyi, who treated skin tuberculosis with copper compounds, observed no favorable effects. In regard to the use of gold he states that the reports of recent observations on the effects of gold cantharidin preparations give a favorable impression, and that further investigations with these will be awaited with much interest.

Differential Diagnosis of Incipient Pulmonary Tuberculosis.—C. M. Montgomery says that the earlier in the disease we try to make a diagnosis, the more difficult will be the task and the longer the time required for studying the case. To the physician trained in tuberculosis work success in diagnosis will depend on the care and thoroughness with which he handles each individual case, for it is from painstaking work, and not from diagnostic short cuts, that he will derive most assistance in many of the very difficult cases. He discusses the subject under the following headings: History and symptoms; temperature; weight; sputum; blood; tuberculin test; Abderhalden's test; physical examination of the chest; x ray; the upper respiratory tract; the lungs; circulatory phenomena; abdominal cases; gynecological conditions; miscellaneous symptoms; social history and habits. He has been much interested in watching the behavior of pa-

tients, under observation for a year or more with no positive evidence of any single malady, who have improved wonderfully in their general health through treatment at a tuberculosis sanatorium. Patients of an apparently similar type, if failing to respond to sanatorium treatment, showing no new evidence of tuberculosis, are probably suffering from some other condition. In this way we have a modified form of therapeutic test, which also operates to a certain extent when a case of doubtful diagnosis responds to some nontuberculous treatment.

Actual Value of Artificial Pneumothorax in the Treatment of Tuberculosis.—T. Tuffier and G. Loewy state that as practised by them, the operation bears only on the diseased zone, which it immobilizes; it is of service in cases in which the pleura is adherent. As to the therapeutic value of artificial pneumothorax, one should not make any premature statements, since pulmonary tuberculosis has always repelled all medical and surgical efforts which have been attempted in the way of a cure. Nevertheless, it can be stated with positiveness that in the future the bacillary lesions should be attacked in their incipiency. Early extirpation of the lesions or immobilization of the diseased region ought to be effective.

JOURNAL OF INFECTIOUS DISEASES.

March, 1914.

Pasteurization in Bottles and the Process of Bottling Hot Pasteurized Milk.—Ayers and Johnson note the advantage of pasteurization in bottles; that infection after pasteurization is prevented. In ordinary methods, there is a great opportunity of infection from coolers and in bottling. The chief disadvantage is the cost of the new method. The authors undertook to determine whether equally good results in the reduction of bacteria can be obtained by pasteurizing milk in bulk and by bottling it while hot. In their method, milk is pasteurized by the ordinary holder system at 140° F. for thirty minutes. It is then placed in bottles that have been steamed for two minutes. After filling, the bottles are placed in a refrigerator room and cooled by air. From a sanitary standpoint, one great advantage of bottling hot is the fact that hot pasteurized milk may be bottled in hot bottles so that bottle infection is avoided. The chief disadvantage is that the air cooling process requires several hours.

A Study of Trachoma and Allied Conditions in the Public School Children of New York City.—Anna Williams, assisted by a group of workers, has published a very important review of so called trachoma and of the conditions with which it is associated. To quote one of the contributors: "To the medical profession it seems hardly necessary to state that the diagnosis of trachoma, except in the cicatricial form, is an exceedingly difficult matter, the more so in view of the fact that the existence of such a pathological entity has recently been doubted. Is there or is there not a specific chronic inflammatory affection of the conjunctiva frequently accompanied by a characteristic involvement of the cornea, which begins with thickening of the adenoid layer and the localized accumulation of small round cells of various kinds, which are gradually transformed into granulations and cicatricial tissue? This question has been answered in the affirmative by most of the better known writers. Recent investigations, however, have tended to throw doubts on this time honored theory and to suggest that trachoma, far from being a disease *sui generis*, consists rather of a series of infections, possibly of similar, perhaps of dissimilar character; from which, at certain stages, patients may recover spontaneously, or be cured by treatment, but which, after a certain period, result in cicatricial formation." Concerning the trachoma inclusions, it is believed that they are nests of growing bacteria in epithelium—hemoglobinophilic bacilli in certain cases of papillary conjunctivitis, gonococci in certain cases of gonorrheal conjunctivitis, and possibly other bacteria in certain other cases of conjunctivitis. The work, represented by these investigations, among the children of sixty public schools in the crowded lower East Side of New York city (supposed to be a hotbed of trachoma), during the past four years has shown no cases of conjunctival affections answering in their entirety to the classic descriptions of trachoma.

JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS.

March, 1914.

Vagus Stimulation and Atropine.—J. D. Pilcher and Torald Sollmann found that the dose of atropine required to produce a full vagus effect is only two to four times as great as the smallest effective dose. A partial atropine effect can be overcome by increasing the strength of vagus stimulation. The left vagus is less susceptible to stimulation and more susceptible to atropine than the right. Low blood pressure renders the animals more susceptible to atropine and less so to vagus stimulation. The duration of atropine paralysis varies with the dose. Small doses of atropine have no effect on blood pressure when the vagi are divided. With intact vagi the rise is secondary to the increased heart rate and not to vasomotor stimulation. A maximal atropine effect cannot be overcome by the strongest vagus stimulation; a subthreshold vagus stimulation cannot be brought above the threshold by stimulating the other vagus.

The Alkaloids of Quebracho.—Douglas Cow reports experiments made with the four principal alkaloids of quebracho: Quebrachine, aspidospermine, quebrachamine, and aspidosamine. Of these, quebrachine proved to be the most toxic. In small doses it stimulates the central nervous system, as do the other alkaloids. The respiration becomes both quicker and deeper. In larger doses quebrachine paralyzes the nerve cells of the autonomic system, brain and cord. In still larger doses it paralyzes the vagus, the sympathetic, and the motor nerve endings. It belongs to the curare-nicotine-coniine group of drugs, and causes death by central respiratory paralysis before the motor nerves lose their responsiveness to electric stimulation. It was observed that after quebracho alkaloids had been given epinephrine failed to raise the blood pressure.

Circulatory Changes in Periodic Respiration.—A. J. Clark and P. Hamill present clincal observations showing that in some cases of periodic breath-

ing the asphyxial changes in the blood during apnea are sufficient to affect the heart directly. At the end of the apneic period there were observed in four cases a slowing of the pulse, fall in blood pressure, and increase in the a-v interval. Administration of pure oxygen, in sufficient concentration, will relieve the irregularity of breathing and heart action, even in extreme cases of periodic respiration.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

March, 1914.

Angina Pectoris: Its Clinical Physiology.—G. O. Jarvis asserts that all cases of angina pectoris which he has examined showed marked dilatation of the heart and aorta, with auricular fibrillation. He does not doubt that the pain of anginal paroxysms is due to overdistention of the heart, as pain was observed to end with the distention. The cause seems to be arterial disease with high blood pressure and blocking of the coronary arteries. Associated with this, according to Jarvis, is vagus hypotonia; the vagus tone is progressively exhausted during the progress of the attack, and is considerably less than normal in the interval between attacks. The blood pressure is high at the beginning of an attack, but sometimes drops to less than 100 mm. Hg. at its close. During the attack there are marked variations in the blood pressure, according as the heart is gaining or losing in its struggle to compensate. Heart block and irregular heart were found in all cases examined. There was a relation between the degree of distention of the heart and the degree of cardiac irregularity. The pains of angina pectoris may be relieved by measures that increase the tone of the neuromuscular apparatus of the heart and aorta. The most rapid and efficient method of treatment is concussion at the level of the seventh cervical vertebra in conjunction with the use of some drug, such as pilocarpine (one tenth grain hypodermically), to aid in the increase of vagus tone. In a case referred to, the concussion at the seventh cervical vertebra reduced the diameter of the heart by five cm. on two separate occasions, and brought relief from pain in about ten minutes. Morphine should be employed with great care in these cases, as it deadens the receptivity of the reflex centres which preserve heart tone, and an overdose may cause and has caused sudden death from unrestrained distention of the heart or aorta. Atropine and hyoscine are contraindicated, as their effect is to dilate the heart and aorta and decrease their tone.

SOUTHERN MEDICAL JOURNAL.

April, 1914.

Pathology of the Heart in Rheumatic Infection in Children.—W. W. Harper states that in the post mortem room of the Great Ormond Street Hospital for Sick Children, London, he studied hearts from children who had died from rheumatic infection. This study demonstrated that: 1. In children endocarditis is often the only sign of rheumatism. 2. Chorea is the result of a rheumatic infection, and every child suffering from acute chorea should be placed in bed and kept there until the acute symptoms have subsided. 3. A primary attack of endocarditis is not ulcerative. 4. A first attack of rheumatic endocarditis usually leaves the heart valves in such a condition that vegetations frequently develop during a second attack of rheumatism. 5. Such valves are peculiarly vulnerable should the patient be subsequently attacked by any of the pus producing bacteria.

Symptoms of Rheumatism in Childhood.—H. P. Dawson says that in a child the articular phenomena of rheumatism become a matter of merely secondary importance; indeed, a child may suffer severely from rheumatism who has never had a pain in its joints. In England much stress is laid upon the presence of subcutaneous fibroid nodules as a manifestation of rheumatism, but the rheumatic nodule appears to be rare in America. He calls attention to the relation between tonsillitis, chorea, and rheumatism, and refers to the significance of more or less vague pains in the limbs and elsewhere. Stiff neck may be the earliest manifestation, and a common trouble in rheumatic children is headache. The rheumatic child is, above all, a nervous child; rheumatism is frequently associated with night terrors, somnambulism, habit spasm, and lienteric diarrhea. One other phenomenon, worthy of note, is the association of red hair with rheumatism and rheumatic heredity.

Cocaine as a Respiratory Stimulant.—G. E. Pettey, from a rather extended experience, has come to regard cocaine as the most prompt and efficient of all respiratory stimulants. He is accustomed to give half a grain hypodermically, repeating the dose as required. Two illustrative cases are cited. One was in a patient suffering from alcoholism with threatened respiratory failure, who had been in a semicomatose condition for two days; the other was a case of paraldehyde poisoning.

Treatment of Ununited Fractures.—Duncan Eve says that, as in every other procedure, the method must be adapted to the case, not the case to the method. An ideal method would consist in the employment of something which, while holding the fragments firmly and not producing irritation of the tissues, would undergo absorption, leaving no foreign substance to be removed or be the cause of late infection. Unfortunately, nothing ideal has yet been discovered which experience can safely commend. At the present time, plate and clamp are most popular, although bone grafts are rapidly gaining ground.

Proceedings of Societies.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twenty-sixth Annual Session, Held at Atlanta, Georgia, December 16, 17, 18, 1913.

The President, Dr. JOHN YOUNG BROWN, of St. Louis, in the Chair.

(Continued from page 757.)

Treatment of Trigeminal Neuralgia by Deep Intraneural Injections.—Dr. RUDOLPH MATAS, of New Orleans, considered the subject from the double point of view: 1. Analgesia of the territory

sensitized by the trigeminus, for purely surgical purposes; 2, analgesia of the trigeminus for the relief of neuralgia. He recalled his early pioneer efforts as early as 1889, when working with regional anesthesia, he succeeded in anesthetizing the second division of the fifth nerve at both foramina rotunda by injecting the trunk of the nerve at its exit from the foramen, and obtained sufficient anesthesia to permit of a complete excision of both upper maxillæ for an extensive carcinoma of the upper jaw and palate. Both upper maxillæ were excised at the same sitting. Prior to that time, he had performed several operations on the jaws by reaching the nerve trunk at the foramen rotundum through the inframalar route, which had since been associated with his name, and was practically the route subsequently adopted by Schlosser for the introduction of alcohol into the nerve at its exit from the foramen. But in this particular instance he injected the nerve at the foramen rotundum through the orbit by the route of the sphenomaxillary fissures, filling the sphenopalatine fossa with a cocaine solution so as to obtain a complete anesthesia of the second division and Meckel's ganglion with all its branches. This was the route that by a mistaken impression was credited to Payr and which Härtel had recently extolled as the most direct and satisfactory way of reaching the foramen ovale. He also resorted to the lateral inframalar route, to reach the foramen ovale, and thus controlled, by the two methods, the area supplied by the second and third divisions. Results obtained in several cases of resection of the lower jaw for malignant diseases were quite satisfactory from the analgesic and operative point of view.

Since the introduction of intraneural injections of osmic acid by Neuber, and especially of alcohol by Schlosser, in 1907, he had devoted special attention to the technic of injecting the nerve trunks for the relief of tic douloureux. More recently, however, he had gone a step further by attacking the Gasserian ganglion itself, and concluded that in the hands of an expert, careful, and experienced surgeon, the anesthesia of the trunks of the trigeminus at the basal foramina, more particularly the second and third divisions, and the Gasserian ganglion itself, was a perfectly feasible and practical procedure which could render decided service in the surgery of the face. It would also permit of a satisfactory, safe, and certain relief of trigeminal neuralgia, especially when the exact localization of the nerve or the ganglion was determined by obtaining a complete and demonstrable anesthesia with novocaine adrenaline, before the alcohol injection was made. The injection of the ganglion through the foramen ovale by the Härtel route was not free from fallacies and dangers, but, taken as a whole, it constituted a decided advance in the regional anesthesia of the face.

Infraction of the Second Metatarsal Bone.—Dr. Albert H. Freiberg, of Cincinnati, reported six cases in which the patients presented themselves because of pain at the metatarsophalangeal joint of the second toe. In these cases the x ray examination showed that there had been an infraction of the distal end of the second metatarsal bone. In three of the cases there were loose bodies in the joint and in two they had to be removed in order to give relief. No case was seen less than four weeks after the injury, and in two cases there was no recollection of it. The trauma was always a slight one, occurring at tennis in three of the cases and consisting merely of a false step. These cases had probably often failed of recognition because of the similarity of the symptoms with those of the so called "anterior flat foot." Aside from the röntgenogram, the diagnostic features were the traumatic origin, thickening, and marked tenderness of the second metatarsophalangeal joint and grating on passive movement if loose bodies were present.

The treatment was purely mechanical, save when loose bodies indicated arthrotomy for their removal, either because of their size or number. In one case permanent relief without operation resulted even though a loose body two mm. in diameter was present. Not a little interest attached to the mechanism which took place by this injury to the foot. Under normal circumstances the second metatarsal bone was slightly longer than the first. In the presence of a diminished power of toe flexion and especially of the great toe, it was apparent that forcible impact of the ball of the foot against the ground not sufficiently guarded by the flexor power of the toes, would cause the distal end of the second metatarsal to bear the brunt of the blow. It seemed likely that we had here the explanation of the mechanism of this injury.

Open Treatment of Fractures.—Dr. George A. Hendon, of Louisville, stated that the indications for the use of the plate were as follows: 1. In fractures that could not be reduced by ordinary manipulations. Such situations developed frequently in impacted fractures and in fractures where one fragment was very much shorter than the other and overriding existed. 2. Fractures that were difficult to maintain in reduction, as in those where a process of bone was broken off. For example, a condyle of the humerus or the olecranon, and cases where the muscular attachment was so strong and the lines of force so directed as to pull the fragments apart, as in the femur. 3. Delayed union. 4. Where good cosmetic effects were especially desirable, as in the clavicle or forearm of young women. 5. In fractures communicating with a joint wherein imperfect alignment or over production of callus was likely to seriously interfere with function. The mortality of the operation *per se* was a negligible quantity, especially if the operation was resorted to in the recent period after the fracture and performed under the proper restrictions.

Fracture of the Neck of the Femur.—Dr. James E. Moore, of Minneapolis, stated that the fact that bony union after fracture of the neck of the femur could be secured had been demonstrated repeatedly, but had not yet been accepted by the profession. The fact that fracture of the neck of the femur frequently occurred in children had not been generally recognized. The indications in treatment of fracture of the neck of the femur were the same as in other fractures, viz., to bring the fragments into apposition and hold them there. The method he advocated secured this apposition where

the old methods failed. Whether the theory of the newer treatment was correct or not was immaterial, because the fact was that they produced the desired results. Older methods failed to control the shorter fragments; the new methods succeeded. The principle of the new method was that by adding a side pull to Buck's extension, the resultant of the two pulls was a pull outward in the long axis of the neck of the femur. This rendered the capsule of the joint taut, and brought the floating short fragment into contact with the longer one. This side pull was brought to bear upon the inner side of the upper end of the thigh by means of weight and pulley, the amount of weight being about one third of that at the foot of the bed.

In a child a healthy joint might be fixed almost indefinitely without danger of ankylosis, but in an adult ankylosis was a real danger following fixation. In the modern treatment the knee could be flexed and the patient allowed to sit up in bed without interfering with the position of the fragments. In the old methods he had but one case in which the result was approximately satisfactory. After the new method all but two had been satisfactory; in one of those the patient contracted rheumatism, and the other lacked the power to produce osteoblasts. A satisfactory result was secured in one patient sixty-six years of age, when the treatment was not applied until four weeks after the accident.

The surgeon who refused to accept the testimony of those who had tried this method was doing himself and his patrons an injustice. When nonunion occurred because of faulty treatment there was still hope for the patient through operation, but it was useless to operate upon patients who had no bone producing power. Whitman's method of extreme abduction and retention by plaster of Paris would secure bony union, and was undoubtedly the best method for the treatment of children, but it was neither as comfortable nor as convenient as the "anatomic" method for adults.

President's Address: Diagnosis and Surgical Technic of Acute Abdominal Conditions.—Dr. JOHN YOUNG BROWN, of St. Louis, considered, first, gunshot and stab wounds of the abdomen; second, injuries to abdominal viscera, resulting from severe abdominal contusions; third, acute intestinal obstruction. Gunshot and stab wounds of the abdomen might be classified under three heads: 1. The simple penetrating wound, or a wound where the knife or bullet penetrated the peritoneal cavity without injury to abdominal viscera. 2. Penetrating and perforating wounds, or wounds where the knife or bullet penetrated the peritoneal cavity and injured either solid or hollow viscera, or both. 3. Complicated wounds, or wounds in which the entrance to the abdominal cavity was made by knife or bullet through the chest, pleura, and diaphragm with or without injury to abdominal viscera.

It was at times very difficult to differentiate between the simple penetrating wound and the penetrating and perforating wounds. Time and again he had operated on a patient whose abdomen had been penetrated by a bullet with both a wound of entrance and exit, where no damage to peritoneal viscera was found when the abdomen was opened and careful search for perforations was made. Such wounds gave few or no symptoms. Again, he had operated in many cases in which there was present within multiple bowel perforations, giving no symptoms indicating the serious nature of the injury, for the reason that the patient was not bleeding, as the perforations were in the bloodless portion of the bowel.

In the penetrating and perforating wounds, giving no alarming symptoms, delay in exploring was the usual rule, and when the exploration was at last made, the patient was found to be suffering from a lethal peritonitis. In contradistinction to the symptoms occurring in these cases, they had another type of penetrating and perforating wounds, giving immediate and alarming symptoms. In these cases multiple perforations of the mesentery were present and profuse bleeding occurred at once, bringing about profound symptoms of shock. Such cases demanded immediate operative treatment. Complicated wounds resulting from both knife and bullet were wounds in which the peritoneal cavity was penetrated by the entrance of the bullet or knife through the chest, the abdomen being opened through the diaphragm. While the majority of wounds of this type were readily recognized, he had seen a number of such injuries in which the diagnosis was difficult. In all stab and gunshot wounds, where the bullet or knife entered as low as the sixth interspace, irrespective of symptoms, injury to the diaphragm should be suspected and such wounds should be explored.

The surgical treatment of gunshot and stab wounds of the abdomen might be considered under four heads: 1. Preparation and examination of patients. 2. Method of locating injury to peritoneal viscera. 3. Repair of such injuries. 4. Aftertreatment. In the repair of perforations of the bowel, he had found that they could best be closed either by a pursestring suture or by a through and through stitch, supplemented by the Lembert's stitch. In gunshot work where end to end anastomosis was necessary, he much preferred the button to the suture. It had been his invariable custom to drain all gunshot and stab cases where there was extensive soiling of the peritoneal cavity and where severe hemorrhage existed. The drainage was accomplished by means of a glass tube introduced through a stab wound above the pubis and placed at the most dependent portion of the vesicorectal pouch.

As to treatment, no hard and fast rules could be laid down. Too much stress could not be laid on the importance of preparing such cases for operation. As the majority of patients came in profoundly toxic and vomiting fecal matter, stomach lavage should invariably be done before the anesthetic was given. The surgical technic should be carried out as rapidly as possible, consistent with thorough work. He could not too strongly emphasize the importance of draining the bowel of its highly toxic contents in every case. The aftertreatment of all of the types of cases considered should be as simple as possible. It was his custom, unless there were special contraindications, to

allow such patients to have all the water they desired. Strychnine was never used, and morphine was rarely needed. Proctoclysis, normal saline used by the Murphy method, he had found of value. The Fowler position he had practically abandoned as a method of treatment, not only in the types of injuries above described, but in his other acute work.

Primary, Secondary, and Tertiary or Migratory Epithelial Hyperplasia in the Breast.—Dr. Wm. Carpenter Maccarty, of Rochester, Minnesota, said that the plan which suggested itself to him, after an extensive experience with the pathological conditions to be dealt with and also an intimate association with the activities of surgeons, seemed to be based upon some known factors relative to the histology of epithelial functions, and the fact that surgeons differed regarding the extent of operations necessary in the conditions which had been described. 1. The conditions which were associated with classical signs of carcinoma should be treated radically. 2. In the doubtful cases in women nearly or over thirty-five years of age, the entire mammary gland should be removed for immediate examination. If primary or secondary hyperplasia was present, nothing more should be done; if tertiary hyperplasia was present a radical operation should be performed. 3. In doubtful cases near or under thirty-five years of age a wide section of the mammary gland including the pathological conditions should be removed for examination. If primary hyperplasia was present nothing more should be done. If secondary hyperplasia was present the rest of the mammary gland should be removed, and if tertiary hyperplasia was present the radical operation should be acomplished.

This plan avoided incision of tumors. It removed the possibility of unnecessary radical operation and their physical and psychical embarrassment. It provided for a scientific means of determining more acurately the stage at which cancer might be cured by surgical operations and the extent of the operation which was necessary to effect such a cure. Removal of the mammary gland preceding an immediate radical operation had not been associated with earlier recurrence than had been found after a primary radical operation. The plan was proposed with the realization that it was a conservative experiment, based upon scientific facts, and upon actual research upon each specimen, being free from the encumbrances of extensive terminology and dogmatism relative to what was and what was not carcinoma.

End Results in Operations for Cancer of the Breast.—Dr. E. S. Judd, of Rochester, Minnesota, presented a review of the results of operations for mammary cancer in the Mayo clinic from January 1, 1902, to January 1, 1912. This covered 608 cases, of which it was possible to trace the subsequent histories in 514. In all the patients the operations were radical and consisted in the removal of the entire breast, axillary glands, and fascia, including the pectoralis major and minor, usually all in one piece. The diagnoses in all of the cases were made from both macroscopic and microscopic evidence. Of the 608 patients, two were men, one of whom was alive without recurrence three years after the operation, and the other died at the end of two years and eight months from recurrence. The youngest patient was twenty-five years of age and the oldest eighty-five years of age.

While noting the importance of an immediate radical operation after a diagnosis of carcinoma from a test specimen, he had observed that the delay in such procedure did not necessarily always mean a bad prognosis. Conversely, he had noted that patients in whom there was a very small mammary lesion without determinable glandular involvement, might die of early internal metastases. While edema of the tissues was usually a contraindication to operating, one patient in his series in whom the prognosis was bad because of edema and yet who was operated on as a palliative measure, was still alive without recurrence over five years later. Cancer in the lactating breast had usually been rapidly fatal. A very large percentage of the patients heard from had reported that functionally their arms were all right or practically as good as ever. When it had been necessary to destroy one of the motor nerves, the function of the arm was much more apt to be impaired. Not over five per cent. of the cases had had swelling of the arm.

His conclusions were as follows: 1. Results in operations for cancer of the breast were as good if not better than results in operations for cancer elsewhere. 2. The prognosis in younger people who received the benefit of an early operation was better than they had expected. 3. The prognosis was variable in a certain percentage. An extensive external involvement might give a fair prognosis, while a slight external lesion might terminate early from internal metastasis. 4. Metastasis might occur many years after the operation, though in the great majority of instances they would appear in the first few years if at all. The difference between the percentage of patients living over ten years was not as great as might be expected, but this was because most patients who died of the disease died within the first three or at least the first five years. Five years without recurrence meant a very small probability of trouble afterward. 5. Comparing these results with those of former years, they felt that results were improving and the improvement seemed to be due to the fact that patients were coming earlier rather than to any change in the technic.

Surgery of the Pancreas.—Dr. R. C. Coffey, of Portland, Oregon, had reached the following conclusions: 1. The peritoneum must be brought to the field of operation in all direct pancreatic surgery. 2. Fat necrosis could only occur when the pancreatic fluid was delivered directly into the extraperitoneal fat. 3. Pancreatic fluid was no more dangerous than bile to the peritoneum, provided ample drainage was used to deliver it to the surface at once. 4. The pancreatic duct seemed to depend upon contiguous pancreatic tissue for its nutrition, and therefore was not adapted to direct implantation into the intestine. 5. The cut end of the pancreas, carrying an open duct, might be implanted into a loop of intestine with the same assurance that an intestinal anastomosis was made. There was a marked tendency of the pancreatic ducts to reestablish continuity around a gap or an

obstacle, provided the pancreatic fluid was temporarily delivered to the surface. 7. If the head of the pancreas was removed, the open end brought to the surface, a pancreatic fistula resulted which usually closed in a few weeks. The secreting portion of the gland was rapidly destroyed, leaving a fibrous cord which contained many islands of Langerhans.

These principles were borne out by the clinical work which had been done. The importance of surgical intervention in traumatic conditions of the pancreas was indicated by the following statistics from Mikulicz: Of forty-five cases of pancreatic injury, there were twenty-one of penetrating wounds; twenty-four subcutaneous or penetrating, twelve gunshot wounds, nine stabs; five of the twelve gunshot cases were operated in, three recovered; seven not operated in, all died; seven of the nine stab wounds were operated on and recovered; of twenty-four cases of subcutaneous wounds, thirteen not operated in, all were fatal; of eleven operated in, seven ended in recovery.

These results corresponded exactly to the principles set forth in the experimental work that drainage was the only essential feature. Finney and others had resected the middle of the pancreas and brought the cut ends together, using drainage temporarily to take care of the pancreatic juice. Finney's patient made a perfect recovery. Bloodgood had removed the head of the pancreas for cancer, had brought the cut end to the surface, produced a pancreatic fistula, which finally closed. The patient died, nine months later, from recurrence of cancer in the liver. Post mortem examination showed destruction of the pancreatic secreting tissues, leaving a fibrous cord which retained the islands of Langerhans. The exact result was the same as observed in experimental work. He had removed the tail of the pancreas, as had also Mayo and many others. The duct closed in a very few days, just as occurred in experimental work. The only principle of the experimental work which had not been paralleled by clinical work was the implantation of the pancreas into the intestine in the human subject. Freeman, of Denver, had performed that operation by his technic and found it not at all difficult. Unfortunately his patient died as a result of shock. Taking it all together, comparing the clinical work which had been done empirically, and the experimental work which he had performed, their perfect harmony seemed to indicate that they had reached a definite basis for pancreatic surgery. Barring the greater anatomical difficulties, they might safely say that surgery of the pancreas was probably on exactly the same basis as surgery of the galltracts.

Significance of Pain in the Right Iliac Fossa in Young Women.—Dr. RANDOLPH WINSLOW, of Baltimore, believed that unless the symptoms of appendicitis in young women were frank and clear, the condition was probably something else. Pain and tenderness in the right side, without rigidity, elevation of temperature, and leucocystosis was usually not appendicitis. Apparently severe and long continued pain in the right side in girls was more likely to be neurotic than appendicular. Pain might also be reflected from the pelvic organs or some of the other viscera, and the primary seat of the disturbance might be determined by a more careful examination. He thought we frequently operated too hastily after a diagnosis of appendicitis, without considering sufficiently the other possibilities in a case.

(*To be concluded.*)

Letters to the Editors.

THE MODERN DANCES AND SEXUALITY.

NEW YORK, *April 27, 1914.*

To the Editors:

Dr. A. A. Brill's writings always make interesting reading, and I read The Psychopathology of the New Dances, in the current issue of the NEW YORK MEDICAL JOURNAL with interest and pleasure.

I fully agree with him that modern dancing, the same as any kind of dancing, is but a sexual surrogate. I agree with him that dancing acts as a safety valve in many instances, and is "as soothing to the populace as rocking is to the infant," though the simile is rather unfortunate, for rocking is not always a good thing for the infant. But he is just a bit too dogmatic when he says: "I absolutely disagree with those who assert that it does harm, that it promotes sexuality, and so on."

It is not safe for any physician to make generalizations with his personal experience as the sole basis of such generalizations, for I can assure him that in very, very many instances just the contrary is the case. I could tell him of many cases where the injury, the irritation produced by the modern dances could be proved without a shadow of doubt. Several patients told me that the dancing produced in them prostatic congestion, testicular or ovarian pains, and not infrequently nocturnal emissions. Some, though extremely fond of this dancing, had to give it up on that account.

Of course in married people or in people living a regular sexual life the injurious effects of the dancing are insignificant or nil. But we must not forget, which I fear Doctor Brill did, that we have a large population of both sexes which leads a completely or relatively abstinent life, and to them the modern dances are in many instances decidedly injurious. I agree that even in such cases it often acts as a safety valve, and under *Useless Sexual Excitement* I have shown that where regular sexual relations are impossible the mere proximity of the opposite sex is often beneficial, relieving the extreme tension, etc. But we must guard against dogmatic assertions, for in other cases this mere proximity acts as a cause of nocturnal and even diurnal emissions.

I would summarize this letter as follows: In people leading a normal sexual life modern dancing is harmless and should be encouraged, because it affords pleasure and every harmless pleasure is to be encouraged. As to those who are forced to lead an abstinent life we have two classes. In one class it acts as a safety valve and is to be recommended *faute de mieux*. In another very large class, however, it acts distinctly as a sexual excitant and produces all the evils of sexual excitation which is not followed by sexual satisfaction, namely prostatic and testicular or ovarian congestion and pain, and nocturnal or even diurnal emissions. I know also cases where it led to masturbation.

WILLIAM J. ROBINSON, M. D.

EMETINE HYDROCHLORIDE IN EPISTAXIS.

NEWTON, ILLINOIS, *April 28, 1914.*

To the Editors:

I desire to report the following case illustrating the efficiency of emetine hydrochloride in severe epistaxis.

Mrs. M., aged seventy-three years, wife of physician. History of nocturnal nose bleeding regularly for about ten days; would awake about 2 a. m. with choking sensation, and find mouth full of blood, and blood flowing freely from nose. Her husband used the usual local treatment by

applying cold cloths to nape of neck, etc. When I called to see her, she had already lost at least one pint of blood and was bleeding freely from the nose—a regular stream. I injected, hypodermically, one half grain emetine hydrochloride from an ampoule, and in twenty minutes the hemorrhage had ceased entirely. I repeated the same quantity of emetine the following day, and for *five* days longer.

Her blood pressure being away high, I gave her eight minims of tincture of strophanthus three times daily and she has had no further hemorrhages since. Trusting that this report may be of benefit to others having similar cases to deal with, I submit it for their benefit.

JAMES P. PRESTLEY, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Immunity. Methods of Diagnosis and Therapy and Their Practical Application. By Dr. JULIUS CITRON, Assistant at the University Clinic of Berlin, II Medical Division. Translated from the German and Edited by A. L. GARBAT, M. D., Assistant Pathological and Adjunct Visiting Physician, German Hospital, New York. Second Edition, Revised and Enlarged, 30 Illustrations, 2 Colored Plates and 8 Charts. Philadelphia: Blakiston's Son & Co., 1914. Pp. xvii-263. (Price, $3.50.)

The fact that the German edition of this work since it first appeared, has been translated into Italian, English, Spanish, and Russian indicates clearly the estimate placed upon it by investigators. The present English edition, the second, which became necessary one year after the appearance of the first, is in reality more satisfactory than the corresponding German edition, since various topics of recent development, treated scantily or not at all in the latter, are amplified or inserted as the case may be. Among these may be mentioned the gonococcus and typhoid complement fixation tests, agglutination and hemolysis tests for transfusion, prophylactic typhoid inoculation, and other subjects of great practical value, not only to the investigator, but also to the modern practitioner.

Our Nation's Health Endangered by Poisonous Infections Through the Social Malady. The Protective Clinic of San Francisco and Its Fight for Existence. By Dr. JULIUS ROSENSTIRN, Chief of Staff and Attending Surgeon to Mount Zion Hospital, San Francisco, 1913. Pp. 56.

This little pamphlet of fifty-six pages is full of fire. It begins with the words "These pages are written for men and women"; and closes with the cry: "O for a real Man, who, intrusted with leadership, shows staunch strength and undaunted courage to stand by his just convictions!" The author believes in free love (page 11) and in segregation. In reference to the latter he says: "These are not the views of vice commissions, professors, academic and moral theorists, but convictions acquired after long years of daily contact with this phase of life." The Municipal Clinic of San Francisco examined prostitutes every four days, charging fifty cents for each examination, and provided the patient with a card stating when she had been last examined and found free from disease. Treatment and hospital accommodation were provided free to those found to have venereal disease. Toward the end of the two years, during which the clinic was conducted, the average attendance appears to have been over 700 patients a month. During the two years, some 200 prostitutes were reclaimed. It is quite impossible to derive satisfactory conclusions from this book as to the value of the clinic, since its sponsor can see only one side of the question. The clergymen who opposed the clinic are spoken of as "placing themselves as models for the rest of humanity to emulate what they preached, if not always practised" (*sic*). His use of letters of inquiry, as though they expressed approval of the clinic, and his absolute denial of any positive evil arising from this system of reclamation, simply show how strongly the author feels upon the subject. It is a pity he could not be more open minded.

A Reference Handbook of the Medical Sciences. Embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Writers. First and Second Editions Edited by ALBERT H. BUCK, M. D. Third Edition Completely Revised and Rewritten, Edited by THOMAS LATHROP STEDMAN, A. M., M. D. Complete in Eight Volumes. Volume Two. Illustrated by Numerous Chromolithographs and Seven Hundred and Fifty-four Fine Half Tone and Wood Engravings. New York: William Wood & Co., 1913. Pp. v-832.

The second volume of this work covers a considerable field. Beside various drugs, instruments, biographies, balneary stations, and other features of interest to physicians that are considered, several subjects of major importance are ably reviewed at length. Among these may be mentioned the bladder and its diseases by Hugh Cabot; the blood and its disorders by E. D. Forrest; the circulation and its diseases by C. N. B. Camac, L. Faugères Bishop, and others. The bones and their diseases, by R. H. M. Dawbarn; the brain and its diseases, by S. T. Orton, M. Allen Starr, and others, and its surgery by the late Roswell Park, assisted by E. R. McGuire; the breast and its diseases, by W. M. D. Martin; bronchoscopy and direct laryngoscopy, by Chevalier Jackson; carcinoma, by J. A. Fordyce, are all worthy of special mention. Those who, like Doctor Stedman, have edited encyclopedic works, are familiar with the vast difficulties which a revision such as the present one entails, particularly on account of the gigantic strides of medicine during the last decade. The present volume shows evidence of earnest desire on the part of the editor and his collaborators to do justice to the task entrusted to them, and is an improvement on the first volume in many particulars.

Nervous and Mental Diseases. Edited by HUGH T. PATRICK, M. D., Professor of Neurology in the Chicago Policlinic, Clinical Professor of Nervous Diseases in the Northwestern University Medical School, etc. PETER BASSOE, M. D., Assistant Professor of Nervous and Mental Diseases, Rush Medical College. The Practical Medicine Series, 1913. Volume X. Chicago: The Year Book Publishers. Pp. 244. (Price, $1.35.)

Doctor Patrick and Doctor Bassoe have done unusually well for the general practitioner in this volume of the Practical Medicine Series, presenting the difficult problems of the pathology of the nervous system in clear language. There is as much space devoted to the theories of Freud as could well be expected, and the arguments pro and con are presented, by Freud himself and A. Hoche respectively, the former represented in translation by Dr. William A. White. The literature of the neuroses and of the organic diseases of the brain and spinal cord is admirably summarized, and there is an interesting chapter on miscellaneous diseases. Acquaintance with the nervous system and its disorders is a necessity to the cultivated practitioner, for therein lies the key to many pathological mysteries.

Die Störungen der männlichen Geschlechtsfunktionen und ihre Behandlung. Von Dr. EMIL KANTOROMICZ, Arzt. Mit 11 teils farbigen Abbildungen. Berlin und Wien: Urban & Schwarzenberg, 1913. Pp. viii-118. (Through Rebman Company, New York.)

This little book might be called a pocket edition Krafft-Ebing. It has a fairly long chapter on the anatomy and physiology of the genitourinary tract, and following this chapters on the various perversions of the sexual function. But short space is given to the local treatment of posterior urethritis and prostatitis and a good deal of space to psychic treatment and hypnotism, while nineteen pages are devoted to various aphrodisiacs.

Entwicklung und gegenwärtiger Stand der Arsentherapie der Syphilis mit besonderer Berücksichtigung des Salvarsans (Ehrlich-Hata 606) und des Neosalvarsans. Nebst einer systematischen Zusammenstellung der bisher veröffentlichten Literatur. Von Dr. med. VICTOR MENTBERGER, Assistenzarzt der Universitäts-Hautklinik zu Strassburg i. Els. Mit einem Vorwort von Prof. Dr. A. WOLFF, Direktor der Universitäts-Hautklinik zu Strassburg i. Els. Jena: Gustav Fischer, 1913. Pp. viii-339.

This volume is encyclopedic in character. It contains over three thousand references to the literature and describes over 250 fatalities following the use of salvarsan and neosalvarsan, forty due to salvarsan administered to non-syphilitic subjects, and twenty-six due to neosalvarsan.

The advantages and disadvantages of salvarsan in various stages of syphilis are carefully weighed, and although the incessant and repetitious citation of authorities is a little overdone, it is satisfactory to read, in the summing up, the statement that "salvarsan, even if repeatedly injected, does not cure syphilis. A cure requires the familiar prolonged intermittent mercurial treatment."

Interclinical Notes.

It is a sign of the times that a Philadelphia publishing house, J. B. Lippincott & Co., should credit to Hall Caine the sentence, "Love is stronger than death; many waters cannot quench it." In a quaint old book of large circulation, little read today, we once found credited to Solomon a *Song* in which occur the words: "For love is strong as death; . . . Many waters cannot quench love, neither can the floods drown it." This is a bold statement concerning love, but it will be observed that Mr. Caine is of the opinion that it is not bold enough.

* * *

Dr. Samuel M. Brickner, for many years an honored editorial assistant to this JOURNAL, contributed the following striking verses to the *New York Times* for April 23d:

ANTIVIVISECTIONIST MERCY.

The counterpane that covers motherhood
Too often still becomes a shroud entwined:
"Let not this sacred act demand our blood
But spare the dog and all his sacred kind."

Our little children fall a hideous prey
To childhood's scourge, and broken, bent, they lie:
"Blot out this epidemic from the day,
But spare the monkey and the stable fly."

The White Plague stalks abroad with poisoned breath
And leaves men prostrate like a broken twig:
"Oh! spare us from this poignant, living death,
But do not touch the precious guineapig."

From overseas the pest comes like a ghost,
And settles grinning on our household mats:
"Oh! save us from this devastating host,
But spare the poor mosquitoes and the rats."

A growth malign, with tentacles a score,
The fairest and most useful friends will claim:
"Oh! let us suffer from this scourge no more,
But spare the mouse, we ask, in Mercy's name."

* * *

Our immediate predecessors in America were naturalists from necessity and knew how to gather simples in the woods for the preparation of drafts to expel humors from the blood; perhaps our friends have inherited enough of the naturalist's spirit to enjoy a sympathetic notice of John Burroughs in the *Dial* for April 16th, breathing admiration of his reality, interest, and inescapable charm. An editorial article, Beasts of Burden, will appeal to the professors among us perhaps. Do we teach better than the average schoolmaster?

* * *

There is some good stuff in the *Intercollegiate Socialist* for December-January, 1913-14. We hold that physicians are to be the first real socialists, as they have begun to be in England. In the journal under discussion, Charles Zueblin begins a paper on The Scientific Outlook by the statement that "a college education that does not equip the student with a scientific mind and a *Weltanschauung* is not worth the sheepskin that covers too many unbred wolflings." According to Mr. Zueblin, the chief essentials of twentieth century culture are evolution, the higher criticism, and socialism.

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In his own way Rodin is as great an anatomist as any of us. His Note Book, compiled by Judith Cladel, appears in the *Century* for May, exquisitely illustrated by reproductions of his drawings and photographs of some of his portrait busts and statues. Other fine pictures show President Wilson and the late Theodore Low De Vinne, to whom all people connected in any way with printing and publishing owe so much. Physicians being numerously enrolled among the golfomaniacs, will read the iconoclastic text of P. A. Vaile with interest. Harold C. Goddard attempts to tell us What is Wrong with the College.

Meetings of Local Medical Societies.

MONDAY, *May 4th.*—Clinical Society of New York Throat, Nose, and Lung Hospital; German Medical Society of the City of New York; Utica Medical Library Association; Niagara Falls Academy of Medicine (Annual); Brooklyn Hospital Club; Hornell Medical and Surgical Association; Clinical Society of the New York Polyclinic Medical School and Hospital.

TUESDAY, *May 5th.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Amsterdam City Medical Society; Lockport Academy of Medicine; Society of Alumni of Lebanon Hospital, New York; Syracuse Academy of Medicine; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh Medical Association; Oswego Academy of Medicine; Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Medical Society of the County of Yates, N. Y.

WEDNESDAY, *May 6th.*—Brooklyn Society for Neurology; Society of Alumni of Bellevue Hospital; Harlem Medical Association, New York; Bronx Medical Association; Elmira Academy of Medicine; Psychiatrical Society of New York; Society of Alumni of St. John's Hospital, Brooklyn (annual); Schenectady Academy of Medicine.

THURSDAY, *May 7th.*—New York Academy of Medicine (stated meeting); Brooklyn Surgical Society; Practitioners' Club, Buffalo; Geneva Medical Society; Glen Falls Medical and Surgical Society.

FRIDAY, *May 8th.*—New York Academy of Medicine (Section in Otology); Society of Ex-Interns of the German Hospital in Brooklyn (annual); Flatbush Medical Society, Brooklyn (annual); Eastern Medical Society of the City of New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending April 22, 1914:

Brooks, S. D., Senior Surgeon. Granted six days' leave of absence from April 18, 1914. **Carter,** H. R., Senior Surgeon. Detailed to represent the Service at a meeting of the section for the eradication of malaria of the drainage congress to be held at Savannah, Ga., April 23, 1914. **Cobb,** J. O., Surgeon. Detailed to attend the meeting of the American Nurses Association, to be held in St. Louis, Mo., April 23, 1914, and present a paper on the Potential Influence of the Nurse in the Health of the Nation. **Corput,** G. M., Surgeon. Detailed, at the request of the president of the State Board of Health of Louisiana, to attend the meetings of the Louisiana State Health Officers, the Louisiana State Medical Association, and the conference for the betterment of health among negroes, to be held in New Orleans, April 20 to 25, 1914. **De Valin,** Hugh, Passed Assistant Surgeon. Directed to proceed to Laytonville, Md., May 8, 1914, and to Silver Springs, Md., May 15, 1914, for the purpose of delivering lectures on rural sanitation. **Galloway,** T. C., Assistant Surgeon. Directed to report to commanding officer of the Revenue Cutter *Unalga* at San Francisco, Cal., for duty on summer cruise in Alaskan waters. **Gardner,** C. H., Surgeon. Granted two days' leave of absence from April 17, 1914, under paragraph 193, Service Regulations. **Glover,** M. W., Surgeon. Granted sixteen days' leave of absence on account of sickness, from March 23, 1914. **Guiteras,** G. M., Surgeon. Directed to proceed to Havana, Cuba, for a period not to exceed one week to study the plague situation and measures in force for its eradication. **Lavinder,** C. H., Surgeon. Relieved from duty in charge of the Marine Hospital at Savannah, Ga., and directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty. **Nydegger,** J. A., Surgeon. Directed to proceed to the Immigration Station, Ellis Island, N. Y., when most convenient, and remain for a few days, for the purpose of witnessing the various tests there used for the determination of mental development. **Perry,** J. C., Surgeon. Granted

forty days' leave of absence, with pay, from April 14, 1914, and twelve months' leave of absence, without pay, from May 30, 1914, with permission to go beyond the seas. **Pierce,** C. C., Surgeon. Directed to proceed to Gaithersburg, Md., April 17, 1914, and to Brookville, Md., May 12, 1914, for the purpose of delivering lectures on rural sanitation. **Porter,** J. Y., Quarantine Inspector. Directed to proceed to Havana, for conference with Cuban authorities relative to plague infection at that port. **Preble,** Paul, Passed Assistant Surgeon. Directed, upon receipt of instructions from the officer in charge of the investigation of the pollution of the Ohio River, to proceed to Cincinnati, Ohio, to familiarize himself with the organization, scope, and plane of the investigation. **Ramus,** Carl, Surgeon. Granted twelve days' leave of absence on account of sickness from April 10, 1914. **Rucker,** W. C., Assistant Surgeon General. Directed to proceed to Sandy Springs, Md., April 21, 1914, and to Rockville, Md., May 5, 1914, for the purpose of delivering lectures on rural sanitation. **Schereschewsky,** J. W., Surgeon. Directed, after having completed the necessary steps preliminary to the investigation into the sanitary condition of the garment workers' trade, and the physical status of the employees engaged therein in New York, N. Y., to return to Washington, D. C., for preliminary work in regard to methods for the determination of the presence of noxious gases in the air, and in connection with hygenic conditions of illumination. **Thometz,** H. M., Assistant Surgeon. Granted one day's leave of absence en route to Seattle, Washington. **Von Ezdorf,** R. H., Surgeon. Directed to extend the work of investigations and studies of malaria, so as to include the States of Kentucky, North Carolina, Oklahoma, Tennessee, and Texas. **Willetts,** David G., Technical Assistant. Directed to proceed via Washington, D. C., to Milledgeville, Ga., for duty in field investigations of the public health. **Williams,** L. L., Surgeon. Directed to instruct an officer under his charge to proceed to East Hampton, N. Y., not later than April 19, 1914, for special temporary duty.

Casualty.

Acting Assistant Surgeon B. F. Duke died at Pascagoula, Miss., April 7, 1914.

Boards Convened.

Boards of medical officers convened to meet Monday, April 27, 1914, at 10 o'clock a. m., for the physical examination and the presentation of questions for the mental examination of candidates for appointment as Assistant Surgeons in the Public Health Service, as follows:

Marine Hospital, Stapleton, N. Y. Detail for the board: Senior Surgeon G. W. Stoner, chairman; Assistant Surgeon C. P. Knight, recorder.

Marine Hospital, San Francisco, Cal. Detail for the board: Surgeon R. M. Woodward, chairman; Surgeon J. M. Holt, recorder.

Marine Hospital, Chicago, Ill. Detail for the board: Surgeon J. O. Cobb, chairman; Assistant Surgeon Joseph Bolten, recorder.

Marine Hospital, Chelsea, Mass. Detail for the board: Surgeon H. W. Wickes, chairman; Passed Assistant Surgeon G. L. Collins, recorder.

Marine Hospital, St. Louis, Mo. Detail for the board: Surgeon M. J. White, chairman; Acting Assistant Surgeon H. C. Wakefield, recorder.

Marine Hospital, New Orleans, La. Assistant Surgeon T. J. Liddell, chairman; Assistant Surgeon C. V. Akin, recorder.

Board convened for reexamination of alien Jacob Weguschin landed from steamship *Maine* to meet at Baltimore, Md., on call of chairman. Detail for the board: Senior Surgeon H. R. Carter, chairman; Surgeon J. A. Nydegger, member; Assistant Surgeon C. E. Waller, recorder.

Births, Marriages, and Deaths.

Born.

Stahl.—In Philadelphia, on Thursday, April 16th, to Dr. and Mrs. B. Franklin Stahl, a son and a daughter.

Married.

Bartol—Chandler.—In Boston, Mass., on Wednesday, April 15th, Dr. Edward F. W. Bartol, of Lancaster, and Miss Ethel Chandler. **Biffar—Lanigan.**—In Brooklyn, N. Y., on Thursday, April 23d, Dr. Harry Biffar, of College Point, and Miss Catherine Agnes Lanigan. **Evans—Whiting.**—In New Haven, Conn., on Friday, April 17th, Dr. Alexander William Evans and Miss Phoebe Whiting. **Fisher—Reid.**—In Virginia, Minn., on Wednesday, April 15th, Dr. James Montgomery Fisher and Miss Hazel Majorie Reid. **Johnson—Kingsley.**—In Towanda, Pa., on Thursday, April 16th, Dr. T. Benjamin Johnson and Miss Marian Kingsley. **MacGuire—Butler.**—In New York, on Wednesday, April 22d, Dr Daniel Philip MacGuire, of New Brighton, S. I., and Miss Beatrice Katherine Butler. **Magner—Curry.**—In New York, on Wednesday, April 15th, Dr. John Joseph Magner, of Hackensack, N. J., and Miss Mary Elizabeth Curry. **Marlatt—Bruen.**—In Jasper, N. Y., on Tuesday, April 14th, Dr. Harry R. Marlatt, of Honeoye Falls, N. Y., and Miss Myra Bruen. **Minnick—Kirtley.**—In Mooresville, Mo., on Saturday, April 18th, Dr. A. G. Minnick, of Lock Springs, Mo., and Miss Iva Kirtley. **Ryder—Borden.**—In Providence, R. I., on Tuesday, April 14th, Dr. Delano Richmond Ryder, and Miss Elsie Borden. **Shimer—Leiby.**—In Easton, Pa., on Thursday, April 16th, Dr. Sterling D. Shimer and Mrs. Bertha Leiby.

Died.

Beaugrand.—In Fremont, Ohio, on Sunday, April 12th, Dr. Peter Beaugrand, aged ninety-nine years. **Brockway.**—In Worcester, Mass., on Friday, April 17th, Dr. Charles H. Brockway, aged sixty-two years. **Dice.**—In Utica, Mo., on Sunday, April 5th, Dr. T. R. Dice, aged eighty-four years. **Fritsch.**—In Philadelphia, on Thursday, April 16th, Dr. Herman Fritsch. **George.**—In Indianapolis, Ind., on Friday, April 17th, Dr. Rebecca George. **Grier.**—In Philadelphia, on Saturday, April 18th, Dr. John Albert Grier, of Audubon, N. J. **Harris.**—In Richmond, Va., on Saturday, April 18th, Dr. William T. Harris, aged thirty-nine years. **Higgins.**—In Bridgeport, Conn., on Thursday, April 16th, Dr. Royal Lacey Higgins, aged seventy-two years. **James.**—In Orbisonia, Pa., on Tuesday, April 7th, Dr. G. W. C. James, aged eighty-four years. **Jones.**—In Little Cypress, Ky., on Saturday, April 11th, Dr. J. A. Jones, of Marshall County, aged seventy-six years. **Kauffmann.**—In St. Louis, Mo., on Tuesday, April 14th, Dr. Ferdinand O. Kauffmann, aged sixty-seven years. **Lauer.**—In Astoria, N. Y., on Monday, April 20th, Dr. Julius Cæsar Lauer, aged fifty-six years. **Madeira.**—In Reading, Pa., on Monday, April 20th, Dr. James D. Madeira, aged fifty-six years. **Margolies.**—In Brooklyn, N. Y., on Monday, April 20th, Dr. Adolph A. N. Margolies, aged sixty-six years. **Milbacher.**—In Long Beach, Fla., on Saturday, April 11th, Dr. Herman Milbacher, of Aurora, Ill., aged sixty-four years. **Porter.**—In Taunton, Mass., on Thursday, April 16th, Dr. Charles H. Porter, aged forty-three years. **Pratt.**—In Elgin, Ill., on Monday, April 13th, Dr. Howard Lewis Pratt, aged sixty-four years. **Putnam.**—In Boston, Mass., on Wednesday, April 22d, Dr. Charles P. Putnam, aged sixty-nine years. **Rex.**—In Los Angeles, Cal., on Tuesday, March 31, Dr. Thomas A. Rex, formerly of Pittsburgh, Pa. **Righter.**—In Lincoln, Neb., on Saturday, April 18th, Dr. Frederick B. Righter, aged seventy-nine years. **Roarke.**—In Troy, N. Y., on Sunday, April 19th, Dr. Francis Kelly Roarke, aged forty-five years. **Rohm.**—In Redding, Cal., on Friday, April 3d, Dr. Joshua Thornton Rohm, aged sixty-two years. **Sanderson.**—In Speegleville, Texas, on Wednesday, April 15th, Dr. J. N. Sanderson, aged fifty-five years. **Seip.**—In Bath, Pa., on Saturday, April 11th, Dr. William H. Seip, aged seventy-six years. **Sellhausen.**—In Washington, D. C., on Tuesday, April 14th, Dr. Ernest August Sellhausen. **Shepler.**—In Uniontown, Pa., on Sunday, April 12th, Dr. Joseph Taylor Shepler, aged sixty-seven years. **Spratt.**—In Minneapolis, Minn., on Sunday, April 12th, Dr. Charles J. Spratt, aged sixty-five years. **Todd.**—In Atlanta, Ga., on Friday, April 10th, Dr. J. Scott Todd, aged sixty-seven years. **Walker.**—In Springfield, Ohio, on Tuesday, April 7, Dr. William J. Walker, aged fifty-four years. **Weir.**—In Pasadena, Cal., on Wednesday, April 15th, Dr. Francis Alvin Weir, aged seventy-five years. **Wolf.**—In Yonkers, N. Y., on Saturday, April 18th, Dr. Morris Wolf, aged forty-two years.

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Original Communications.

THE RELATION OF APHASIA TO MENTAL DISEASE FROM THE MEDICOLEGAL POINT OF VIEW.*

BY CHARLES W. BURR, M. D.,
Philadelphia,
Professor of Mental Diseases, University of Pennsylvania.

The study of the mental condition of a person suffering from aphasia is not merely of academic interest, but is often a matter of very great practical importance, and it is as necessary for the general practitioner as for the neurologist to be able to decide mental capacity in such cases; indeed it is more important, because the former sees patients at the beginning of an illness and very often they are never seen by a specialist. Apart altogether from the purely medical and scientific aspect, that is, the study of the differentiation of the types one from another, the differences in the mode of onset, the discovery of the cause in any given case, the prognostic value of different associated symptoms, the prognostication as to duration, whether the disease is functional or organic, the localization of the lesion, the presence or absence of signs of some constitutional disease, and the proper therapy—apart from these matters, there is, and it is what gives the question great importance in everyday life, the medicolegal aspect. Not a little of the time of the civil courts is occupied in determining whether an aphasic person was competent to make a will and, though more rarely, whether a person still living was competent to marry or to make some other contract. I personally know of no instance in which uncomplicated aphasia has been plead as a defense in a criminal case, but it is probable that in some communities, assuming the aphasia to be admitted to be genuine, the accused would never come to trial, but would be sent to an hospital for the insane after a merely formal hearing. As a matter of fact, the aphasic might or might not be entirely responsible for his conduct, but public opinion and sympathy would probably compel his acquittal on the grounds of insanity. The general practitioner, much more frequently than the specialist, sees and knows the man at the time of the committal of a crime, the making of a will, the performance of marriage, or the entering into any other contract. He ought, therefore, to know how to determine a man's mental condition, not only that he may properly perform his purely medical function as a physician, but also that he may prevent his patient from doing unwise, silly, or vicious things or possibly even committing some criminal act, or, if need be, aid in the punishment of a criminal. Physicians could often prevent very unwise conduct on the part of patients if they paid more attention to mental symptoms and realized their significance, and if they more often assumed the responsibility which properly belongs to them, of deciding how much freedom of action a patient shall be permitted.

I shall consider the mental symptoms which occur in aphasia and discuss the question, what mental defects are the result of the speech disorder and what are mere accidental complications, or a common result from one cause. Mental disease, as used in the title, means not only insanity in the narrow technical sense of the word, but any disorder, transient or permanent, affecting either purely intellectual processes or the emotional life. I shall not discuss the hotly disputed question, the true local seat of the affection, and only briefly its essential nature. I assume that there is a true motor aphasia distinct from any sensory speech disturbance and essentially different from anarthria, though whether aphasia is the best name for it is by no means certain—a condition in which, without disorder of "internal speech," there being no doubt on the part of the patient as to what he wishes to say, what words he wishes to use, but there is inability or disability to speak on account of cerebral disease without palsy of any of the other movements of the muscular peripheral organs of speech. It is probable that motor aphasia may be either the result of a loss of the memories of the movements necessary to be made in order to produce the muscular contractions requisite for articulation, or a loss of the power of recollection. The loss may, if temporary, be due either to a functional, that is chemical, change in the centre or underlying white matter, or to a transient stasis of the blood; if permanent it results from a destructive lesion in the same region. Recollection, the bringing into consciousness of things stored in the cerebral cortex, is of course a mental process, an action, but its isolated loss in no way causes any mental defect which reduces power of thought or influences conduct. Memory is a physical thing and passive; it is the permanent effect of stimuli on brain, and indeed, on many other cells, and it should never be confounded with recollection. Thought uses memories, but memories are not thought till recollection brings them into consciousness. If motor aphasia is due to a loss of power of recollection, it is then a mental

*Read at the meeting of the Philadelphia Neurological Society, February 27, 1914.

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defect, but one which does not influence the general psychical life, but when due to loss of memory it is purely physical no matter whether the lesion is in the cells or in the fibres normally carrying impulses from or to them.

Before taking up sensory aphasia, let us study a little more closely the motor type, i. e., aphasia without disturbance of either the auditory or visual speech centres, and usually accompanied by agraphia. After the general shock of the acute attack (and in the great majority of cases the onset is sudden and the deprivation of speech for a time at least absolute) has passed off, the patient may be, and continue indefinitely to be at the same level of mental life as before the illness came on. Further, when mental symptoms do occur, I do not believe they are in any way dependent on the speech disorder. It is undoubtedly true that many patients with this type of aphasia also show more or less, and sometimes complete, dementia. This dementia, however, is caused by the general arterial disease present and is not the result of the local lesion. In the vast majority of apoplexies, and aphasia as a rule follows a stroke, there is general arterial cerebral disease. The cases of motor aphasia occurring in the young as a result of cardiac emboli, are rarely accompanied by mental symptoms, and in them we find, as we would expect, no general cerebral lesion. In brain tumor there may be general mental disturbance, either on account of increased intracerebral pressure or possibly because, but this is not proved, of an overgrowth of the neuroglia throughout the brain. It has been shown that this overgrowth may perceptibly increase the volume of the entire organ: hypothetically it may influence function. But even in brain tumor the mind may be sound. In several of the few instances of congenital motor aphasia, or to use more accurate language, in several children suffering from a congenital inability to learn spoken speech (aphasia assumes the previous existence of speech) whom I have seen, I have not been able to discover any signs of mental weakness of any kind, save those caused by lack of training. In those in whom there was imbecility, either the speechlessness was a mere symptom of the general feeble mental state and not a true aphasia, or the child had never, on account of his speech trouble, been given any proper education and training. Parents and teachers had assumed the child was an imbecile and made no attempt to teach him. Of course, the so called congenital motor aphasic, like the deaf mute, always finally, sometimes in youth, becomes an imbecile if not taught other modes of speech. I know of no reason why mere motor deprivation should cause any mental defect. The cortical motor speech centre has no more to do with thought, the emotional life, or the moral sense, than has the bulbar speech centre. In fact motor aphasia is so essentially a different thing from sensory aphasia that it is unfortunate that the same word should be used to include both. Motor and sensory aphasia differ qualitatively from each other, and calling both by the same name confuses the student. It is difficult enough for the student to get any clear conception of the mechanism of speech, and to call a disturbance of the emissive apparatus by the same name as a disorder of the receptive and creative apparatus is bound to bother him, because he will unconsciously assume that things given the same name must be the same.

When we come to sensory aphasia, mental symptoms assume a large importance. Every man suffering from complete verbal amnesia and its associated word deafness, always has some dementia, because thought is closely bound up with "internal speech" and in the great majority of men, if not in all, barring deaf mutes, "internal speech" is auditory. We largely or entirely think in memories of heard words, or at least their ghosts, even though we cannot by introspection catch ourselves using them. It would be unsafe to assert dogmatically that there are no men who are pure visuals, no men whose thinking, not their speaking, depends entirely upon the visual speech recollections, but personally I cannot recall having ever seen such a one; nor can I believe that any men are pure motors in speech—recall words solely by the recollection of the movements necessary for articulation. Sight plays no part in childhood, save in deaf mutes, in learning spoken speech, but only hearing and the motor centre. It may be that every one in thinking makes a little use of verbal motor recollections and much less of visual recollections, but the recollections of heard words are overwhelmingly important. Clinically motor, auditory, and visual speech disturbances are, in the height of illness, often combined no matter what the final residual state may be, and cases in which a mixed aphasia is present may be useless for the study of the relative importance of each factor in speech production. The valuable cases are those which, from the start or residually, affect only one element of the cerebral apparatus. Certainly in practical life the man who is word deaf, is always to some degree demented. It is not easy to read the mind of a complete sensory aphasic because he cannot communicate nor be communicated with. In him even pantomime is lost. We therefore can only judge by his conduct and behavior and, using these as guides, there certainly is always more or less dementia. Further, dementia is the only mental symptom dependent upon and caused by the aphasia. If hallucinations or delusions occur, they are not the direct result of the aphasia, nor the effect of it upon the general mentality, but purely accidental complications arising independently of the speech disorder. I am using the word, dementia, in a very restricted sense, to mean only intellectual weakness, the inability to carry on a systematic train of thought, and to reach a proper conclusion based on reasoning, along with loss of power to fix attention and consequent memory loss, and usually some moral degradation. The emotional state in sensory aphasia until, or unless the dementia is complete, at which time there is absolute emotional apathy, is very variable. Certainly there is largely lost ability of emotional control. The aphasic is prone to be emotionally ruled by the feelings of the moment. Sometimes surely, anger is due to his more or less dim realization that he can neither think clearly nor make himself understood. The emotional instability is part of the dementia. The fact that in cases of recovery or partial recovery from amnesic aphasia there is a return of men-

tal power, indicates that the mental defect is produced by the aphasia. Patients with only a partial aphasia may be entirely normal mentally.

It is curious that at this late day there should be differences of opinion as to the clinical facts of aphasia. One would suppose that by now, in a subject so long and arduously studied, every one would agree as to what clinically occurs, no matter how much difference of opinion there might be as to the interpretation. It is well known, however, that in every discussion the speakers disagree, not fundamentally but superficially, as to the symptoms the disorder presents, especially as to what combinations of symptoms occur. One is inclined to believe that sometimes speakers are so anxious to prove a theory that they unconsciously see what they look for, instead of seeing what exists. Another difficulty is that often the same word means different things to different speakers or different things to the same speaker at different times. There is no subject of study in which exactness of meaning of words is of more importance than in this very thing—aphasia.

Isolated word blindness does not cause any mental symptom. When associated with word deafness it may hasten the course of dementia. When it is a part of a larger sensory apraxia there is also, of course, great mental defect, but, in and by itself, it does not affect general power of thought.

In real life aphasia is more often mixed than single. Anatomically it is rarely purely cortical, less rarely purely subcortical; usually both gray and white matter are affected. Because of the many factors involved in speech and the many clinical combinations possible, the picture of aphasia is bound to be complex, and we need not a few pigeonholes for classification, but many. No good comes from trying by force to simplify a complex thing. It is better to realize how many different clinical combinations may occur.

I wish to say a word about the method of examination in order to discover the mental state of an aphasic. It is not enough to make a study of his speech, but his conduct and behavior must also be carefully inquired into. Now, of course, many aphasics, on account of the physical disability of a hemiplegia or from general weakness, are compelled to lead very restricted lives. It is incorrect to assume that their lives would be just as inert if they were physically able. It is not easy to get at the intellectual state of such an aphasic, but that is the problem. Much can be learned from careful observation of little things. Does he receive you naturally or with silly effusion? Is he easily vexed and peevish? What is his attitude toward the people around him? Does he recognize people? Does he show intellectual pleasure in what is going on around him or is he mentally inert? Does he show inquisitiveness or lack of attention to things going on? Is he, so far as his physical disabilities permit and so far as his previous habits make natural to him, neat and careful about his person or is he slovenly? Does he try to enter into the spirit of the examination and show by his behavior that he realizes something is being done to try to help him or is he mentally vacant? In severe cases the problem is solved as soon as the patient is seen—he is patently a mere dirty, senile dement; in cases less severe, long study may be needed.

Much more important, much more interesting than the complete dements, are the cases in which there is only a partial aphasia and the patient is able to be up and around and to take part, wisely or unwisely, in life. The questions then are, What type of aphasia is present and how much is the sufferer mentally and morally responsible and competent? In such cases the examination of his power of communicating and of receiving communications is of great importance. The method and order used in the examination is shown by the following questions: Can the patient speak spontaneously? If he be confined to the use of "yes" and "no," does he use them correctly or indiscriminately or, as often happens, does he, at the beginning of the examination, use them properly and in a few minutes get so confused that he uses them without any thought? If he has a vocabulary, large or small, does he misuse words, and if so, does he recognize his own mistakes? Is his spoken language confined to particular parts of speech, e. g., nouns or verbs? Can he repeat words spoken to him, and if so does he understand their meaning? Can he write, and if not, does it seem to be due to an amnesia for the movements of writing? Can he read aloud or to himself, and in the former case does he understand what he reads? In the latter case he of course understands. If he cannot understand letters, words, or sentences, can he comprehend the meaning of figures? Can he understand spoken language? Does he understand pantomime and does he himself use it? Can he give the name of objects by spoken or written speech or both, when shown him, or does he, even if he cannot name them, recognize them? Does he recognize and can he name, either or both, things which are put in the hand, the eyes being closed?

Having determined his condition as to speech—power of communicating and receiving thought—examine his memory, his capacity for abstract thought, and his conduct. What can he tell about his past history? What impression do things of today make on him? What is his moral attitude?

There is no examination more laborious and trying to both patient and physician than that of the aphasic. It must never be forgotten that it is not wise to try to do too much at once. It is better to examine the patient over a period of several days. Aphasics all tire easily, and the rapidity with which tire comes on is itself important in deciding the mental state. I present a few histories illustrating the mental state in aphasia. I have omitted cases of residual motor aphasia without sensory involvement and without mental symptoms, and cases of extreme dementia.

The first case is an instance of general cerebral sclerosis beginning with slight symptoms of dementia, in the course of which a slight transient hemiplegia suddenly developed with permanent word blindness and a varying verbal amnesia with a very slow, but not great increase of the dementia till just before the patient's death from a stroke of apoplexy. It shows that partial verbal amnesia and

total word blindness may occur without influencing for evil an already present dementia.

Case I. The patient was, when I first saw him, aged fifty-six years. He had been a very active and successful man of affairs who had carried large responsibilities for years and had enjoyed the burden that ambition brought to him. His illness began with a feeling of general ill being. He somewhat lost interest in his work. He could not, as he himself realized, think so rapidly nor so correctly as previously and he began to doubt his surety of judgment. Later he had occipital ache. All this came on about one year before I saw him. The physician who first treated him did not regard, as indeed few would, save those who do not believe that any mental symptom is trifling in a man over fifty years, his condition as serious and advised him simply to take a rest and travel. He did so but without improvement. He returned to his usual life and the men associated with him in several corporations noticed that his judgment was very bad and that he often showed at business meetings sudden causeless or almost causeless outbursts of temper. He also began to drink daily, but never in large amounts. When I examined him he showed no objective physical signs of disease except a heightened blood pressure and somewhat stiffened arteries. I did not like his history, his manner, his attitude toward life, his change in nature, and warned his family that the future was dark. He would not at first give up any of the positions he held, but in a few months he lost all ambition, retired from business, and simply wanted to live an easy quiet life. His pushfulness was gone entirely and he was very glad to retire, very easy to manage. He showed no gross moral change, but was rather silly and sentimental in his attitude toward several young women and had some thought of what would have been an unwise adventure in matrimony. Two years later, during the most of which time he felt comfortable and happy but lived on a mental plane far below his normal, he suddenly discovered that he could not read. He saw the letters and the words, but they conveyed no ideas to him. The next day he noticed he was blind on the right side. Examination by an ophthalmologist verified the fact that he was word and letter blind and had a right sided hemianopsia. A few days later he developed partial verbal amnesia which was not severe enough to prevent his carrying on conversation. He would simply now and again be unable to recall a word. At the same time he lost his realization of his word blindness and hemianopsia. His mental condition was not affected by the verbal and visual trouble, but several months after the acute attack he demented rather rapidly and finally had a stroke in which he died.

The question arose in his case whether he was competent to make a will, the allegation being that a man who had lost all ambition, had outbursts of anger, and could not read, misused some words and could not recall others, was incompetent. The matter was settled amicably out of court. Surely the mild dementia from which he suffered preceded his speech disorder and was not made worse by it. At the time the will was made he knew his relatives, knew what property he had and what his money was invested in, and was able to dictate to his lawyer what disposition he wished made of his estate. He was entirely free from delusions and was not under the dominating influence of any one. Though therefore he had some dementia, he was competent.

Case II was an example of dementia associated with mixed aphasia. It was of interest because there was a contest as to testamentary capacity. The patient graduated from college in his twentieth year. He then became a dyspeptic invalid and traveled around the world for five years in search of health. He later studied law and was admitted to the bar in his native town, but practised only a few years, when he again became neurasthenic and traveled for many years, sometimes staying in one place for a year or two, but not returning to his home town till he was sixty-five years old. He had inherited early in life a large fortune, which he took good care of and increased by making wise investments. Though he saw but little of his brothers and sisters, he always kept in touch with them by correspondence. His habits were, so far as known, good. By his sixty-third year he was distinctly an invalid, a man physically old without having any definite disease. When sixty-four years old he had a stroke affecting the right arm and leg and a few days later causing complete motor aphasia. He improved so that he could walk, but never regained the use of his arm. Speech did not return except that he could say "yes" and "no," but understanding of speech very largely returned only to be largely lost later.

I saw him several times during his sixty-sixth year. He then could walk well, but dragged the right leg a little. His right arm was useless. He spoke no words save "yes" and "no," which he used correctly, except that after talking a few minutes, say three, he became confused and then used them indiscriminately. If allowed to rest for a little while he would again use them correctly. He could read an isolated sentence to himself and understand it. Thus, given a paper on which was written a short command, he would obey the command, but given a paper containing a complicated command to do several things in succession, he would look at it and then do only the first thing. No matter how often he was shown the paper he would never do more. He understood simple things said to him briefly, but to talk to him for any length of time confused him and he would cease to pay attention. He understood and used simple gestures. He could write nothing but a few small figures and his signature with the left hand. He treated his brothers and sisters naturally. For more than a year he never showed any interest in his business affairs and permitted one of his brothers to take full charge of them and submitted to the orders of different nurses with the obedience of a good natured child. I tried in every way to get from him his ideas about how much he was worth and what he wanted to do with his money, but failed entirely. I may say in parenthesis my relations with him were of such a character that he would have felt no impropriety in my talking to him about personal matters. He died before his sixty-seventh birthday of pneumonia. After his death a will was presented for probate which gave away $15,000 more than he owned. He left nothing to a brother with whom he had always been friendly, with whom he had never quarreled, and to whom in a former will he had given a large sum of money. He gave to a nurse who had been on duty about six months, but who was not in his employment at the time of his death, some months after the making of the will, $5,000. The nurse to whom the legacy was left said, on the witness stand, that the patient had expressed a desire to make a will and had asked him (the nurse) to get a lawyer. (The patient had had his own lawyer for many years who had drawn up a will for him before. He was living in the city in which the patient was.) The nurse got a lawyer of his acquaintance. The lawyer came and depending upon "yes" and "no" on the patient's part drew up the will, departed, came back the next day, read it to him, asked him if it were correct and received the answer "yes." The patient then signed it.

In my opinion the man was incompetent. His mental condition was such that he could not understand such a complicated document as a long will leaving many different sums to different people. His memory was so poor that he could well forget his own brother. He was as liable to misuse "yes" and "no" as to use them correctly. He could not communicate with the lawyer with any words save "yes" and "no," nor could he write his wishes. He was as biddable as a child, and any nurse could have done anything with him. The whole question depended upon whether the lawyer could tell whether he was using "yes" and "no" indiscriminately or correctly to express what was in his mind, whether he really comprehended what he was doing in making a will, and whether he understood the lawyer's questions. The upholder of the will finally withdrew from the contest.

Case III was an instance of aphasia following acute delirium and largely recovered from, and in which there remained permanent but not extreme dementia. The aphasia and dementia resulted from a common cause. The

patient's family history was bad, his mother having had several attacks of catalepsy and having suffered from hysteria for years, and an only brother was a somnambulist. As a child his life was uneventful psychologically, but as a youth and in early manhood he had studied art, law, and pharmacy, and finally ended as a proprietor of a general store in a country town, a rather impotent conclusion to dreams of a career, but important as showing inherent weakness and ignorance of the relative importance of things.

He married when twenty-four years old. Soon after and without known cause (his marital relations were good), he suddenly became depressed and threatened suicide. At the same time there was intense sexual excitement and he desired intercourse many times daily. He ceased to pay any attention to his business and became very egotistical, very vain and quarrelsome. After this condition had lasted three months, he suddenly became extremely violent, and threatened to kill his father-in-law with whom he had always been on good terms. He became delirious and stabbed himself in the side, causing a quite serious wound. The delirium continued several days, and when it ceased he was unable to speak, read, or write. Ten days later, speech had returned enough for him to be understood, though he frequently misused words. He also misused objects, e. g., he would try to cut his food with a fork. As soon as the delirium passed off he understood spoken language.

When I saw him, six months later, he said that the period of delirium was a blank to him. His spontaneous speech was good. (He said, but his accuracy of recollection could not be relied on, that when speech was returning to him his difficulty was in recalling words.) He spelt out print like a child learning and made many errors. He could not read words or sentences. His writing was like his reading; he could write a few letters at dictation, but not a word. He understood spoken speech perfectly. There were a few common objects he did not recognize by sight. Mentally he was childish and rather silly, but his temper was good.

I must confess I have never made an exact causal diagnosis of his case, though I have thought a good bit about it over some years. The acute attack was certainly the result of an infection of some kind. Syphilis could not be proved. Whatever happened in his brain (I presume he had an infectious cerebritis), the aphasia was a mere incident and in no way responsible for his dementia.

Case IV was an example of aphasia occurring, as an accidental complication, in a man suffering from chronic delusional insanity. The patient had endocarditis in childhood, following scarlet fever. In early manhood he began to have delusions of persecution concerning his father, brother, and wife. Two years before I saw him he had a left sided hemiplegia from an embolus, from which he recovered entirely. When about thirty-five years old, he was one day found unconscious in his room, and when consciousness returned he had a slight right facial palsy and jargon aphasia. When I saw him, some days later, he had largely recovered spontaneous speech, but occasionally unconsciously misused words. He was somewhat word deaf. Short sentences he frequently understood, but could not grasp the meaning of a long statement. He frequently would half understand what was said. He had some agraphia. He was very bitter against his family and had systematized delusions of persecution concerning them. In two weeks after my first visit, his word deafness had passed off almost entirely, he could write quite well, and understood spoken speech without difficulty, but his delusional state remained the same.

Now, several months after his attack of unconsciousness, he is somewhat demented and his delusions continue present. His speech disorder was undoubtedly due to embolism, while his mental disturbance is a true developmental paranoia to which has been added diffuse arterial cerebral disease.

Case V illustrated how in certain types of aphasia words could be recalled by schemes on the patient's part and how much inventiveness the patient might use. B. R., white, painter, aged twenty-one years, single, was admitted to the Philadelphia General Hospital in September, 1900, on account of trouble in speaking. His family history was unimportant. His personal history was interesting in that he had been a painter for eight years, had had several attacks of what appeared to have been acute lead poisoning and had used alcohol to excess. Syphilis was denied and could not be proved. Four years before admission he was overcome by the heat while painting and was ill two weeks.

The onset of his present trouble seemed to have occurred in the following way. He was drunk on the night of June 22, 1900, and on the following morning awoke with a severe headache, for which he took a dose of salts, which was followed by nausea and extreme vertigo. Next day he started to drink heavily and continued doing so till July 4th. On awakening on July 5th he found he could not speak, and on trying to get out of bed, fell to the floor. He was put back to bed, became unconscious, and remained so for about an hour. When consciousness returned he was still speechless, except for the indiscriminate use of "yes" and "no." A short time before he came to the hospital he had two convulsive attacks as follows. The right side of the face twitched violently, beginning around the orbit and extending to the mouth, and at the same time he cried out violently, not, however, uttering words. His mother says he did not become unconscious. The spasms lasted several minutes and left him depressed and with headache for many hours.

On admission he could not tell his own name, but on hearing it spoken said "yes" and repeated it, only however, to forget it again immediately. He sometimes succeeded in writing his name, sometimes failed. He could repeat any single word spoken to him, but not a sentence. He could read neither words nor letters. He understood all that was said to him and gave proper answers to questions, but always by disconnected words and often used words not of exactly the meaning needed, e. g., he might say "steel" when he meant "iron." If given a start he could count up to ten.

During the night of October 8th, he had a convulsion beginning in the right foot and extending to the arm and face. It lasted about ten minutes. He did not become unconscious. For some hours after the fit he was somewhat weaker, but not distinctly paralyzed in the right arm and leg. On the 12th of October and again on the 14th, he had a spasm confined to the right side of the face. During the months of November and December, he had fourteen spasms, some confined to the face, some involving the entire right side, but none affecting consciousness.

He improved slowly in speech and by April, 1901, he could recite the days of the week in order, but could not name any day unless he began with Sunday. He sometimes used other associations, e. g., one Friday I asked him what day it was and he said, "fish," "fishes," "fish day," "Friday." He was a faithful son of the church and always ate fish on Friday. He could, if he began at one, count up to thirty. He named a half dollar shown him, but a five cent piece he could not name until he had counted from one to five.

My first examination of him was made on the 29th of April. When I asked him to tell me how his illness came on, he said—"New York—painter, whiskey, salts, sickness—couch—floor—headache—wheels—better" accompanying his words with illuminating pantomime. It was easy to understand that what he meant was—he had been a painter in New York and drunk too much whiskey, became sick, took salts, fell to the floor, had headache, was crazy, was put on a couch, and that at the time of speaking he was better. The recital is a fair example of his power of spontaneous speech. His voluntary speech was composed principally of nouns, in somewhat less degree verbs, a few adjectives, and no prepositions, pronouns, or articles. Fragmentary, however, as his vocabulary was, there was no difficulty in understanding what he meant. He understood perfectly and obeyed all commands.

Ocular examination revealed no lesion of the fundus, no contraction of the fields, and no dimness of vision. He recognized all and named almost all objects shown to him, i. e., there was no object mind blindness, but partial optic aphasia. A quarter and a dime he called money only, and could not give their specific names, though he recognized their differences in value. He recognized their names when mentioned to him. He could copy print, but could not understand what he copied. He could not recognize or name single letters, except by the following method.

Given an alphabet and told to tell what a certain letter in a book was, he would look at the letter, begin to recite the alphabet, looking at it, and when he came to the proper letter, stop and point to it in the book. He could read aloud and understand short words by using the same process, but with longer words he forgot the beginning before he came to the end. Figures he could read aloud only by counting from one.

He could write the alphabet in large print if he began at the beginning, but the only isolated letters he could write at dictation were B, O, and X. He could at dictation write the numerals and numbers of two figures, but not of three. He could write his own name. Notwithstanding his inability to write isolated letters, there were a few words he could write, e. g., when shown a key without its being named, he wrote key. The same thing was true of book, shoe, bed, but of no other words so far as could be discovered.

He recognized and named objects put in his hand, i. e., there was neither tactile aphasia nor tactile asymboly. He could not describe actions done before him, except that once when the doctor made a fist and struck out with it he said "punch," and said "whittle" when the doctor whittled. He understood things done, but could not recall the words to describe them.

On July 15th, he was reexamined. Asked to spell ink, he started out "i" and then stopped; horse, "ho"; floor, "for." Door he spelled correctly. Asked what c o w spelled, he said "wall"; pig, "don't know." C h a i r, "chair"; s h o e, "don't know." When any of these words were spoken to him he understood and could repeat them.

"Lit Brothers" he read "Lits and Company." "Strikers" in large print he could spell aloud with the aid of the alphabet, but could not pronounce the word and did not understand its meaning. "Steel" he read aloud "iron." "Dress skirts" he understood the meaning of, but could not read aloud. "Jury" he could not read aloud, and when asked what it meant, said "punching" and further questioning showed that he knew it had something to do with being in jail, but he seemed to have no clearer idea. One time he wanted to tell me that he had been to Atlantic City. He could not say so, but pulled a letter from his pocket and pointed to the postmark "Atlantic City." He could not read the postmark, but knew it as a picture, as a hieroglyph, and when I read it aloud said "yes, Atlantic City." One day when shown a rainbow and asked what it was, he said, "Round, red, green, blue." When told the name he recognized it, but a few minutes later called it a "round bow."

I examined him again, November 12, 1902. He recognized and could name letters and could read aloud and understood a few words, but made many mistakes. For example, "sat" he read "Saturday"; "Will," "Bill"; "hours," "house"; "who," "how." Words he could not read aloud, he did not understand. The following words repeated aloud to him, he could utter and understood—rat, box, house, mouse, books, pencil. The following words spelled aloud he could not utter nor understand—cow, boy, line, cigar, press, chair, gas. As a rule he either instantly understood or had no knowledge of spelled words, but sometimes, though rarely, he made the worst possible mistakes, for example, "glass" he said spelled "girls" and "bag," "pig." The following words he spelled properly when they were pronounced to him—bag, man, girl, shoes, cow, eye, book, cigar. The following he could not spell—"step" (he began "st" and then stopped), neck, tongue, cap, and knife. He recognized and named at sight all simple objects, but unfamiliar things he could not name, though he knew what they were. For example, shown a thermometer, he said, "hot," "cold" and showed by gestures its use. He could not describe actions he saw, except in fragmentary fashion. For example, when I raised my arm up in the air, he said "arm up." When I crossed my leg and swung it he said "kick." He could tell the time.

To sum up, then, his speech symptoms: He suddenly lost speech after an attack of some indefinite kind. Later, when he came to the hospital, he heard understandingly all that was said to him (he was therefore not word deaf). He could repeat any word said to him. His conversation was made up of single words. He could neither read aloud nor comprehend letters or words (he had therefore alexia). He could write nothing except his name and that not always (agraphia). He certainly was not demented or insane in any sense and was competent to perform a contract and responsible for his acts. Soon after my last examination he went out into the world and worked steadily.

To sum up: Motor aphasia, in and by itself, does not affect mentality. When dementia is present, it is due to widespread cerebral arterial disease. In aphasia due to destruction of the auditory speech centre, there is always dementia. When the amnesic aphasia is only partial, dementia may or may not be present, depending upon the amount of speech disorder. Isolated word blindness may occur without mental defect. Aphasia of any kind may be a mere incident in the course of paresis or senile dementia. If it is sensory the dementia is thereby increased. The true essential insanities, paranoia, manic depressive insanity, and dementia præcox, are of course never caused by aphasia.

1918 Spruce Street.

SENSORIMOTOR APHASIA.*

By James Hendrie Lloyd, M. D.,
Philadelphia,
Neurologist, Philadelphia Hospital.

The study of aphasia has gone through two distinct phases. First came the phase of what may be called academic evolution. Following the recognition of Broca's convolution as the centre for motor aphasia, there was gradually evolved the cult of the extreme localizationists. This academic or diagramatic school elaborated the subject in a highly theoretical way, postulating one centre after another, until in some of their writings they described as many as twenty-eight varieties of aphasia, each of which was alleged to have its distinct and limited area in the brain cortex. In due time, however, it became evident that much of this psychology was theoretical, and that it could not be verified at the bedside.

Personally, I long ago ceased to pay any serious attention to it. I learned from ample clinical experience that I could not harmonize the very pretty diagrams of this school with the facts of disease, and I thought I could see fairly well some of the reasons for this failure. These reasons, as I take it, are of two kinds, physiological and pathological. The physiological reasons are that speech is so complex that it is not possible, except in a very broad and general way, to separate its various parts and elements. The machinery is too complicated for our gross methods and ideas. The pathological reasons are that the lesions made by disease are even more gross, and cannot be depended on, as a rule, to give precise results. Great tearing and ripping lesions, such as are caused by hemorrhage or softening, have not the delicate touch necessary to point out with exactness the various seats of such a marvelous function as human speech. It is like experimenting on a man's brain with a crowbar.

I believe that in the study of aphasia, the simpler the methods the better; and that we cannot do better than to follow the lead which Nature herself has given us. Nature teaches us constantly that there are *four* main elements of language. Two of these are motor; speech and writing. Two of them

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are sensory; hearing and seeing. If we will only take the trouble to avail ourselves of the finest experiment in the world, we will go to the lisping child at its mother's knee. The first part of its language zone which the young child uses, is its auditory apparatus; it is there that it acquires language. This retains all through its life its best hold on language, for it is a matter of common observation that the mother tongue (the one learned by ear) is the most tenaciously held. A language acquired by eye soon slips away, as every classical student knows of his Latin and Greek. In fact, Professor Blakie, an eminent Greek scholar, was so annoyed at his Greek slipping away from him, that he used to shut himself up in his room and declaim Greek by the hour in order to acquire an auditory control of it. His method was truly scientific.

The next thing that the young child does is to try to talk. It repeats words which it hears. This, it would seem, requires an entirely different mechanism, not only of brain cells, but also a motor or muscular apparatus situated in the mouth, throat, larynx, and chest. This is a very complicated motor apparatus, and must have an extensive representation in the brain cortex. But in studying this subject of aphasia, it should never be forgotten that this whole motor mechanism of speech was originally, in the young child, dependent for its training on the auditory centres. Without their stimulus and guidance it could never have been trained; as witness the deaf mute.

These two great functions, auditory speech and spoken speech, are the main elements of human speech, without which language were impossible. They have been evolved through countless generations, and their cortical and subcortical relations must be very intimate. The other two elements, reading and writing, are entirely secondary accomplishments (epiphenomena) and may practically be ignored, for in the uneducated person they are never used. Man existed for long ages with only spoken language before he invented reading and writing. Therefore, I believe, that if we are to come anywhere near the truth in this whole obscure matter of aphasia, we must stick close to the auditory and the motor centres.

It is true that in naming objects a child learns to use its visual as well as its auditory centres. It sees an object, and learns to name it; but this is secondary, because the child has first had to learn the name by ear and then to learn to utter the word. Although important, sight cannot be said to be an integral part of speech. The child must first have trained its auditorimotor apparatus before it could use that apparatus by excitation of its visual centres. The same is true of other sensory excitants of speech, such as smell and touch. They are not in themselves parts of the primary speech apparatus.

In consideration of these things it has seemed to me that most cases of aphasia are not purely motor or purely sensory, but that they are sensorimotor; that is to say, aphasia should be analyzed in both its sensory (auditory) and motor (speech) elements. It will be found, I believe, especially in early cases, that there are defects in both of these territories.

This can be tested in a very simple way. A so called motor aphasic will often obey simple commands—such as "put out your tongue"—but if a more complicated command is given to him, he utterly fails to understand it. The same is true in many cases if he is spoken to behind his back, when he is not expecting it, and even called by name; he will then often fail to obey commands.

I have thus for some years in my clinical work been led to the conclusion that I have to deal with what I prefer to call "sensorimotor aphasia." In many cases I have found it practically impossible to separate these two kinds of phenomena—the motor from the sensory—except in a sort of artificial way. The affection, to use a metaphor, rests upon two limbs, but in individual cases one limb may be foremost. The motor defect is usually the more conspicuous, and has given its name to the thing; the sensory defect is present, but cryptic; it needs careful tests to bring it out, and it is therefore often overlooked.

The auditory disorder in so called motor aphasia is always present in early cases, and it may persist in curious ways in old cases. One evidence of it is *loss of attention.* In order to gain a response from the patient it is necessary to be at some pains to gain and hold his attention. This can be done, as a rule, only for a brief period, and only for simple commands. Even then, some appeal has to be made to the eye, by gesture or pantomime. The moment the questioner turns away from the patient the latter is no longer *en rapport* with him; if he turns his back on him, or speaks to him from behind, he will often have difficulty to gain his attention; it is like speaking to a deaf person.

Another proof, as already said, is that the patient will not, as a rule, obey (that is, comprehend) a somewhat complicated command. For instance, if he is bidden to reach out his hand and take from the questioner a piece of paper (the questioner making no gesture) and tear it into four pieces, throw them on the floor, and then pick them up, and hand them back to the questioner—if asked in one sentence to do all this, he will usually fail conspicuously. Patients will vary under these and similar tests, but with care their auditory defects can be brought out. Finally, these patients have little if any ability to take in an abstract or general idea; although it is rather difficult to test this defect. It may depend not exclusively upon auditory defect, but partly on disorder of intelligence. To distinguish the one from the other is a hair splitting feat.

If a general conversation is held in an aphasic's presence, and by his nearest friends, even on subjects that would naturally interest him, he seldom shows that he follows it and is interested. He sits in the midst of the group like a foreigner.

The distinction between a cortical and subcortical aphasia is artificial and vain. What is meant is simply that in some cases of aphasia the auditory or sensory defect is more conspicuous than in others. This is shown by the fact that the same tests are applicable in most of the cases. In some cases the patient has a better understanding of spoken language than in others; he has retained a better hold on his *auditory* memories of words. In other cases he has a better control of the *motor* apparatus; between these two extremes there are

endless variations; for no two cases of aphasia are just alike.

If we are to accept the ideas of Déjerine and others about cortical and subcortical aphasia, we have to overlook some very important recent developments in the science of the neurone. We must believe, for instance, that extensive subcortical lesions may occur, with all the accessories of shock, disturbed circulation, etc., and that extensive damage may thus be done to nerve fibres, and yet the cells themselves in the brain cortex remain intact and continue to function. This is contrary to what we now know about retrograde degeneration. It is quite inconceivable that extensive lesions should thus occur subcortically and just by a narrow margin allow the cortex to escape. The conception is academic, and meant to support a theory. We know that a comparatively small lesion in the brain or cord will cause far more widespread interference with function than appears on the face of it. This fact should lead to a more conservative interpretation of these ragged lesions; such lesions are often not fit experiments. I have recently seen a complete motor aphasia, in a colored man, from a lesion which seemed post mortem to be confined to the lenticular nucleus and internal capsule, but I have no doubt that the apoplectic shock and the disturbed circulation threw out of gear much of the cortical and subcortical language zone.

A word about the dependence of intelligence upon language. This is probably far more intimate than medical writers, as a rule, have recognized. In fact, there seems to be a tendency among medical writers to ignore or even to deny this dependence. The tendency of medical thought is mechanical; the theory is that we carry our various mental faculties in separate compartments. But the truth probably is that our mental processes are so bound up with our use of language that the one cannot suffer without the other. Particularly is this so of abstract or involved thinking. We do our thinking in words, as any man can perceive if he but scrutinizes his own mental processes. It follows that in aphasia there must be some disorder or weakening of the intelligence; and of this fact I am convinced from my own observations. To recognize this fact tends to define the problem of aphasia, even if it does not help to solve it.

There are some things dragged into this discussion which do not properly belong to it; for instance, apraxia. The inability of a patient to understand the use of objects is not really a part of his speech defect. It may be very interesting, but it is a side phenomenon. It is no more a part of speech defect than is astereognosis. For instance, I saw a clergyman recently who had a partial sensorimotor aphasia. When he was asked to put on his eyeglasses, he attempted to put them on without taking them out of their case; he lifted case and glasses both to his eyes, and seemed puzzled that he could not adjust them. This was a sort of apraxia, but it was not a speech defect. I believe it is held by some observers that the motor defect in aphasia is a true apraxia; that is, the patient has lost the knowledge of how to use his muscles of speech to form words. This is rather a fine drawn theory, which may or may not be true. But even if true, it does not materially elucidate the problems involved.

Finally a word about dysarthria or anarthria. It was, I think, the idea of Marie that ordinary aphasia was only Wernicke's sensory aphasia, plus anarthria. But this use of the term anarthria or dysarthria appears to me unfortunate and confusing. Anarthria is due to a paralysis of the muscles of speech (in its old fashioned meaning) and aphasia is something different from this. In true aphasia the muscles of speech are not paralyzed. The motor defect is on a higher plane; it is cortical or mental. Call it apraxia or call it what we please; it is an inability of the patient to make words in his mind, not to utter them. The distinction is a fine one, but it is valid, even vital.

I have thus attempted (very inadequately) to align myself with those who have taken part in the development of the second phase of the subject; those who reject useless and impossible refinements, and aim at a broader generalization. I am not prepared, however, to give up Broca's convolution, for this in my belief is really the motor centre of speech. But this motor centre only represents one part of the speech zone; and without a study of the great primary auditory or sensory zone, by which we have all learned our mother tongue, I believe we are likely to make grave mistakes in studying this obscure subject. If finally I am asked what I really believe aphasia to be, I simply say that I believe aphasia is aphasia. There are hardly two cases of it alike.

The attempt to localize language in the brain cortex any more accurately than we are now able to do, is, I fear, destined to be forever futile. It looks to me as though we were simply thrashing over the old straw in trying to make an anatomical dissection of a complicated psychological process. Language, in its very nature, has a sensory as well as a motor element; and to attempt to separate these two is something like an attempt to separate force from matter, or form from substance. The idea is metaphysical, not practical. There are two sides to the shield; and it depends upon which side the observer is looking at, whether he calls it the one thing or the other.

116 South Twenty-first Street.

SOME OBSERVATIONS ON THE CHILD OF TODAY.*

By Thomas S. Southworth, M. D.,
New York.

Never before in the history of the world has there been such an awakening of the public conscience with reference to the child as that which may now be observed on every hand. The value placed upon the individual has enhanced rapidly during the last half century. Many factors have contributed to the increased attention paid alike by the parent, the humanitarian, and the State to the preservation and expansion of child life. On the one hand has been operative the steadily decreasing

*Presidential address before the Medical Association of the Greater City of New York, February 16, 1914.

birth rate which threatens the military supremacy if not, indeed, the ultimate integrity, of certain European States. On the other hand, the various sociologic, philanthropic, and economic influences of our present day civilization have, each from its own standpoint, raised an outcry against the wanton waste of infant life, and have been logically united in a widespread campaign against infant mortality and morbidity from preventable causes.

It is far from generally known how numerous and how potent are the agencies which direct the whole or a part of their activities to the many sided problem of child welfare. It may be stated on the authority of the New York Child Welfare Committee that there are approximately 924 agencies in New York city whose activities are correlated through that office. With the exception of those supported by the city departments of health, schools, and public parks, the vast majority of these have their foundation in private philanthropy. A consideration of this mighty array of forces working for the preservation and uplifting of the child is not only a revelation to many of those who enter into this question seriously, but might well give pause to those uninformed agitators who, asserting that the rich are growing richer and the poor poorer, maintain that the possessors of wealth squander it selfishly upon their personal pleasures and extravagances. This movement for the child is most significant when we consider that it is only in its beginning, and that it is everywhere gathering forces for an onward sweep, the beneficent results of which it is impossible to predict.

Beside the invaluable services rendered as advisors in other branches of the work, our profession has been eminently progressive in the more circumscribed field of medical endeavor. Scientific investigation, having turned the virgin soil and garnered bountiful crops in the field of general medicine, has turned to the less explored regions of the specialties, and pediatrics has yielded its increase. Allowing for the differences in the incidence of disease in infancy, youth, and adult life, every advance in general medicine is carefully scrutinized, tested, and adapted for the benefit of the child.

The problem which most immediately engaged the attention of the pediatrist was that of nutrition after the birth of the child—setting aside at the outset the important questions of prenatal influences and of intrauterine life which fall, respectively, in the domains of the sociologist and the obstetrician. Confronted with the urgent necessity for improving the technic of artificial feeding for an apparently increasing number of infants, who were, for more or less valid reasons, deprived of the maternal breast, it is not perhaps surprising that the crucial importance of physiological breast feeding seems for a time to have been submerged.

Under careful scrutiny and a vast amount of laboratory and clinical investigation, the old haphazard empiricism of artificial feeding of infants has given way to the acceptance of certain fundamental principles which are brought into play as the necessities of each individual infant dictate. In short, there are no longer hard and fast methods which are accepted and taught by different schools as the only suitable ways of feeding the vast majority of infants, but their place has been taken by a series of useful measures, each with its scientific basis, which may be employed upon the appearance of definite indications and in accordance with the experience and judgment of the physician.

Owing to the inevitable realization that the inherent biological differences between the milks of different species make these artificial measures at times ineffectual, there has happily arisen coincidently all over the civilized world a fuller appreciation of the importance of a mother's nursing her child. As might have been expected, the first outcome of this movement has been the demonstration of the fact that a far larger proportion of mothers were able to nurse their babies wholly or in part than had been previously considered possible. This has further led to the desirable concentration of attention upon the problem of so improving the health, nutrition, and hygiene of the mothers as to restore a further number to the ranks of those able to nourish their offspring. To this end of inducing and enabling mothers to nurse their babies, has been wisely directed much of the effort of our American Association for the Prevention of Infant Mortality.

The subject of the child today suggests some reflections on the thoroughness with which we may or may not have assimilated our modern theories concerning children. In any conflict between the old and the new, whether it be in manners, morals, or religions, the new is deeply tinctured by the old. So it is with our modern care of children. Superstition and old wives' tales among the poor, tradition and custom among the well to do, tend to hold back the advance or leave gaps which are not quickly filled. Consistency, therefore, is a jewel which may not at once be attained. Consequently, there are some matters concerning the child of today which may be discussed from the standpoint of constructive criticism.

While, as has been stated, the value of maternal feeding has received wider recognition, and more babies are nursed, there is still a tendency to undervalue or neglect partial breast feeding. This is not solely among the laity, but is also found in the families of medical practitioners who should be their intelligent advisors. Even in our institutions for young children it has taken many years to impress the life saving value of partial breast feeding, and it is now a matter of congratulation that in some of them paid wetnurses have been secured, and that, notably in Boston and our own Bellevue Hospital, the purchase of breast milk drawn from needy women has been established through the agency of social service workers upon a fair commercial basis.

Again, although attention has been sharply focused upon the feeding of the child during the first two or three years of life, the diet of the child from three to ten years has received less consideration. This is doubtless because the gradual transition to the simpler articles of food has been accomplished at about three years, and with the passing of the traditional period of anxiety for the first summers on a mixed diet, vigilance is relaxed and, under the guise of needful variety, the child is allowed a range of articles gathered from all countries, which is at variance with the simple primitive needs of a normal, growing, young animal. With the dietetic bars

down, digestive disturbances creep in which have earlier been most scrupulously avoided, and the appearance of the child of six or seven years belies the promise which he gave at three.

In matters other than diet, too many unnecessary and often ill advised pleasures are forced upon the child. The elaborate mechanical contrivances, so amusing to the elders, only confuse and soon tire the infant, who more readily centres his affections upon some simple toy which falls within his comprehension and whose very simplicity gives scope to his imagination. The complexity, extravagance, and even doubtful nature of some entertainments arranged for children, not only stimulate them unduly, but have been found to encroach too much upon the hours which should be given to study, rest, and healthful outdoor exercise. A timely protest against this has just been registered by the recent formation in this city of the Parents' League, which aims at a rational abatement of these conditions.

In all populous communities, the opportunities for exposure to infection are manifold. Every true boy among us remembers the thrill of his first visit to the circus, but we also recall the picture of some child too young to comprehend it all, dazed by the light and constant movement, wailing from sheer fatigue, or sleeping fitfully amid the noise. Possibly one reason why the circus and similar gatherings are the greatest exchanges of germs, is because few except the most intelligent parents have the heart to leave at home the child who shows symptoms of beginning illness on the morning of a long promised treat. Thus, the incipient measles, sore throat, coryza, or diphtheria patient joins others to spread his malady. Then, too, there is the temptation to the parent to enjoy the child's pleasure in the sights of the crowded shops, unmindful that a passing pleasure may be too dearly paid for if there is contracted the contagious cold so widespread during our fall and winter seasons.

Habits are easily formed in childhood, when all necessary coordinations become unconscious and habitual; but in this wealth of new accomplishment, the bad is readily acquired with the good. It is a pathetic thing to see older children threatened, shamed, punished, or restrained by mechanical devices because they have been allowed earlier by thoughtless parents or negligent nurses to suck fingers, or form other undesirable habits. Such habits are readily checked at the start, before they have taken root in the subconscious self. Aside from their unseemliness, the potentialities for evil are very great. Why guard the child with quasisterile and aseptic measures, and allow the dust and dirt from every article he touches, be it toy, clothing, furniture, or floor, to be transferred by moist fingers to its mouth, with omnipresent danger of infection.

Many absurd contradictions arise in the effort to give expression to the modern solicitude for the health of children. Some of the most glaring appear daily among the no less important side issues of the milk question. In view of the proved risk to young children from bovine tuberculosis, not to mention other ills of bacterial origin, the use of a certified, or at least of a pasteurized milk has become an unalterable rule in all thoughtful families, yet one daily finds the same parents giving butter of absolutely unknown origin to their children, in blissful ignorance of the findings of Hess that tubercle bacilli, as well as other bacteria, are to be found in larger relative proportion in butter than in the milk from which it is made. With equal carelessness, junket is made for carefully guarded children, from ordinary, dubious milk, while the ice cream served them on Sundays and at children's parties is often, both in its origin and its composition, the despair of the pure food expert.

Undoubtedly the short stocking or sock, when worn by a chubby, rosy youngster, adds to the attractiveness of midsummer costume, and in really warm weather affords a coolness and freedom which may be definitely helpful in preventing the retention of excessive bodily heat. Its use, however, in regions where mosquitoes prevail is but an invitation to their attacks, and should the anopheles be present, enhances by so much the danger of malarial infection. Furthermore, its use, which in our latitude should be confined to hot weather, soon degenerates into an habitual routine, and it is not unusual to see it still worn on chill summer evenings and still chillier fall or early winter days, when the fond parent herself has begun to wrap herself in furs. However suitable, and perhaps toughening such socks may be considered to be for robust children, their use by thin, anemic children is the height of folly, for here there is no extra vitality to be recklessly wasted, and a stern command by the physician that long warm stockings shall be worn is often followed by a general improvement, which, after all, is not astonishing when one considers that many calories which might better have been employed in bodily nutrition have heretofore been wasted in maintaining only a moderate degree of bodily warmth.

In no respect, perhaps, has the attitude toward the child changed more completely than in the school. No longer is school work made irksome; no longer does the average child trudge reluctantly to school. Where learning was once put forward as a task, it is now made enjoyable. New methods, a human interest, shorter periods, more interesting presentation of the subjects, alternation of harder and lighter work, fresh air, and hygienic exercise under the guise of recreation, shorten the weary hours, and the child starts schoolward in the morning with happy expectancy. Knowledge, which the race has ever craved since the fabled days of Eden, is thus made attractive, and the seeds of scholarship are implanted.

All honor to those pioneers in modern education who have cast off the bonds of tradition and opened the way for vocational training in our schools. Necessary as are the fundamentals in education for all children, there comes early or late a point where instruction is best differentiated for their present and future needs. The child living in the country needs earlier knowledge of the flowers, trees, soil, and crops, whose mysterious laws are exemplified about it, and with which, sooner or later, it may have to deal. The child in the city is confronted with very different problems—the marts of com-

merce, the vast mechanism of manufacture and construction.

Since instruction by the parent in the family has decreased amazingly, special instruction for the school girl is imperative if she is to take her natural and normal place in the home unordained to failure. Might we not have happier and less extravagant homes, less divorce, less vague searching for a mission in the market place if the girl's education always fitted her to perform her functions in the world with less groping and less drudgery? In the world of efficient business, men learn their trade before full responsibilities are thrust upon them. Should it not be thus with the women and the mothers who are to be?

Where is the reverence for elders, the prompt unquestioning obedience of a former generation, the consciousness that infractions of rules bring speedy but just retribution? Are these compensated for by greater comradeship with parents, by the freer development of individuality? Who shall say? Will the rising generation have the same wholesome respect for law and order, for the rights of others; will they be the same staunch supporters of State and church, of local and national authority, as those who have gone before? There are many who ask these questions with grave misgivings.

Great may be our satisfaction with what has been accomplished and what has been begun for the child in our day and generation, great our confidence in the survival only of the best, but with all our advances, we are yet far from the day which shall see the eugenic superman outnumber his less fortunate brother. Insistent Nature will often thwart our higher purposes, and evolution as a whole will continue to work silently and obscurely through the centuries. It is given to us to aid her progress chiefly by removing from her path the unnecessary obstacles of man's making.

807 Madison Avenue.

PSYCHOANALYSIS.

A Reply to Dr. Samuel A. Tannenbaum.

By Meyer Solomon, M. D.,
Chicago.

He who dares raise his voice in criticism of, or in opposition to a staunchly supported or a widespread religion, and this applies to the religion of many of the followers of the Freudian school, should be prepared for biting criticism, and, if need be, for insult and abuse. If, before permitting himself to utter a single syllable or to write a single word in criticism or opposition, he is prepared to meet the onslaught which is certain to be forthcoming, it will be no shock to him to find himself misunderstood, to find his personality attacked, and to have his motives questioned. If the banner under which he has enlisted, however, is being carried forward in the battle for principles and for truth, he need have neither hesitation nor fear to face whatever abuse, sarcasm and diatribes may be employed against him, but rather should he bravely, manfully, and willingly bear up under and meet the attack—no matter whence its source of origin or however vicious or malicious it may be.

This statement applies, in certain respects, to an article entitled Psychanalysis. A Reply to Some Objections, written by Dr. Samuel A. Tannenbaum, of New York, and which appeared in the New York Medical Journal for February 7, 1914. Doctor Tannenbaum's paper was supposed to be a reply to certain objections and questions in an article entitled, Review of Conclusions Drawn from the Freudian School, written by myself, and which was published in the New York Medical Journal for November 8, 1913.

Because of the character of his criticism, the prejudice and personal animosity displayed, and the general attitude assumed by him, this article by Doctor Tannenbaum would not be deserving of a reply, were it not for the fact that certain great issues are here at stake—issues, of the tremendous and far reaching significance of which Doctor Tannenbaum seems to be entirely unaware.

The editors of this Journal have imposed certain limitations upon me with respect to the length of this reply. The questions here at issue are so important and the ramifications are so numerous and far reaching that one had better not endeavor even to touch upon their discussion or solution in such a short article. I shall, accordingly, not attempt, in this paper, to discuss or solve the various points of contention, but shall content myself with a few general remarks and criticisms.

It appears to me that it would have been better, for the sake of Freudism and for the cause of psychoanalysis, had Doctor Tannenbaum not published this so called "reply," because it adds absolutely nothing to the sum total of our knowledge concerning the serious problems at issue, and also because his general attitude, I feel certain, would not be approved by those Freudians who do original and independent thinking. After praising my paper because it was "free from the slurs, sarcasms, vituperation, misrepresentation, etc., that are so characteristic of the writings of our critics" and because it "bespoke an earnest desire on the part of its author for knowledge and enlightenment" and after explaining that he intended to "take up seriatim the points raised by Doctor Solomon and attempt to answer them," he next cites a number of my conclusions and questions, ridicules my phraseology, my logic, my conclusions, my questions, and my knowledge of the Freudian theories; refers very politely to "the logic centre (if there is one)" as "the blind spot in Doctor Solomon's brain"; denies, categorically, practically without discussion, the truth of my conclusions, and answers my rhetorical questions by an informative "No" or by repeating certain oft repeated conclusions of the Freudian school, which are untrue, which have never been proved by Doctor Tannenbaum, Freud, nor by any one else (and which I believe even Doctor Tannenbaum knows, deep down in his heart, have never been proved); throws sad reflections upon my knowledge of English poetry (although he has never met me nor apparently heard of me)—as if a knowledge of English poetry had anything to do with the problems under consideration—and then, after having.

in this very fatherly fashion, laid me so carefully across his knee and so gently spanked me, he ends his article by exclaiming, with a feeling of relief and satisfaction: "As to Doctor Solomon's other questions, let him and doubters like him devote themselves to the study of the Freudian writings and to the clinical investigation of their findings—and many stupid and meaningless questions will remain unasked," and, permit me to add, unanswered. And after he has delivered himself of this burden, I find, once again, that I must repeat the same questions and draw the same conclusions noted in my paper. I regret to say that, in spite of the cocksureness of his results and of his conclusions, Doctor Tannenbaum has absolutely forgotten or been unable to enlighten me on a single point. Hungry, childlike, I asked for bread—and still more hungry, I was sent away with a spanking. Let me assure Doctor Tannenbaum that, in spite of the unusually acrimonious and personal nature of his remarks, quite ill fitting a scientific discussion, I bear him not the slightest ill will. Nor do I hold the Freudian school responsible for his attitude or method in replying to objections or questions.

From a psychoanalytic standpoint, Doctor Tannenbaum's paper is very interesting. I shall not give the conclusions to which a long distance psychoanalysis has led me concerning the motives which conditioned Doctor Tannenbaum's defense reaction (really an overreaction), but I will say that his paper shows, very beautifully, many of the mental mechanisms which the Freudian school justly considers so important. His paper is a splendid example of self defense, self justification, and self rationalization. His fortress is impregnable. He clings tenaciously to his religion. His efforts at self defense are dependent upon the primeval cry of the *instinct of self preservation* (self preservation being used here in a broad sense, as including the intellectual and moral make up, the personality).

Before proceeding to a survey of Doctor Tannenbaum's criticism of my paper, I wish to state that, in response to a letter from the editors of the New York Medical Journal, informing me that that portion of the Journal which contained my article (criticized by Doctor Tannenbaum) had been on the press before my returned proofs were received by them and assuring me that the reprints would contain the article as corrected and revised, I sent the following letter to the editors, who very kindly published it in the November 22, 1913, issue of the Journal, page 1042:

To the Editors:

In view of the fact that the Journal for November 8th was on the press before you received the revised and corrected proof of my paper entitled, If Certain Conclusions of the Freudian School Were True,[1] which appeared in that issue of the Journal, the article as published contained a number of errors and omissions, some of which are so important that, although they will all be checked up in the reprints, I feel that the attention of your readers should be specifically called to them. On page 914 "practically always" on line 7 should read "usually"; "the dreams" on line 12, should read "most of the dreams"; "all the dreams" on line 13, should read "most of the dreams"; "every possible mental state" on lines 18 and 19, should read "almost every possible mental state"; "not a thought" on line 20, should read "hardly a thought."

On page 915 "always of sexual etiology" on line 46, should read "always of sexual etiology, when the condition is of primary origin."

On page 916 "Psychological basis" on lines 24 and 25, should read "psychobiological basis."

May I ask that you publish this letter in your columns?

At the end of the article, I added the following paragraph:

Since writing the foregoing, the author's attention has been directed to another viewpoint, of which he had had previously a general but indefinite idea. According to this conception, it is contended that all emotional surgings, all cravings, all emotional heavings, all sense cravings, of the infant and the adult, are best classified as both sensual and sexual. To the writer this would mean that all affectivity, all feelings, all instinctive tendencies, all human energy, hence the vital energy of the universe should be so classified. Even when viewing all activities from the biogenetic standpoint, the writer cannot agree that reproduction or race preservation is the ultimate goal of all activities, since, although this may be shown to apply satisfactorily to all human or even all organic activities, the biological utility of all inorganic processes would not thus be explained.

My reprints show these corrections and additions. But I wish it understood that the corrections and additions were merely for the purpose of presenting the Freudian conclusions as accurately as possible—and, as a matter of fact, to make the Freudian conclusions sound less sweeping and the standpoint appear more rational than actually seems to be the case. I was thus more than fair to the Freudian school.

I am, however, willing to let the article stand exactly as it originally appeared, without any corrections except the last two mentioned in my letter, namely: 1. "On page 915 'always of sexual etiology' on line 46 should read 'always of sexual etiology, when the condition is of primary origin,'" and 2. "On page 916 'psychological basis' on lines 24 and 25 should read, 'psychobiological basis,'" *as a true representation of the conclusions of the Freudians and as an extension of the conclusions drawn by me from the writings of the Freudian school.*

Whether the Freudians are right or wrong in all their conclusions and whether I am right or wrong in all my extensions of their conclusions, I will not discuss in this place. These are questions which, I believe, cannot be answered one way or the other, by a single sentence or so, as Doctor Tannenbaum has done, but require considerable thought and discussion and will no doubt be decided in the future. I think it is plainly apparent that Doctor Tannenbaum and myself seem to be standing, as it were, at different poles of the earth, and to be pulling in opposite directions. Perhaps, after all, we may agree in many more ways than Doctor Tannenbaum seems to believe. Here, too, only the future will tell.

But there is one radical difference between Doctor Tannenbaum and myself. Doctor Tannenbaum seems to have accepted Freudism as his religion, his god; while I am still a nonbeliever. Yet, in spite of this sorry fact, I am not discouraged. The battle between religion and science has been going on for a long time. Religion stormed furiously, fretted, and raged. Science went calmly on its way,

[1] "Certain Conclusions of the Freudian School" was the original title of the paper; this was later changed to "Review of Conclusions Drawn from the Freudian School."

In addition to the corrections noted in this letter, in another footnote I remarked: "The writer here employs the term 'Freudian' after due consideration. He does not intend to create the impression that all followers of Freud agree with Freud in all his conclusions, or that all followers of Freud agree with all the conclusions of other Freudians. He would class as Freudians all those who believe in the basic principles of Freud's psychology, especially in the theories of rigorous psychical determinism, of repression, of the significance of amnesia, and of the role of sexuality and far-fetched symbolism."

slowly but surely. False religious dogma is daily giving way beneath the load of scientific knowledge and proof. Darwin proved the validity of the theory of organic evolution without, so far as I know, even attempting openly to combat false religious belief. Baseless conclusions gradually die of their own weight. They crumble into nothingness. And I wish to assert most stoutly that Freudism, as it stands today, is, with too many—yes, with most of the Freudians, a religion, a cult. It will die of its own accord. But we may hasten things on their way by giving them a little shove in the right direction.

Doctor Tannenbaum finds fault with my paper in three notable respects: 1. My phraseology; 2. my peculiar method of reasoning, my logic; 3, my limited knowledge of the Freudian teachings. As stated above, the limits of this paper do not permit of a discussion of the problems involved. I shall barely touch upon the points worth while in Doctor Tannenbaum's paper.

Let us take up the last point which Doctor Tannenbaum attempted to present. He says: "Doctor Solomon is perplexed in the extreme as to the meaning Freudians attach to the word libido, and as to its relationship to the 'vital impulse' or 'life force' (Shaw) or *élan vital* (Bergson) or *Wille zur Macht* (Schopenhauer). He says 'libido smacks of sexuality—and libido means sexual impulse,' and that, according to the Freudians, 'the very flow of life and the energy which pervades the universe is sexual.' *Libido,* literally translated, means 'desire,' but inasmuch as this is felt to be too vague, Professor Putnam has proposed to translate it by craving.'" Doctor Tannenbaum then speaks of sexual love as being one phase of libido, which he likes to think of as "yearning" or "sensuous desire," libido in turn being one phase of the universal energy which emanates "from the sun and through it from God." Has Doctor Tannenbaum given us a correct interpretation of the Freudian viewpoint? Let us see. I shall quote my own paper on this point:

> If we would follow certain Freudians, we must believe that the very flow of life and energy which pervades the universe is sexual. That, in fact, is just what Jones[2] tells us when he states that "it will be seen that the importance he (Freud) attaches to the (sexual) instinct does not greatly differ from that of Schopenhauer's and Nietzsche's *Wille zur Macht,* Bergson's *élan vital,* Shaw's *life force* and the *vital impulse* of so many writers, all of which are equivalent to what Freud terms the libido." He replaces these metaphysical and poetical phrases by a scientific and biological one—one that is also in harmony with the sound intention of the people manifested, among other ways, through language, an example being the etymological unity of the words "love" and "life." Jung employs the term libido as synonymous with vital impulse, but broadens the meaning to apply, not only to the sexual impulse, but to all manifestations of vital energy, such as nutrition. "Libido smacks of sexuality. And to most Freudians, as well as to the rest of us, libido means sexual impulse."

Here, then, according to Jones, surely one of the three foremost exponents of the Freudian theories in America, Freud's sexual instinct or libido, "Schopenhauer's and Nietzsche's *Wille zur Macht,* Bergson's *élan vital,* Shaw's *life force,* and the *vital impulse* of so many writers, are practically one and the same thing. This, then, is the original Freudian viewpoint. Moreover, in the Three Contributions to the Sexual Theory, libido is used synonymously with sexual instinct or impulse: 'The sexual expression corresponding to (sexual) hunger not being found colloquially, science finds the expression libido.'[3] It was difficult to get an exact translation. Doctor Putnam[4] suggested 'craving.' But its real meaning, as used by Freud, is sexual impulse. Therefore, I am not in error when I state that 'to most Freudians, as well as to the rest of us, libido means sexual impulse.'"

I purposely called attention to the fact that Jung[5] employs the term libido in a much broader sense—as synonymous with vital impulse, but not giving to it an exclusively sexual interpretation. But since libido has a certain sexual connotation to most of us, I disapprove of the use of the term in this sense, since it is misleading. Consequently, on this very important point—the most important point at issue, it seems that Doctor Tannenbaum is in error. My paper had to deal with the conclusions of the Freudian school, using the term, Freudian, in the sense explained in the beginning of this paper.

This point alone is sufficient to prove the truth of the conclusions in my paper, whether my premises are right or wrong, since, if the flow of life, with the processes and manifestations dependent upon the motive sources of energy for their activity, is sexual, we must conclude that sexuality is the source of this life activity, whether it makes itself known in dreams, in anxiety, expectation or apprehension, in suggestion, hypnosis, hypnoidization, day dreaming, free associations, neuroses (including psychoneuroses), alcoholism and other drug and drinking habits, paranoia, or what not. In other words, sexuality would be "the underlying impulse in physiological tropisms, in physicochemical reactions, in all attention and repulsion, physical or psychic, in the organic or inorganic world."

Therefore most of the denials to my rhetorical questions (to which, of course, a negative reply was understood) should be answered in the affirmative if this idea is carried out to its ultimate conclusions. And it was the object of my paper to show that if the conclusions of the Freudian school, as given in my paper, were carried out to their logical conclusions that this would be the final conclusion—with which Jones, explaining Freud, agrees. This, even in Doctor Tannenbaum's own mind, leads to a *reductio ad absurdum.*

I shall now take up the points in which Doctor Tannenbaum feels that I am absolutely wrong and in which he even ridicules my logic. And here, too, I shall permit others to answer for me or to defend me since Doctor Tannenbaum seems to have not the slightest confidence in my reasoning powers, my knowledge or ability in any line. I shall take the trouble to look up the writings of some eminent psychopathologists, both here in America and abroad, and bring them to my support. I shall present some of Doctor Tannenbaum's quotations from my paper with his comments, and then briefly discuss them.

He quotes me as saying: "I think you will agree

[illegible]

[2] *Papers on Psychoanalysis,* preface, p. [illegible]

[illegible]

with me that hypnotic states, hypnoidal states, day dreaming, the mental condition of a patient who is giving free associations, etc., are all gradation steps differing in degree of consciousness. . . . If then, sexuality is the mainspring of hypnosis, it is the foundation head from which all these mental states also spring." To which the doctor replies: "It would be insulting to any trained physician's intelligence, to attempt to answer such an 'argument.'"

I shall rest my side of the case by merely calling attention to the following statement by that eminent psychopathologist, Dr. Morton Prince: "I maintain that when a person is in a state of abstraction, it is hypnosis. When you eliminate awareness of the environment and have simply a condition of abstraction and a cessation of reflection with a contraction of the field of consciousness, it is in principle hypnosis. You cannot distinguish between the two. Every Freudian uses hypnosis, though he doesn't know it, but calls it abstraction.[6]

Thus Doctor Prince agrees with me that the difference between the hypnotic state and the state of abstraction is one of degree—of degree of consciousness. This applies to all similar states, as stated in the quotations from my paper.

Again, Doctor Tannenbaum quotes me as follows: "If the root of alcoholism is to be traced to sexuality (homosexuality), as Freudians declare, then all drug and drinking habits must be dependent upon sexuality; then all (acts of) nourishment, all gastrointestinal activities and yearnings, all habits and all of our instincts have so arisen." I may say that the latter part is not quotation but an abstract made by Doctor Tannenbaum with the line of argument entirely omitted. To this, the Doctor rejoins: "Fatuity and unreason can no further go. By this time the writer must be painfully aware that the logic centre (if there is one) is the blind spot in Doctor Solomon's brain." In reply, I wish only to call attention to the relationship between alcoholism and other drug and drinking habits; between these so called narcomanias and other physical and emotional yearnings or cravings; between these habits and all other habits; between habits and instincts (the former being but a prolongation of the latter). My statement, as it stands, is perfectly logical and true.

When I ask, "Is all bodily yearning, all bodily gratification, all feeling of satisfaction of sexual make up?" Doctor Tannenbaum answers: "No, and no Freudian has ever said they were. But Doctor Solomon is again making a try at being logical." I have already pointed out that Jones says that Freud considers the libido and the sexual impulse as synonymous. According to Doctor Putnam's conception of the sexual, all emotional surgings, all cravings, all emotional heavings, all sense cravings, of the infant and the adult, are best classified as both sensual and sexual. Freud uses sexual in the sense of "love," the latter having an unusually broad sense, as explained by White:[7] "The word sexual is not used here in the narrow sense in which it is often employed, but with the broadest possible meaning. It refers not only to the physical relations between the sexes, but to the most distant and most indirect mental and emotional reverberations. It is used to include a domain much more extensive than that usually comprised in the word 'love.'"

As a matter of fact, sexual, in this broadest sense, to include all of the foregoing conceptions, would mean love, plus incestuous, bisexual, Narcissistic and polymorphous perverse sexual tendencies, plus bodily, sense and emotional yearning, craving, heaving or surging. Here, too, then, Tannenbaum's conception of the sexual instinct is not that of Freud—and my paper dealt with the beliefs of the Freudian school.

At another point he quotes me as follows: "If as Freud and his school have agreed, hysteria is based primarily on sexuality alone, then every possible dissociated state, e. g., a state of distraction, dementia præcox, etc., is dependent on sexuality." To which Doctor Tannenbaum appends the following: "If Doctor Solomon means that sexuality supplies the motive power for the psychoneuroses and that a sexual conflict lies at the basis, he understands us correctly." By saying that sexuality supplies the motive power for the psychoneuroses, Doctor Tannenbaum practically states that all human energy is of a sexual nature, for the simple but important reason that, contrary to Freudian teaching, neuroses, psychoneuroses, and psychoses may arise from a conflict centred about any one of our instincts, especially the instincts of self preservation and sex gratification. At the very beginning of his paper, Doctor Tannenbaum himself admits, apparently in contradiction to his statement above quoted, that nonsexual factors may play the most important role in precipitating a person into a psychoneurosis (although even here he may insist that sexuality is the basic factor). Any one who views this question with an unprejudiced mind knows that sexuality is only one of the causes for disturbed nervous and mental states. Indeed, I find it difficult to conceive how one can believe otherwise, especially if he observes the cases close at hand. I ask Doctor Tannenbaum to study the neurotic, psychoneurotic, and psychotic disturbances of the Jewish race and people, and he will find as convincing examples of the truth of this statement as are to be found anywhere. And then, too, let him remember the so called accident or traumatic neuroses, psychoneuroses, and psychoses.

"What," asks Doctor Tannenbaum, "has dementia præcox, etc., especially the 'etc.,' to do with hysteria?" By the "etc.," I meant states of abstraction, day dreaming, hypnoidal states, hypnotic states, hypnagogic states, sleep, states of relative mental relaxation, and many mental states of allied nature. All of these, as well as dementia præcox, have a distinct relation to hysteria. For a comparison of dementia præcox and hysteria, I will refer Doctor Tannenbaum to Jung's masterly study, The Psychology of Dementia Præcox.[8] Sidis[9] has shown the relationship of both sleep and hypnosis

[illegible] *Abnormal Psychology*, December, 1913, January, 1914, viii, p. 335. Discussion by Dr. M. Prince on his paper, The Psychopathology of a Case of Phobia. A Clinical Study, read before the Fourth Annual Meeting of the American Psychopathological Association, Washington, D. C., May 8, 1913, and published in the *Journal of Abnormal Psychology*, October, November, 1913, viii, 4.

[7] *Mental Mechanisms*, iv, p. 58, footnote.

[8] *Nervous and Mental Disease*, Monograph Series, 3.

[9] An Experimental Study of Sleep, *Journal of Abnormal Psychology*, iii, 1, 2, and 3, 1908.

to a primitive hypnoidal state. Janet [10] believes that to be hysterical is practically identical with being hypnotizable. Bernheim[11] points out the clear relationship of hypnosis to sleep. McDougall[12] mentions the similarities between sleep and hypnosis. All these conditions are states of mental regression or mental dissociation, differing in degree of consciousness or awareness in the relative position in the scale of mental evolution or development.

"A parody of Doctor Solomon's argument will show how illogically he reasons: If pulmonary tuberculosis is due to the tubercle bacillus, then every possible pulmonary condition, e. g., whooping cough, foreign body in the lung, etc., is dependent on the tubercle bacillus." We cannot compare hysteria to tuberculosis of the lungs. But we can compare hysteria to pulmonary disease. In my opinion the human mind is much more complex than Doctor Tannenbaum seems to suppose. Just as we no longer have one epilepsy or one apoplexy but the epilepsies and the apoplexies, just as we speak not of headache but of headaches, and as we refer no longer to insanity but to the insanities, so also we should speak not of hysteria but of the hysterias, not of dementia præcox but of dementiæ præcoces, not of manic depressive insanity but of the manic depressive insanities, completing our clinical diagnosis by a more exact description and by an etiological diagnosis, when possible. Were we to say that all lung disease was due to the tubercle bacillus, or that all kidney disease was due to the streptococcus or that all stomach disease or what not, was due to a single cause, it would follow that this etiological factor must be the causative factor of all physical disorders anywhere in the body—of all physical regression or dissociation. If, however, we gave physicochemical or vasomotor or metabolic disorder as the fundamental cause, our generalization would be correct; whereas, by referring to only one of the factors (such as the tubercle bacillus) which may initiate this fundamental disorder, our generalization would be inaccurate. So also, when we assert that hysteria is always due to a single fundamental cause in the sphere of the mind, it follows that all the other allied states of relative mental regression or dissociation are due to the same cause. If the motive source in hysteria is sexuality and sexuality alone, then we must conclude that the motive source in all the conditions enumerated is sexuality. This we know to be untrue. Any of our instincts may be the basic driving force in the causation of hysteria or of allied mental states.

Let us take up another point. Doctor Tannenbaum first quotes me as saying: "Freudians tell us that neuroses are the negative of sexual perversions; all neuroses are the outgrowth of sexuality. It must be generally acknowledged that the real difference between neurotics and the rest of us is one of degree. Consequently, if neuroses are the negative of sexual perversions, then all other psychic states are the negative of sexual perversions." Doctor Tannenbaum has no doubt unintentionally omitted that portion of my remarks which maintained the trend of the argument and has presented an abstract. He first criticises the bound from "neuroses" to "all other psychic states." This, I admit, is, on the face of it, an error. But it is an error in statement and not in fact. I should have referred to the mental symptoms in the psychoneuroses before mentioning "all other psychic states." Nevertheless, the conclusion is justified. Freud (*Three Contributions to the Sexual Theory*) and Hitschmann (*Freud's Theories of the Neuroses*) and many other Freudians have employed the term "neuroses" in the same sense as it is used in the phrase "traumatic neuroses." In that sense it includes the psychoneuroses. Our tendency, however, should be to separate the neuroses, psychoneuroses, and psychoses, although we should ever remember what, I believe, Doctor Tannenbaum will not concede as true, namely, that all these conditions merge one into the other by an imperceptible series of gradations, and that they differ from each other especially in the degree of the relative admixture of somatic and psychic symptoms. Let us never forget that we react biologically—by mainly (apparently only) physical symptoms or mainly (apparently only) mental symptoms, but in most cases by both groups of symptoms, simultaneously or one following the other. I used the term "neuroses" as Freud did, in the broad sense (as including psychoneuroses), and next referred to "all other mental states," omitting special mention of the thought (the psychic aspect of the psychoneuroses) which filled the gap between the two—hence the misunderstanding.

When Doctor Tannenbaum declares that "what the Freudians maintain is that the symptoms of the psychoneuroses are *partially* formed at the cast of abnormal sexuality," he is stating what is absolutely contrary to fact and to his own statement in the next paragraph when he asserts that "sexuality supplies the motive power for the psychoneuroses and that a psychosexual conflict lies at the basis." Doctor Tannenbaum must believe one statement or the other. If Doctor Tannenbaum (or any other radical Freudian) is beginning to realize that the dogmatism of the Freudian school is unfounded—let him tell us so openly and frankly.

At another point, Doctor Tannenbaum quotes me thus:

> Jones says that the methods by which suggestion acts in therapeutics are as follows: "The repressed sexual affects are withdrawn from their previous expression in various symptoms, and become attached to a more suitable object, namely, the person of the physician." This, to me, means but one thing: All dependence is sexual. I am prompted here to ask: Is all authority sexual? Do we value or worship nothing for other than its sexual significance? Does man sexualize the universe?

Doctor Tannenbaum cannot understand why I ask whether sexuality is at the basis of all suggestion, authority and worship. The effects of suggestion in therapeutics and elsewhere are possible only because of one's confidence in and dependence (justified or mistaken) upon something or somebody, frequently followed by a looking up to the source of dependence as authority, then valuing and finally worshipping it. There is, as is seen, an intimate interrelationship between suggestion, dependence, authority, worship. And I insist that if therapeutic suggestion acts by virtue of sexuality, which Fe-

[10] L'Hystérie maladie mentale. I Congrès International de Psychiatrie, de Neurologie, de Psychologie et de l'Assistance des aliénés Amsterdam, 1907; also *Les Névroses*, 1909.
[11] *Conception du mot hysterie*, 1911.
[12] The State of the Brain during Hypnosis, *Brain*, xxxi, 1908.

renczi and Jones believe, and which Doctor Tannenbaum does not deny, then all these other human relationships or states of mind derive their sources of motive power from the stream of sexuality. My rhetorical questions presupposed replies in the negative. Doctor Tannenbaum's faint effort to prove that man does (at times) sexualize the universe (with which I agree) by asking: "May I remind him (Dr. Solomon) of the expressions, Mother Earth and Father Time," is most amusing. It is indicative of the general tendency of the members of the Freudian school to prove that our relations to our parents are dependent (whether greatly, mainly or entirely, they do not say; at any rate, they do not mention other factors) upon sexual gratification.

Another quotation from my paper:

> If, as Jones positively asserts, morbid anxiety means unsatisfied love (and Jones uses "love" in a purely sexual sense) since the difference between common, ordinary, everyday anxiety and so called morbid anxiety is absolutely one of degree alone, then one must conclude that every possible state of anxiety or expectation, however slight in degree or brief in duration, springs in like manner from sexuality.

This impels Doctor Tannenbaum to explain that anxiety, as here used, means apprehension, morbid anxiety is morbid apprehension and morbid apprehension is the result of repressed sexual desires; and to accuse me of replacing the German word *Angst* by "expectation." I wish to call attention to the fact that expectation, anxiety, apprehension, morbid apprehension, and fear are all gradation steps of one kind, flowing over one into the other, and differing in degree of reaction and not in kind. What may arouse expectation in one individual may arouse anxiety, apprehension, fear, or even *morbid apprehension* in another. Therefore, if all morbid apprehension means repressed sexual desires, all these other mental states mean the same thing. I am not here discussing what they really do mean; but I may mention, in passing, that I am one of the great mass of humanity who believes that apprehension, fear, anxiety, expectation—call it normal or morbid or any degree you wish—may be caused by an appeal to any of our instincts, especially to that powerful instinct of self preservation. Surely Doctor Tannenbaum does not wish to reserve the word abnormal or morbid for those conditions which happen to have a sexual factor as a contributing or as the predominating inciting cause. Doctor Tannenbaum's parody on my argument seems to suggest that such in his viewpoint. "The difference between growth (common, ordinary, every day anxiety) and morbid growth (morbid anxiety or apprehension) is one of degree; but morbid growth (morbid anxiety or apprehension) means disease (unsatisfied love or sexuality); consequently normal growth or bodily development (ordinary anxiety) springs from disease (sexulity)." This is a good argument to disprove his own contention—which is that of the Freudian School.

Doctor Tannenbaum's declaration that "Doctor Solomon's 'neurasthenias from other (than sexual) causes,' are not neurasthenias but, more probably, cases of apprehension neurosis, apprehension hysteria, obsessions, etc.," suggests the following remarks: Apparently things have come to that stage in neurology when nobody not a true dyed-in-the-wool, whole souled Freudian knows how to diagnose neurasthenia; that when he finds sexuality as the cause of the neurasthenia he is correct in his diagnosis, but when he finds other than sexual factors as causes, the cases which he has are not "true neurasthenia," but more probably apprehension neurosis, apprehension hysteria, obsessions, etc.; and when we come to unravel the true, underlying cause of these latter conditions, we find that here too, acording to the Freudian school, sexuality is the predominant factor; so that, after all, when neurasthenia is not of sexual etiology, it is another condition, which also is caused by a disturbance in the sexual sphere. Wherever we turn we find sexuality.

Doctor Tannenbaum disagrees with my statement that the difference between the sleeping state, the waking state and other states of consciousness is essentially quantitative, asserting that there is also a qualitative difference, instanced in our mental condition during sleep as distinguished from that of the waking state. In reply, I will repeat what I have said elsewhere[13]:

> Let us endeavor to learn the significance of the mental processes during sleep. Briefly stated, we can explain them in the following fashion: Sleep is an instinct. It is just as much of an instinct as are eating and other similar processes. Sleep is a biological and physiological defense against the possibility of fatigue and exhaustion. The sleeping state is characterized by a certain degree of consciousness which is much lower in the scale of mental evolution than that which is present in the waking state. Reasoning, judgment, critique, intellect, logical and orderly thinking are greatly lessened; creative activity is slight or absent. There is a return to free play on our instincts and emotional strivings, the material being furnished by the past (recent or remote) mental content or makeup of the dreamer.

And again[14]:

> Sleep, then, is a state of the mind and body considerably lower in the scale of evolution than is our normal waking state. Accompanying sleep, which, of course, primarily depends on physicochemical and physiological changes in the nervous system, there is an associated, correlated mental state or degree of consciousness. The sounder the sleep, the less active is consciousness, likewise the degree of awareness and the mental processes conditioned thereby. The less sound the sleep the more active is consciousness, with its accompanying mental processes and degree of awareness. It is obvious that, on the mental side, it is wholly a question of degree of consciousness. With respect to the varying degrees of consciousness in sleep or in other psychic states, we can lay down this general law: The lower the degree of consciousness, the lower is the reason, the selective judgment, and the critique of the individual, the lower is the degree of awareness, the greater is the suggestibility, the freer the rein to instinctive tendencies and individual desires, the less orderly, guided, and logical the mental processes, and the less apt is one to remember the content and trend of these processes. Since, in sleep, the play on our instincts, our wishes, our fears, etc., is free, misinterpretations and inadequate reactions may occur. Association and flight of ideas may be very marked. Slight resemblances may lead to a change in the content or trend of the dream. Consequently, the mental processes in dreams are what one might expect for that grade of consciousness, that grade in evolution.

Further Doctor Tannenbaum calls attention to the discrepancy of at one time stating that Freudians believe that dreams practically always have a sexual meaning and at another time stating that ac-

[13] Some Remarks on the Meaning of Dreams, *Medical Record*, January 11, 1913.

[14] Interpretation of Dreams, Based on Various Motives, *International Clinics*, iv, 23d Series.

cording to the Freudians all dreams are dependent upon sexuality. His criticism that "a sexual meaning" is quite different from "being dependent on sexuality" is mere quibbling—he and I mean the same thing, namely, that the sexual impulse supplies the motive power. As a matter of fact, according to Doctor Putnam's conception of sexual, as explained above, *all dreams* have a sexual meaning. Jones believes that dreams are the neuroses of the healthy; and Freud believes that neuroses are the negative of sexual perversions. Hence, if we follow the Freudians, all dreams have a sexual meaning and are the negative of sexual perversions.

For the benefit of Doctor Tannenbaum, I will repeat once again, without discussion, that the essential difference between a normal and neuropathic or psychopathic individual is one of degree—of degree in physicochemical stability or organic make up of the nervous system, of degree in adaptability, of degree in resistance to shock, stress and strain. The erroneousness of the conclusions of the Freudian school and hence of my extensions of these conclusions and the absurdity of the rhetorical questions asked by me was so apparent to me that I did not attempt to give my personal opinions on these questions. Nor did I do so in this paper. I see, however, that this is quite essential and I shall endeavor to do so in the near future.

Doctor Tannenbaum has disregarded the great issues at stake and has permitted himself to indulge in petty criticism and in sarcasm, which have no place in a scientific discussion. I am either wrong or right. If I am earnest in my opinions and believe in the truth of my conclusions, even though they be absolutely false, baseless, and imaginary, personal condemnation and insult are not called for. However, I am willing to let that pass. I am willing, for a moment, to admit certain errors in the choice of words—in phraseology. I am likewise willing to admit, for the sake of argument, that I have only little knowledge of the subject. The question still remains unanswered: If my conclusions are wrong, why are they wrong? It is to be further noted that with respect to most of the interpretations of the Freudian theories (conclusions) Doctor Tannenbaum does not deny that I have given a true interpretation and presentation.

In concluding this paper, I feel compelled to point out the distinction between Freudian psychoanalysis and psychoanalysis when used in an unqualified sense. Doctor Tannenbaum speaks of psychoanalysis as if all psychoanalysis was Freudian psychoanalysis. When I use the term "psychoanalysis," I do not refer to Freudian psychoanalysis, but to psychoanalysis from a broad standpoint. Many of the opponents of the Freudian school are psychoanalysts, but not of the Freudian denomination. I may say, for myself, that I am not opposed to the psychoanalytic movement, but, on the other hand, am an ardent supporter of it. But I am opposed to the attitude and the dogmatic conclusions of the Freudian school of psychoanalysis. Doctor Tannenbaum agrees with me that psychoanalysis should not mean sexual analysis alone. But, in spite of any statement by Doctor Tannenbaum or any other defenders of Freudism, that is exactly what the Freudian school has been trying to make of it. Their every effort is expended in giving a possible interpretation to their findings. Most of the cases which they publish and most of their thinking seem to be along this line. When explanations of another nature are given—an uncommon occurrence they do not trace them to the underlying motives, all of which, except the sexual motive, are thus practically disregarded. The Freudians are doing their utmost to make every psychoanalysis a sexual analysis and to make psychology and sexology synonymous. They see sexuality where sexuality does not exist. They read sexuality into everything. They are viewing the universe from a psychological and sexual standpoint.

The object of my paper was to indicate the absurdity of their conclusions, conclusions, by the way, which they have arrived at by the loosest reasoning, by reasoning by analogy, jumping to conclusions, making unproved, broad generalizations and emphatic, dogmatic assertions. Freudism is indeed an "ism," a religion, a cult, a creed. Its heyday will soon be over. The psychoanalytic movement will live on, on a more scientific foundation. A true psychology and a scientific psychoanalysis based on the instincts of man as we know him to be, will be developed. Freud has given us the inspiration for psychoanalysis. The genetic concept in neurology and psychiatry is with us to stay. But Freud's psychology and the conclusions based upon this psychology must undergo radical modifications. And the movement must be made a thorough going, sane, scientific, impartial matter. Let us do away with the "isms." Let us connect names with ideas only because of the value of the ideas. But let us not worship names. This is not a question of names or a fight on any particular individuals. It is a battle for principle and for truth. And in the name of science, let us pay no heed to the names which may be credited or discredited by bringing the truth to the surface. The fight on the Freudian theories has just begun. The opposition up to date has been silent, passive. The time is ripe for active opposition to the Freudian movement. The specialists in this field of medicine must take a stand on one side or the other. They have been looking on quietly up to the present.

This attitude or conspiracy of silence can go on no longer. Freudism must be attacked wherever it deserves attack. The sooner this is done, the better.

1517 South Kedzie Avenue.

THE PSYCHOLOGICAL EFFECT OF THE FAIRY STORY.

By A. L. Benedict, M. D.,

Editor, Buffalo Medical Journal

Buffalo, N. Y.

Dr. A. A. Brill, of New York, contributed to the New York Medical Journal for March 21, 1914, an article entitled Fairy Tales as a Determinant of Dreams and Neurotic Symptoms. Like most of the current literature on dreams, it deals largely with sexual, even depraved sexual phenomena. But it occurs to me that the influence of fairy stories has

not been sufficiently emphasized. Most of us are brought up on this sort of literature, at an age when the mind is most receptive. We gradually learn to disbelieve in fairies. Many children are greatly confused when the time comes for scepticism as to folklore, disbelief in superstition, and a growth of religious faith. As one boy put it, after having been disillusioned as to Santa Claus, "Have you been stuffing me about Jesus too?"

A considerable proportion of mankind, even in the most enlightened countries, hang on to their superstitions. Most of them are somewhat ashamed to admit this fact but they quietly plan to have some member of the family dine alone when there are twelve others present. In hotels and office buildings, room 15 is next door to room 11. We know of an apartment house in which an inconvenient half number is used instead of the regular 113, not because the owner was himself superstitious, but because the vacancy of that apartment exceeded that of all the rest put together. A few years ago, on asking a ticket agent to change a berth number from upper 13 to something else, he at once jumped to the conclusion that we were superstitious. This was not an unreasonable conclusion, especially as we had been credulous enough to suppose that a lower berth reserved two days previously, would be held. The explanation, however, that it was considered bad luck to sleep over two women and two small babies was accepted as adequate.

As has been pointed out by students of folklore, many social customs, as covering the mouth when yawning, avoiding the separation of a couple by walking on both sides of a post, not staring at a stranger, not pointing at an object, saying *Gesundheit* to one sneezing, are survivals of superstition.

Astrology is no more a dead science than Greek is a dead language. This is true even in the commercial sense. The sale of birth month books and of those describing the effects of jewels, the practice of palmistry, etc., attest this fact. The writer knows of a clergyman and teacher who makes quite a large sum drawing horoscopes, and has been repeatedly urged by otherwise intelligent friends to have a horoscope drawn as a guide to financial success. When one reflects on the mysterious action of gravity, on the recent apparent demonstration of the transmutation by radiant energy of one element into another, and the theory that the initial microorganisms from which plants and animals have been evolved, might be driven through space from one planet to another by light waves, it becomes increasingly difficult to argue against a fixed belief in astrology, however skeptical one may oneself remain.

As to palmistry, the writer confesses to a firm belief in certain phases. Reference is made, however, not to the roadside or church fair palmistry or that of the red robed wizard of the cheap lodging house. But the writer is convinced that the reflex muscular action of the muscles of the fingers, even more than the same phenomenon which many persons repress in the facial muscles, does register psychic states and even marks the general muscular vigor of the body. A long life line, for instance, indicates strong adduction of the thenar and hypothenar eminences and is almost always associated with physical vigor. The head line is developed largely by holding a pen or pencil and, generally speaking, pen and pencil exercise is associated with head work. Quite aside from this direct tendency to its formation, the fact that we speak of grasping a problem or of the clenched fist of determined mental aspiration, denotes an actual muscular reflex from psychic states. Purely as a matter of empirical observation, and without our being able to account for it, there even seems to be an association between strong sexuality and the development of the heart line, especially when the latter is duplicated. One of the most curious illustrations of a fallacious fulfillment of a palmist's prediction was the sudden death of a woman who had just one prominent line across her palm. We happened to hear the prediction of a sudden and violent death, made by a social amateur in palmistry. A few months later, death did occur, in just such a way but purely accidentally and in no way due to the characteristics of the victim. But the prediction was, in a sense, justified. The line indicated a badly balanced, sexually neurotic, reckless temperament; the victim had robbed another woman of her husband and unquestionably was predisposed to a violent death by reason of lack of inhibition, an emotional nature, and lack of prudence. That general states of circulation, metabolism, etc., are shown by the texture, color, plumpness or crinkling of the skin, amount of perspiration, etc., no one can deny.

The influence of the fairy tale may be of serious import in a markedly neurotic child, in determining a day dream or a repeated true dream, in which personal acquaintances and experiences are grafted on to the fairy tale, very likely with the addition of the sexual element. It should be borne in mind that any precocious development of sexual thought in a young child is, if the child is ignorant of the anatomy of the opposite sex, almost inevitably homosexual in the literal sense. If the child is not fully conversant with sexual physiology, it is equally evident that the sexuality tends to develop features of perversion, in the same literal sense. And, unless the child's opportunities for acquaintance and inquiry along sexual lines are abnormally broad, his sexuality is necessarily incestuous. Probably very few children escape these tendencies altogether, since, to do so, implies an abeyance of sexual psychic development until full information on sexual matters and a full development of judgment and ethical conceptions have been achieved. Normally, the child has his mind occupied with other matters, becomes objective in his interests, and either forgets these immature sexual interests or remembers them with disgust tempered with an allowance for his own immaturity at the time they were held. But a carefully guarded, solitary, indoor child is liable to have this originally essentially homosexual, perverted, and incestuous sexuality continued until from accidental information, certain errors of conception are corrected, and until external factors, combined with the *vis a tergo* of the sexual interests—which are really rather undifferentiated than strictly inverted or perverted—tend to give sexuality a turn in the normal direction. Under these circumstances it is obvious that there is danger of a persistence of the early undifferentiated and accidentally abnormal sexuality, either in extreme type or in various

bizarre manifestations. Such persistence is psychically quite closely analogous to the various physical forms of hermaphroditism and discordance between apparent and real sex.

What, may be asked, has all this to do with the influence of the fairy story? The fairy story has, in many a child's life, a place fully equal to that of literature, lectures, etc., in adult life, with the added factor that the child's mind is much more susceptible and is not filled with the multitude of interests of daily life as is the adult's. There is perhaps another reason. Generally speaking, the prime element in the fairy story is its truth. This is a surprising statement and is itself, true, only in a paradoxical sense. But the fairy story is the religion and morality and wisdom of the race in a state of childhood. Many tales undoubtedly date back to real persons and real happenings. They are, of course, exaggerated in detail, they involve supernatural explanations and beliefs not at present held literally; in many instances they involve personification and allegory originally understood, then accepted as literal truth, finally considered by most adults as pure fiction. But, discounting these factors, they do present, in most cases, moral and ethical truths and actual human experience. Even when these conditions are not fulfilled, the errors are precisely those of mental immaturity. They have become children's stories in almost exactly the same sense that the exanthemata have become children's diseases. They represent literature, wisdom, morals, ethics, and even religion from the standpoint of an immature race and, for this reason, they appeal naturally to the child's mind more strongly than any modern substitute written by a mature mind and intended for an immature mind.

Comparatively few of our fairy stories are essentially sexual, doubtless largely because those which were originally so have been gradually eliminated or expurgated. Strongly sexual and, to our minds, immoral stories are found in the folklore of various savage and barbarous peoples, and are even preserved in special editions, as are the Arabian Nights, for studious adults who like to gloat over them under the pretense of serious literary interest. In such collections, one finds almost exactly the counterpart of the childish homosexuality, perversion, incest, and general sexual silliness noted in the modern scientific study of dreams and day dreams of sexual neuropaths who have retained the original childish groping after sex.

Most fairy stories are more or less romantic and are easily made the framework of sexual dreamings, as has been well pointed out by Brill. In this respect, however, they are on a par with many silly ideas suggested to children by adults, which produce self conscious sexual thoughts with regard to perfectly natural friendships, and which stimulate sexuality, although without realization on the part of the adults that such is the logical result. The same thing is illustrated in almost every drama following the lines of the fairy story. In *Peter Pan*, we have the earlier awakening of the sex impulse in the girl resisted by the blood and thunder preferences of the boy. In many others we have the two immature lovers, guided by a good fairy, blonde, *passée*, and exuberant, whose efforts are for a time thwarted by a bad fairy, brunette, not so faded out, usually with her tights under lower tension. The incidents follow a maze of ballets and culminate with an apotheosis (accented on the o) on which every opera glass is trained to the limit. There is a considerable demand for children to take to such "shows," although grown persons predominate in the audience.

It should be noted that actual belief is not necessary for a strong control of the mind. Many business deals are put through by men in whom little confidence is felt. The influential strength of many religious denominations rests, to a considerable degree, on persons who either have no strong religious convictions at all or, at least, do not believe in the particular creed of the denomination. Political partisanship in its practical working strength has very little to do with platforms. Thus, it is not surprising that the fairy story, representing the fundamental beliefs of man in a comparatively primitive state, and impressed on him when his own mind is in the same state of development, continues to exert an influence long after he has discarded his literal belief in the supernatural, except in the conservative form of religion.

So much attention has recently been given to the psychology of dreams, day dreams, obsessions, etc., with special reference to sexual developments, that it is worth while to emphasize the apparently heterodox, though by no means conflicting view, that this phase of psychic manifestation is not entirely putrid.

One of the most interesting and universally persistent influences of the fairy story is the belief in the fairy godmother. Oh, no, not in its literal form of a little old woman with a cane, emerging suddenly from thin air, but in what amounts to the same thing practically. Our distant and previously unknown second cousin, Peleg, is going to die in some remote quarter of the globe and leave us comfortably well to do, if not fabulously rich. Our hitherto unappreciated professional skill, literary ability, or executive judgment is going to be recognized by some university, publishing house, or institution. The best of it is that the fairy godmother does materialize in some such modern form, not at all rarely. Consider the rich, beautiful princess part of the story. Many men could have married more beautiful girls, but their particular choice was more attractive at the time and the more beautiful rival has faded out into a hideous old hag. A great many men have married relatively rich girls and a great many more have wives whose practical thrift and ability are the equivalent of a substantial dowry. In not a few instances, the wife may not be a princess, but is at least the great granddaughter of a governor or general or a more distant descendant of nobility. On the whole, for most of us, the fairy godmother has done pretty well in these respects. The frequency of financial windfalls is also noteworthy. Four of our friends have recently been remembered by a wealthy man. The sums were not large and none of the beneficiaries was really in need of assistance, but the precedent of thus recognizing the medical profession is an excellent one, and we are inclined to think that a far nobler phil-

anthropy than the bequest of money to increase our already ample educational facilities or to aid the down and out, is to give the average hard working man, between his training for a life work and his senile retirement, a chance to "spit on his hands" and get a fresh hold on the rope.

Now here is a literally true fairy godmother story: Several years ago, one of our acquaintances was obsessed with the idea that the godmother simply had to produce a university appointment. So far as we could see, there was no reason for his faith save the somewhat irrelevant fact that he had done exceedingly good work along a certain line. Becoming discouraged at the failure of the fairy godmother to "produce the goods," the hero engaged in some rather trite investigations with ethyl hydroxide. Just what happened after this, no one, least of all the hero, knows. Some time later, he found that, apparently, the traditional jinni had transported him a long distance and had left him, moneyless and shabbily clad, in unfamiliar surroundings. He inquired where he was and, naturally, was given a street address. He had to inquire further to learn the name of the city and the State, also the day of the week and the month. Noté that, except for costumes, dates, and other externals, this is exactly the course of the typical fairy story. The rest of the story would have to be told by a scientist, except that it ends happily with fame and riches and power which, for all practical purposes, are considerably better than those of the old fairy story.

The writer has had some experiences with the fairy godmother. Up to date, the trouble has been that one position of ease and honor involved taking orders from some one higher up; that another required going contrary to natural inclinations of work; that another was very honorable, but not at all lucrative; that another was lucrative enough, but required the severance of local ties and even the possible sacrifice of counterbalancing financial benefits, etc. Ancestral estates are firmly believed in by a great many persons. Occasionally they actually materialize. One of our plain, democratic, American colleagues is a descendant of a king, and has an eye on some valuable property in England. The writer would even confess to the same dream, in the humbler and poorer and more prosaic form of a land grant of more recent times.

The fairy godmother still plays an important part in life and very fortunately so. Not long ago, a friendship of three generations was cut short by the suicide of a man who had more historic and better blood than royalty in his veins, if indeed he did not have the latter also. This tragedy, like many others of the same kind, was due simply to the fact that he had grown up so as to disbelieve in the fairy godmother.

Most of the supernatural paraphernalia of fairy stories have already been realized by scientific invention—the magic carpet, the power of seeing and hearing what goes on at a distance, the healing power over disease, the service of unseen hands supplanting troublesome human slaves. In some instances, these realizations of the fairy story have been almost perfect, in others they are still crude, but in almost every practical respect, we may have firm faith in their fulfillment within a comparatively short period.

The influence of the fairy story on man, in the aggregate and individually, has been strong, and on the whole, it has been salutary. It is a pity that our profession is, at present, concentrating its attention on one detail of its development along pathological lines.

RECTAL CASES UNDER LOCAL ANESTHESIA.*

By J. F. Saphir, M. D.,
New York,
Visiting Surgeon for Diseases of the Rectum and Anus, People's Hospital; Chief of Clinic for Diseases of the Rectum, German Poliklinik; Associate Visiting Physician, Home of the Daughters of Jacob.

I present a number of patients, all sufferers of some rectal condition, which had been cured by operation under the influence of local anesthesia, either at the home of the patient, or at my office, or at the clinic, the patient feeling no inconvenience either during or after the operation, and continuing to attend to the various duties of his occupation, either immediately after the operation or the next day.

Beginning with the Schleich solution over twenty years ago, various other solutions have been tried from time to time to produce local anesthesia, with the smallest amount of inconvenience to the physician and the greatest amount of comfort to the patient. Sterile water, sterile saline solution, cocaine in various strengths, beta eucaine, novocaine, holocaine, stovaine, etc., have been tried, and each with some success, but the most recent local anesthetic and the one that I am partial to is the quinine and urea hydrochloride solution. I have used it in over 300 cases and have found it most practical in operations about the anus and rectum. It is put up in glass ampoules, each containing five c.c. of a one per cent. solution, as well as in tablet form, each tablet containing five grains. I always carry some of these tablets, so that in case of emergency, I can make a one per cent. sterile solution by boiling one tablet in one ounce of water. Boiling does not change the properties as a local anesthetic

I prefer to use the quinine and urea hydrochloride solution to any other local anesthetic, because I do not get the aftereffects, the toxic symptoms, the cold sweat, the feeling of faintness, the excruciating afterpains within five or ten minutes after operation, which can be controlled only by stiff doses of morphine, that usually follow local anesthesia produced by cocaine or beta eucaine, or any of the other cocaine derivatives, even when used in one eighth or one tenth per cent. solution. The anesthesia produced by quinine and urea hydrochloride solution takes place within three to twenty minutes, and lasts for a period of three to ten days after the operation, a sufficient time to allow the wounds produced by ordinary rectal operations to heal. Even the distention pain caused by sterile water or saline solution is avoided when quinine and urea hydrochloride solution is used.

However, in spite of the extreme efficiency and

*Presented before the New York Physicians' Association, January 22, 1914.

excellent results I have had with this solution, I have come across some excellent men who have tried and discarded it. On questioning them, I discovered that their chief objections were, that they got sloughing, they did not get primary union in skin work, they noticed a thickening of the tissues, where they had injected the solution, etc.; but these obstacles or objectionable features can be very easily overcome when the solution is used properly. 1. A strong solution (by that I mean one per cent.) should be used, where sloughing followed by the formation of cicatricial tissue is desired, as in mucous membrane work; 2, weaker solutions as one eighth, one fourth, one third or one half per cent. should be used where primary union is desired, and where sloughing of tissues would be objectionable as in skin work.

Rectal cases in which local anesthesia is feasible, are: 1. Thrombotic hemorrhoids; 2, skin tags; 3, external hemorrhoids; 4, internal hemorrhoids; 5, fissure ani; 6, ulcers of the anus; 7, dermoid cysts; 8, rectal polypi; 9, tight sphincter ani; 10, some cases of fistula ani; and, 11, some cases of prolapsus ani. Rectal cases in which local anesthesia should be preferred, are: 1. Patients who refuse to be operated on under general anesthesia; 2, patients who cannot afford to absent themselves from their places of business or from their social duties for one or two weeks; 3, patients who are sufferers from some cardiac, nephritic, tuberculous, or other pulmonary affection.

For the production of local anesthesia, I use a syringe which I had especially made, a description of which was published in the NEW YORK MEDICAL JOURNAL for February 4, 1911. With the following cases I shall endeavor to prove to you the efficiency of local anesthesia in rectal operations:

CASE I. M. G., tailor, aged fifty years, came to the German Poliklinik complaining of stomach trouble for the past eight years; had rectal trouble for the past eighteen years. He had been using dilators for the past six months. Noticed some protrusions at the anus followed by bleeding after stools, was constipated, and had severe pain following every defecation, especially after having taken a cathartic. He also complained of pain on sitting and he thought he had lost weight. Examination revealed a very tight and hypertrophied sphincter with internal hemorrhoids, some of which were ulcerated. A one quarter per cent. solution of quinine and urea hydrochloride was injected one half inch outside of the anal opening, posteriorly, and deep into the sphincter for a distance of one and one half to two inches. A blunt pointed straight bistoury, two inches in length, was inserted into the anus, the cutting edge pointing posteriorly, and was then withdrawn, the knife cutting the sphincter, making a wedge shaped incision, the point or the angle of the wedge being two inches above the anal opening. A one per cent. solution was then injected into the hemorrhoidal areas, which were dissected up and ligated with heavy linen thread; the edges of the wound were clipped off to permit drainage and to prevent healing too soon. A one half inch strip of moist gauze was inserted for drainage, a dry dressing and a T binder were applied. The patient went home, felt no pain during or after the operation, and he called at the clinic every other day for change of dressing.

CASE II. M. L., case maker, aged twenty-nine years, complained of rectal trouble for the past three or four months, came to the German Poliklinik, suffering with pain during and after defecation, lasting for a period of three to four hours, with occasional bleeding, and some protrusions from the anus. Examination revealed the presence of a fissure and internal hemorrhoids. This man had a one third per cent. solution of quinine and urea hydrochloride injected into the sphincter, which was cut in the same way as in the previous patient. The internal hemorrhoids were infiltrated with a one per cent. solution, were brought down with a clamp, cut at the mucocutaneous junction and ligated with heavy linen thread. A one half inch strip of moist gauze was inserted for drainage, a dry dressing and a T binder were applied, the patient went home, felt no inconvenience, and very comfortably attended to his work ever after.

CASE III. E. A. L., engineer, aged seventy years, referred to me by Dr. J. Van den Berg, felt well until three years ago, when he suffered with constipation, and on trying to take an enema, he noticed a fullness and protrusions at the anal opening, some swelling, and after that blood following every defecation. He was constipated and took cathartics; had no pain, and felt as if his act of defecation was never completed due to this mass. He also noticed moisture about the anus and a slight discharge of mucus and some itching, evidently due to this discharge. Told me that he had noticed protrusions on and off for the past forty years. On examination, I noticed a patulous anus, which made me suspect some tumor higher up, more serious than the large mass of hemorrhoids which I found ulcerated and bleeding, Proctoscopic examination revealed a catarrhal condition of the rectum and sigmoid, which was responsible for the discharge of mucus and the resulting moisture and itching, which was later successfully treated medicinally. This man was operated on in my office. The hemorrhoids were individually injected with a one per cent. solution of quinine and urea hydrochloride, and each individual hemorrhoid brought down with a clamp, nicked at the mucocutaneous junction and ligated with heavy linen thread, high up so as to get as much of the redundant tissue as possible. A strip of narrow moist gauze was inserted into the rectum, sterile gauze dressing and a T binder were applied, and the patient went home, having felt no pain during or after the operation. One week later, the anus resumed its normal shape and appearance, the protrusions were gone, the patient attended to his arduous work as engineer without pain or discomfort. The man was well, had no more blood with his stools and had a comfortable movement daily, without the aid of a cathartic.

CASE IV. M. L., salesman, aged twenty-two years, had an abscess at the end of his spine near his anus about one year ago, when he was operated upon and felt relieved. When I saw him, he was in severe pain and agony, especially on sitting and on walking, and complained of a swelling at the same location that he had been operated upon a year ago. Examination revealed a fistula and abscess. The following day I operated at his home; one fourth per cent. of quinine and urea hydrochloride solution was injected into the tissues overlying the fistulous tract, and into the sphincter muscle, a complete opening was made into his rectum, the sphincter muscle lying in the path of the fistulous tract was cut at right angles with the muscular fibres, a strip of gauze was inserted into the rectum and into the tract for proper drainage, plain sterile dressing and a T binder were applied, the patient complained of no pain during or after the operation, got out of bed the same day, had a comfortable movement daily, and called down to see me the following day, traveling five miles in the subway, and was not kept from his business, except on the day of the operation.

CASE V. G. S., lithographer, aged thirty-eight years, referred to me by Dr. H. Friedman, had rectal trouble for the past ten years, noticed protrusions and itching and occasional bleeding. For the past two months his complaint became more aggravated, and beside the protrusions and bleeding, also noticed pain after stool lasting for two or three hours, sometimes all day and during the entire night. He also had pains on walking and on sitting. Examination revealed external and internal hemorrhoids and fissure. He was operated on in my office under local anesthesia. The parts were anesthetized with a one per cent. solution of quinine and urea hydrochloride for the internal hemorrhoids, and a one fourth per cent. solution for the external hemorrhoids and for infiltration of the sphincter muscle, and overlying tissues as in the previous cases; the sphincter muscle was cut, the skin tags were removed, the internal hemorrhoids were ligated, the patient was dressed as in the previous cases, and he felt comfortable throughout the operation, and after the operation he was able to sit down comfortably. He left the office,

not having experienced any pain, and called for daily after-treatment on his way from business.

Case VI. J. W., jeweler, aged thirty-eight years, complained of rectal trouble for the past ten years, his chief complaint being protrusions and itching, with occasional bleeding accompanying defecation, and moisture. He was also constipated, necessitating the use of cathartics. Examination revealed a fistula at the site of a previous fissure, which evidently had healed spontaneously, a focal point of infection remaining. An abscess formed, which opened, causing discharge moisture and itching, a pruritus due to the discharge, as well as skin tags. With a one fourth per cent. solution of quinine and urea hydrochloride, the parts were injected, the fistula was incised, the skin tags were removed, a strip of moist gauze was inserted for drainage, as well as to encourage healing by granulation instead of by primary union. He was operated on in my office, had no pain during or after operation, went about his daily routine of business, called for daily treatment to my office, and was well in three weeks. His pruritus was relieved by painting with a ten per cent. silver nitrate solution.

Case VII. H. Z., tailor, aged forty-eight years, called at the German Poliklinik, complaining of rectal trouble for the past three years; he noticed protrusions on and off with occasional bleeding. Three weeks ago after straining at stool, he noticed a protrusion which he could not reduce or return, hard in character, with severe pain lasting for three or four hours after defecation, followed by some bleeding. He was constipated, had a hard evacuation, and strained at stool. Examination revealed fissure and a thrombotic hemorrhoid. With a one fourth per cent. solution of quinine and urea hydrochloride the sphincter and overlying tissues were injected posteriorly, and a few drops were injected into the thrombotic hemorrhoid, the sphincter was cut, and with a curved bistoury the thrombotic hemorrhoid was incised, the clot turned out, a strip of gauze inserted for drainage, a dressing applied, and the patient went home, having felt no pain during or after the operation, and called every other day for treatment.

Case VIII. S. H., furrier, aged thirty-eight years, came to the German Poliklinik complaining of constipation for the past year, noticed hemorrhoids about eleven months ago, and was operated upon under local anesthesia of quinine and urea hydrochloride at that time and felt well. Two weeks ago, after a hard movement necessitating straining at stool, he noticed severe pain after stool lasting for three to six hours and also some blood. He was constipated, and the fear of this pain following defecation was so great that he was actually afraid to move his bowels. Examination revealed a fresh fissure; a one fourth quinine and urea hydrochloride solution was injected into the tissues overlying the sphincter, as well as into the sphincter itself, and the sphincter was cut. The patient felt no pain during or after the operation, went home from the clinic relieved, had a comfortable movement without pain the next morning, and continued with his work the day after the operation without any inconvenience whatsoever.

118 First Street.

WHY ELECTROTHERAPY CURES.

By Hiram H. Seelye, A. M., M. D.,
Daytona, Fla.

The timeliness for a paper on this subject was suggested by the reading of a very able article in a recent issue of the New York Medical Journal by Professor Albert C. Geyser, entitled, Why Electrotherapy Does Not Cure, in the concluding paragraph of which is the following statement: "Electrotherapy is understood by few, misunderstood by many, and underestimated by everybody." It is in order to promote a wider and more rational understanding of the workings of this powerful therapeutic agent that this contribution is offered.

Except for the comparatively few who have made a special study of electricity, the large majority of the otherwise well educated members of our profession have but a very vague and confused knowledge of the peculiarly reconstructive powers of electrical currents, more especially those of high potential, such as may be developed by a good static machine or an induction coil energized by the ordinary electric light socket connection. There is a widespread impression that because these modalities are something exploited by incompetent or irregular practitioners, who rely chiefly on the mysterious and suggestive effects to play upon the emotions of gullible patients, there is little of real value in their therapeutic properties. Not till convinced of the modus operandi of a remedy and the reasonableness of the claims made for it, will the average practitioner be induced to investigate it personally. It is only within the last few years that a minority of our large hospitals have installed efficient electric apparatus, and scarcely any of the medical schools are now instructing the young graduate in the curative properties of one of the most useful of therapeutic agents. The proverbial conservatism of our profession has undoubtedly delayed the recognition of the almost unbelievable statements made by those most experienced in this line, and it is only after years of reiterated evidence modestly and continuously put forth, that a few of the most progressive and unprejudiced have now adopted and recommended a more general employment of these modalities. It will not be long before he is regarded as ignorant and behind the times who maintains that these natural forces are not worthy of being included in the armamentarium of an up to date physician. True, it is only after the installation of expensive outfits with instruction and experience in their use, that one can become a competent exponent of these methods, and only in the hands of specialists will the best results be obtained; but this should not retard the study of the subject by the average doctor, so that he may be competent to refer appropriate cases to the specialist in this line, just as he now does in the branches of surgery, gynecology, nervous diseases, pediatrics, etc.

The first aim of this paper will be to elucidate the cause of the general tonic and reconstructive effect of the so called currents of high potential or voltage and high frequency or rapid oscillation, with low amperage or feeble flow of current. It should be understood that it is only where the flow of a large volume of electricity is forced through a small or constricted area that a destructive or injurious action takes place, that is to say, when both the voltage and amperage are high. But such currents are not used for therapeutic purposes, and the apparatus ordinarily employed is incapable of producing them. Hence the timidity of the uninitiated and the fear of accident from the use of such powerful forces are ungrounded.

To illustrate now the nutritional effects of these currents of large volume, let us consider for instance, the action of the "wave current" from a static machine. The person is insulated by sitting on a stool with glass legs, so that when the sliding poles of the machine are opened and his body is connected with one pole, usually the positive, and the machine is put in action, he at once becomes charged throughout with the same volume and

pressure of positive electricity as the corresponding pole of the machine of which he now forms a part. This may be with hundreds of thousands of volts, and as the electricity can escape only from all parts of the surface of the body into the air, every cell within and throughout the body is in a state of tension, with the positive pole directed toward the surface where it strives to unite with a negatively charged body. The stress being thus strongly outward in the elastic protoplasm of the cell, if now the tension is withdrawn suddenly, as will happen if the negative sliding pole is moved toward the positive till a spark passes, the cell thus emptied of its overload, recoils, accompanied by a mechanical action of its elastic tissue. But, as the machine still in motion instantly recharges the positive pole and coincidently every relaxed cell, the latter again elongates, to recoil as the immediately ensuing spark discharges it. As these accumulations and dischargings may be made to take place from a few to thousands of times a minute, it is seen what a violent mechanical action is set up in every cell composing every organ, tissue, and secretion in the body. We know that cell activity means increased functioning of an organ, and this is known as active metabolism, which, if not excessive, increases the nutrition of the part, and as all portions of the body are thus influenced to a greater or less degree, there is a coincident improvement in the general nutrition after treatments at proper intervals. Like any exercise of a mechanical nature, too prolonged activity will cause exhaustion, while shorter treatments, of, say, ten to twenty minutes daily, will prove invigorating and upbuilding. As no one would expect food or any kind of muscular exercise indulged in, however vigorously, only at long intervals, to be permanently beneficial, so only by regular daily electrical stimulation can a long debilitated body be built up into a healthy organism competent to retain its own vitality.

A further and more detailed exposition of the rationale of the effects produced in a living body by these high potential electric currents, may help the sceptical to an acceptance of their claims for recognition. It is now generally maintained, as proved by physicists, that every atom in the universe is composed of a group of inconceivably small electrically charged particles called ions, which are in a state of rapid vibration, and that every individual cell in a body is made up of groups of these atoms called molecules. Every cell in an organ therefore is a combination of molecules and atoms with electrical ions all in a similar state of vibration. The human body is thus an agglomeration of organs, each of which is composed of similar cells with an identical uniformity of vibrations and with the same electrical properties. In health all these organs retain their normal activity, while a loss or absence of this so called vital energy in some or all of the constituent cells means disease or death of the organ or tissue involved. Consequently, when any one organ fails properly to perform its normal function, it being in anatomical connection and in harmonious action with all the other organs, the activity of the constituent cells of these other organs is thereby sympathetically affected, their functions are perverted, and the whole body is thrown out of balance and the general health disturbed. Furthermore, as already described, every cell in every organ and tissue of the body being composed of a mass of more or less elastic and plastic material called protoplasm, this latter is constantly varying in shape and activity as it is influenced by outside forces and environment. When functioning it is motile and more or less active, and when quiescent, the organ of which it is composed is dormant or dead. Since then each protoplasmic cell in every organ is composed of electrically endowed ions grouped into molecules with positive and negative poles, therefore any alteration of the electric forces induced from outside sources will at once change the polarity of every molecule and cell in the body, and the intensity of these polaric reversions will depend on the force and frequency of the inducing electric energy. This is not a merely hypothetical assertion, for by delicate instruments the amount of electric energy stored in each atom may be measured, and the protoplasmic changes made by the alternations of the electric current may be noted under the microscope. When the electric interruptions are slowly made, the subject in the circuit may be acutely conscious of them, and it is only when the vibrations become exceedingly rapid, as when the high frequency currents are modified by the Oudin resonator, and in certain static modalities, that the brain becomes incapable of discriminating between them and there is a total absence of all sensation. That active function of all the tissues of the body is thus promoted is shown by the quickened circulation, the lowered blood pressure, the increased elimination of carbon dioxide, urea, and other products of metabolism, the inducing of local as well as general perspiration, the augmented intake of oxygen and ozone, and the feeling of mental refreshment and physical exhilaration that ensues.

These currents may be modified by altering the connections and diversifying the electrodes and modes of administration in accordance with the effect desired. By employing applicators of various shapes and material, they may be either pleasantly diffused or vigorously concentrated on, or over, or through, such parts or organs as it may be wished especially to influence. Wherever an electrode is locally applied, there the activity of the atomic electrons projected into the body will be greatest, and where a deep seated organ is to be specifically reached, it may be included between two superficially applied electrodes, when the electrical activity of those tissues in a direct line between the two poles will be greater than at any other part. This is forcibly shown when the method called thermopenetration is employed, by which the local temperature of the deeper parts may be raised several degrees. Circumscribed areas may be treated by focusing the activity on the special organ or part affected, and the absorption of effusions and the disorganization of neoplasms may be promoted. But however intensely localized the treatment may be, there can be no escape from a more or less general and constitutional effect, so long as no cell in the body can escape the universally diffused and modified electrical tension and vibratory activity. Though all the static modalities produce to some de

gree these beneficial effects, yet they may be progressively heightened with the augmented frequency of the oscillations and the increased energy of the immensely high voltage produced by step up transformers and resonators.

It follows that the higher the pressure the greater the stress on the enveloping walls of every protoplasmic cell, and the more rapid the discharges the greater the mechanical alterations in its structure. While these electrical oscillations may be forced up into the millions each second, and to the consciousness nothing seems to be taking place, yet experience proves that an active physiological process is set up, and renewed health and vigor follow the regularly repeated administration of these currents in dose and manner adapted to each case.

We know that disease of an organ or tissue is due to a loss or lowering of the vitality of some or all of its constituent cells. Recovery depends upon a restoration of the activity of these enfeebled cells so that they may reproduce a more vigorous progeny, which in turn generate others of a higher order, till at length perfectly normal tissue is made to replace the diseased. And this is just what takes place when these penetrating electric currents stimulate to new life those degenerated cells of lowered vitality that otherwise would only reproduce tissues of a lower grade, while they raise the germinating activity of the already healthy adjacent cells to replace those that disease has destroyed and eliminated. So in certain cases of necrosis and loss of a part of a structure or organ, it is possible even to replace it with normal, tissue forming cells till all trace of the lesion is removed.

Were the main object of this paper other than merely to point out the reason for the remarkable tonic and reconstructive properties of high tension currents, applicable chiefly in cases of general or nervous debility, lowered vitality, anemia, and in such organic degenerations as are manifested in Bright's disease, diabetes, consumption, disorders of the digestive tract, etc., much more might be said as to their curative effects in a vast number of other local disorders and functional disturbances, where special modalities used in special ways with appropriate appliances in the hands of an experienced operator may result in the most unexpected recoveries.

It seems unnecessary here to go more than superficially into the explanation on parallel, though somewhat modified, lines of the physiological action of the older and better known so called faradic or indirect, and galvanic or direct currents. The former, having little voltage, are not generally diffused throughout the whole body, but follow the lines of least resistance on the surface between the two poles, and produce little other than a mechanical vibratory effect mainly exerted on, or adjacent to the parts to which the electrodes are applied. The latter also follow the lines of best conduction between the poles, are not generally diffused, but being of chemical origin and most readily following the best conductors of electricity, which are the metallic elements and liquids containing chemical salts, the circulatory and lymphatic or glandular fluids of the body, holding in solution more or less of these, act as conductors between the two electrodes, the flow being from the positive to the negative in the most direct line. As the whole interior of the body is bathed in these fluids, the organs or tissues included between the applicators are thus to a slight degree subjected to cellular tension as with currents of higher voltage, and the making and breaking of the flow will likewise induce a certain degree of protoplasmic mechanical activity. But these currents, unlike the static, faradic, or induced, have the additional property of exerting a chemical action on the tissues they traverse, which is most pronounced at the points of contact of the electrodes, and it is by reason of this property that they have certain special uses. Their therapeutic effect may be destructive as well as constructive. Electrolysis is an agency inducing a chemical change in the tissues in contact with the electrodes, at and near the positive a constrictive drying up and sedative effect, and around the negative a breaking down liquefying and irritative action, both gauged by the amount of current passing as measured in milliamperes. Cataphoresis is the electric forcing of metallic ions or of chemical agents in their atomic state into the tissues and fluids of the body, where their peculiar therapeutic effects are desired. We will omit any further consideration of this branch of the subject, as it is clearly explained in all modern electrotherapeutic treatises.

In conclusion, it may be said, when competent educated and experienced observers make claim for such exceptional therapeutic properties in a so little understood force as electricity, is it the part of a judicious and honest professor of the healing art to ignore and condemn such measures in advance of an exhaustive investigation of their claims as expounded by those for whose opinions he should have respect? Bigotry and narrowness should be banished from the minds of the earnest investigator, and the educators of our prospective exponents of the science of therapeutics. He only is a progressive physician who will study, test, and use for his humanitarian purposes every discovery and device that advancing knowledge brings to his attention. If, as some scientists say, "electricity is life," the study of how to adapt this vitalizing element to the promotion of longevity should not be so neglected by advanced physicians.

BRACHIAL NEURITIS.*

Diagnosis and Successful Treatment.

By Joseph F. Harris, M. D.,
New York.

In presenting a few observations on brachial neuritis, I beg leave to recall that the differential diagnosis between this and a true neuralgia is usually very difficult, and as brachial neuralgia in itself is a rare condition, and the symptomatology of the two diseases is practically the same, I consider the former to be a true disease and the latter merely a symptom, inasmuch as they both yield to the same therapeutic agent.

Usually there is no one nerve affected more than

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another, but the musculospiral, ulnar, and internal cutaneous seem to be the three most frequently involved. The cases that were observed were those that came for treatment to the Neurological Clinic at Mount Sinai Hospital Dispensary, and the first forty patients were selected. Of this number sixty per cent. were women and no one etiological factor could be definitely established. It was exactly the opposite with the men, as their occupations in nearly all cases seemed to be the predisposing cause. Tailors, pressers, iron workers, waiters, violinists, packers, and elevator men comprised the list.

Pain is the most prominent symptom, and most authors tell us that it is distributed vaguely. However, in the cases seen, pain was most severe in the plexus itself and this with hardly an exception. The pain may be spasmodic or constant, but it is sure to be extremely severe at night and of such a character that sleep is impossible. During the day, the patients complained of a dull, wearying pain in the shoulder which was relieved by holding the arm up or resting it upon something. Nearly every male patient had to give up his position on account of an inability to move the arm freely. Although some patients could raise their arms, it was practically an impossibility for the majority to place their arms behind them. This movement always gave rise to excruciating pain. Traction on the arm was also an immediate producer of pain.

Very often tender points are found along the course of the nerve, such as the musculospiral where it passes over the upper arm, and the ulnar at the elbow, but this is common only in cases where there are numbness and paresthesia in the hand. Among the women it was found that paresthesia in the fingers was common, and this they described by saying that it felt like pin pricks. In about forty per cent. of the cases treated, diminished sensation, corresponding to the distribution of the affected nerves, was found. In only two cases was complete anesthesia determined, and these were of traumatic origin. Hyperesthesia was found in only two or three cases, less than one per cent. A characteristic symptom in all the cases, of which I have found no special mention made in literature, was a marked tenderness on pressure over and just to the inner side of the coracoid process of the scapula where the main trunk of the plexus passes on its way to the arm. Even in cases where motion was not limited, this point of tenderness was present. My attention was first called to the persistence of this symptom by Dr. I. Strauss.

In a very small percentage of cases the muscles of the affected arm became flabby from disuse, but no electrical reaction of degeneration was found except in one case. This patient was a woman, aged thirty-one years, housewife by occupation. She came to the dispensary giving a history of having caught cold five weeks before, which settled in her right shoulder. She immediately lost her ability to move the arm. Pain was a prominent symptom, of an excruciating type. The deltoid appeared to be paralyzed, but responded perfectly to electrcal stimulation, both faradic and galvanic. Three weeks after her first visit the electrical reactions of degeneration were found. It was not until eight weeks after her first treatment that the normal electrical reactions in the deltoid returned, but this was followed by a loss of power in the thumb of the right hand. Three months later, or five months after her first treatment, slow, complete recovery set in. This was the only case seen in which electrical changes were found. The treatment given in this case and others I will shortly discuss.

Our experience in dispensary practice has been that a great number of cases have been treated by the surgical department for some time before they are sent to the neurologist. Here various diagnoses have been made, such as bursitis, periarthritis, strained shoulder, and subluxation. It is not until massage, baking, and strapping have failed to cure that they finally are sent to the neurological department. I think it only fair to mention, though, that in two cases, periarthritis was present and was the predisposing cause. Although I have frequently seen references made to skin changes in neuritis, in none of the cases treated was there any dermal condition noted. Muscular atrophies were also rare, being present in less than one per cent. and these were of traumatic origin. In these there was no electrical reaction of degeneration, and the wasting evidently was due to lack of use of the parts. For the most part, the patients who complained of inablity to move their arms failed to state that it was due only to the fact that such movements gave rise to great pain and therefore they allowed the arm to remain in a constant state of rest, thereby causing stiffness of the joint and wasting of the muscles. One case was seen in which impaired motion was the first and only symptom.

CASE. S. F., male, aged fifty-five years, on admission stated that two months before he had carried a very heavy bundle and a few days later was unable to raise the arm. It was not until two weeks after this that he complained of pain. On examination he was found to have paresthesia in the fingers, tenderness over the coracoid process, no reaction of degeneration, but some atrophy of the deltoid. This case stood alone as being the only one seen in which pain was a late symptom. Two months after treatment began, the pain ceased and ability to raise the arm was restored. The diagnosis of brachial neuritis was therefore made on the following symptoms: Continuous character of the pain, tenderness over the plexus and nerve trunks, hypoesthesia or hyperesthesia, occasionally anesthesia corresponding to the area of distribution of the affected nerve, muscular atrophies, with or without the electrical reaction of regeneration, and weakness of the affected arm.

Both Oppenheim and Gowers in their textbooks state that the boundary line between brachial neuritis and neuralgia is difficult to determine, and that a true neuritis is often taken for a neuralgia. Oppenheim's view is that tumors alone may simulate this condition, but usually the symptoms are then bilateral.

TREATMENT.

The average duration of this disease is usually given in textbooks as from three to eighteen months, and the treatment suggested consists of electricity, nerve stretching, counterirritation, immobilization, mild daily passive movements, slight massage, and some internal medication. I will not dwell upon these agents, for I believe that they have all been used with more or less success, but I wish especially to speak of the one remedy with which the promptest and best results were obtained. I have reference to the high frequency current. All

the cases treated in the dispensary were given applications of the Oudin current by means of a glass vacuum electrode. These treatments were of ten minutes' duration and given three times a week. The electrode was passed slowly from the plexus to the finger tips and back again for the period of time stated. No internal medication was advised, with the possible exception of a mild tonic laxative. The results were astonishing. Relief was obtained in many cases at the end of the first week and in the majority a complete cure was established in one month. The patients often remarked after the first application of the current that the arm felt "looser," that the sense of tightness had been relieved. The only form of the disease which failed to yield to the current was one of diabetic origin, and here we were able merely to alleviate the pain for a short time following each treatment.

It was found that if the electrode was held in one position for any length of time, the skin became extremely sensitive, so much so that the next application became very painful, hence the employment of the slow, massaging application of the entire arm. Treatment should never be given through an intervening garment, but always upon the bare skin, for burns may result, and in one instance reported to me, a lady's silk waist was destroyed by a circular piece of sleeve dropping out.

In private practice I have found that the use of wet hot applications for one hour, following the high frequency treatment, has been quite advantageous, but only when used within a few hours. The duration of this disease in private practice in which the high frequency current is used is even shorter than that in the dispensary, for patients are able to take a daily application of electricity, which after all is the most desirable method of treatment. Only recently I heard of the case of a dentist who was suffering intense pain and difficulty in raising his arm. By means of a daily treatment with the current he was able to continue at his office until in due time a cure was effected.

My slight experience with this disease, therefore, has brought me to one conclusion, viz., that a condition commonly regarded as aggravating, painful, and tedious, yields in a comparatively short space of time to an agent which is easy to administer, painless to the patient, and absolutely harmless, i. e., the high frequency current.

One West Ninety-second Street.

ACUTE DILATATION OF THE STOMACH COMPLICATING PREGNANCY.

By N. P. Thompson, M. D.,
St. Louis.

Since reading Dr. E. H. Goodman's report of cases of acute dilatation of the stomach, complicating pneumonia, I have concluded to report a case of the same trouble complicating pregnancy at about the eighth month. The history of the case follows:

Case. I was called at 6 a. m. to see Z. K., married, aged twenty years, primipara. Found her walking around room, complaining of some pain in lower abdomen and severe pain in back over sacral region.

She stated she had eaten a hearty supper about 6 p. m., retired at about 10:30, feeling perfectly well, but was awakened about 2 a. m. with pain as stated. She had arisen from bed and walked the floor most of the time until my arrival.

Physical examination: Hands and feet cold; no edema; face had slight bluish cast; features not drawn; respirations not accelerated; pulse 88, volume fair. Patient was very restless, but her mind was clear and she complained of no thirst. Vagina was normal; neck of uterus about one half inch long; quite firm with no dilatation.

Prescribed laxative and nerve sedative with instructions to call me if there was any change in patient's condition. About 11 a. m., her husband telephoned patient's condition was about the same; at 4 p. m. he stated her condition was again the same with the exception that she had vomited a large quantity of clear, dark colored liquid and was suffering more pain in abdomen. Called at 4:30 p. m. and found patient complaining of severe pain in back and abdomen, accompanied by slight uterine contractions. Her extremities were cold and the features drawn, pulse not perceptible at wrist; respiration fifty; temperature 96° F., under tongue; mind clear; complaining of severe thirst.

Extending from costal arch downward and overlying gravid uterus on both sides was a large tympanitic tumor, consisting of the dilated and distended stomach. The os uteri was slightly dilated, admitting index finger; membranes intact.

As the patient was evidently in a state of collapse, her husband was dispatched for a consultant. I hastily gave her a hypodermic injection of strychnine nitrate, 1/40 grain, and lowered her head. As I did so, she began to show signs of nausea, and upon lowering her head over the side of the bed, a large quantity of dark colored fluid ran from the mouth and nose and she expired almost immediately.

A post mortem examination was asked for, but refused. However, on the following day I was requested to remove the child. In company with two other physicians I opened the abdomen; the uterus was found intact and normal, containing a well formed child almost at full term; the membranes were intact and normal.

A superficial examination was made of the abdomen and its contents. At the splenic flexure of the colon, there was a ruptured bloodvessel within the lumen of bowel, the hemorrhage from which had almost completely filled the colon, extending backward through cecum, filling ileum and jejunum to duodenum, there being no free blood in duodenum or stomach. The stomach was very much dilated.

The only explanation we could offer for the apparent backward traveling of the hemorrhage was the complete relaxation of the intestine with absence of peristalsis, allowing the blood to gravitate, or a reversed peristalsis.

In other respects the abdominal contents appeared to be normal.

Query.

What is the cause of acute dilatation of stomach? Is it due to lack of elimination by the kidneys? Is it due to the direct action of kidney toxins on nerve or brain centres, or is it indirect through destruction of the fine balance between the secretions of the ductless glands, the suprarenal especially? Is not acute dilatation of the stomach accompanied by acute dilatation of all hollow viscera, heart and bloodvessels included?

3108 Cass Avenue.

IN MEMORIAM DR. EDWARD CHARLES SPITZKA.*

By Nathan Edwin Brill, M. D.,
New York.

By the death of Dr. Edward Charles Spitzka, medical science has lost one of its most brilliant votaries, and the New York Neurological Society one of its oldest and most productive members. In the early history of the growth of this society, he contributed more to make it a permanent success than any other single member.

He was born in New York city on November 10, 1852. His father, a most skillful maker of watches, clocks, and instruments of precision, a man of broad attainments and large reading, was early involved in the Revolution in Germany in 1848, whose cause he actively espoused, and on account of which he was compelled to flee. He emigrated to America with the large number of similar refugees. In him prevailed a stern and strict sense of justice and of personal liberty, which was transmitted to the son. Shortly after his arrival in this country with his wife, the son was born. The parents realized the advantages of the system of public instruction of that time and sent their boy to the most famous, perhaps, of the New York public schools, No. 35, whose principal was the well known Thomas Hunter.

The son made rapid strides in his studies, and at a very early age entered the College of the City of New York. He also early manifested the same voracious appetite for reading which characterized the father, and readily acquired a large amount of general knowledge. He soon evinced a definite preference for the natural sciences, and became especially interested in the subjects of biology, geology, and palæontology. Whatever information he could acquire from books on these subjects, he did acquire. These studies so fascinated him that he determined to take up the study of medicine. With this in view, he became a student in the medical department of the University of the City of New York. Even while pursuing his medical studies, he kept up his reading in the subjects previously mentioned. Thoroughly acquainted with everything written by Darwin, Wallace, Huxley, Spencer, and Tyndall, he was requested by his classmates to give them a lecture on the subject of Evolution, to which he readily assented, much to the delight and edification of his classmates, though little to that of some of the members of the faculty.

After his graduation from the medical school, he went abroad for the purpose of further study. He proceeded to Germany and settled in Leipsic. There he came under the influence of Wagner, von Coccius, His, Wunderlich, and Thiersch. Even while studying medicine in Leipsic, he found time to pursue further his work on history and philosophy. After leaving Leipsic he went to Vienna, where he met the man who had the greatest influence in determining his future career, namely, Meynert. Under that most renowned anatomist and psychiatrist, he accumulated a wealth of anatomical, physiological, and pathological knowledge, which became the foundation of most of his subsequent claims to fame. In some respects, Spitzka resembled his great teacher and master, Meynert, especially in the possession of a vast fund of general information, and particularly in a thorough acquaintance with the facts of comparative anatomy, in which the pupil was as well informed as the master. While in Vienna he also became interested in the subject of embryology, human and comparative, the study of which he followed under Professor Schenk, who, recognizing the worth of his scholar, appointed him, with the consent of the authorities of the university, an assistant to the chair of embryology. Spitzka remained abroad three years in all, during which time he had not an idle moment, after which he returned to the city of his birth.

Shortly after his return, in 1875, he began the collection of whatever neurological, pathological, and anatomical material he could obtain, chiefly from the public and private asylums of the city and its environs, and commenced the anatomical, neurological, and psychiatrical investigations, for which we honor his name.

About this time he joined the New York Neurological Society, and became one of that coterie of pioneers of neurological science in New York, among whom were Seguin, General William A. Hammond, and Thomas A. McBride as active workers. He not only contributed to the scientific programs of this society, but gave the results of those investigations in neuroanatomy, in clinical neurology, and in psychiatry, through which he has secured for his name a lasting place in the history of those sciences. This period marks the beginning of his greatest discoveries.

His was a dominating, overpowering personality. Endowed by nature with an unusual capacity for work, gifted with the most extraordinary powers of analysis, possessing a memory so retentive that it seemed almost supernatural, for nothing he had read was ever forgotten, and, in addition, fluency of thought and facility of speech, he was equipped with advantages the like of which are seldom possessed by any single individual. To these attributes was brought an exceptionally creative and vivid imagination, which suggested and initiated a great deal of the work of his active mind. It is easily conceivable how endowments of this nature result in abundantly productive creative work; therefore it is not to be wondered at that the productions of his pen were varied and numerous. His facility in writing even eclipsed the ease and fluency of his speech. He did not permit fatigue to limit the amount of the work which he had outlined for himself; and he used his physical powers, which he did not spare, to their utmost extent, even to the limit of exhaustion. He was a seeker after truth, and was content with investigations only after they had satisfied all of the requirements of established facts, logic, and pure reason.

He was interested in many fields of human thought and knowledge and generously contributed to both. Nobody, except those who had been intimate with him, could realize the extent and breadth of this knowledge. Possessing the use of many languages, thoroughly acquainted with his-

*Read at a meeting of the New York Neurological Society, April 7, 1914.

tory, knowing the literature of the people whose languages he spoke, expert in all the branches of biological science, he was easily one of the most versatile members of the medical profession. This versatility shows itself in his writings, which embrace the departments of history, biology, palæontology, criminology, forensic medicine, and neurology, including neuroanatomy, neurophysiology, neuropathology, and psychiatry. Possessed of unusual powers of thought, equipped with a wealth of general knowledge almost encyclopedic in its diversity and extent, he gave his best to the advancement of neurological and psychiatric science.

His work will be judged by medical men chiefly on account of his contributions to the last mentioned subjects. These contributions to medical sciences were numerous, many containing original discoveries and new viewpoints. His published writings in these subjects alone number over two hundred, as far as I have been able to gather them. For the sake of assisting in the preservation of his labors, I have listed his discoveries in biological science; these will be found at the end of this memorial.

It is rather difficult to decide whether neurology or psychiatry is the greater gainer by his work, because he was a valuable contributor to both. He gave to each many new conceptions which, without doubt, tended to advance our knowledge. In neuroanatomy his name will be perpetuated by his discoveries and it will live as long as the science, for it owes more to him than to any other individual in America. The same may be said also about his relation to psychiatry; he was a pioneer who placed it, in this country at least, on the plane of a true science. In its dissemination he brought to bear all the clinical experience which he had accumulated in Vienna under Meynert, under whom he had worked for a considerable time. When he left the inspiring and forceful influence of his teacher, he was indebted to him for much of the intimate knowledge, as far as was then known, of the mechanism of the function of the brain in health and disease. He was also the first to introduce into America an adequate conception of the scope of a true psychiatrical science. Up to that time, the study of mental disease in this country was based on an empirical foundation for the most part; the pathological basis of the subject was but imperfectly known or even studied in general. It was to his influence that the more serious study of the subject was taken up. Asylum superintendents, especially, were indebted to him for turning them aside from preconceived notions, and for instructing them in methods by which they might acquire more useful knowledge of mental disease. He very soon after his return came to be recognized as a force and factor for progress in both neurology and psychiatry. It did not take long before his reputation became national, owing in some measure to the fact that the trial of the assassin of President Garfield was then imminent. This murder of the President of the United States had stirred the country to the greatest depths of emotional fury. There was an almost universal cry for the sacrifice of the assassin, Guiteau. Spitzka, with a courage which was the result of a nature which could not support falsehood, and convinced that the murder was the work of an insane man, did not hesitate to give his testimony to that effect. Arrayed against his opinion was that of most of the so called experts of that time. Nothing daunted, he testified to the truth as he saw it, a truth which time has finally firmly established. This event in his early life—he was at that time only twenty-nine years old—is mentioned because it indicates his most dominant characteristic—the desire for truth, no matter what the consequences. One can imagine the courage he possessed when one becomes acquainted with the fact that his life was threatened, and that he received letters warning him if he gave testimony to the effect that Guiteau was insane, his own life would be sacrificed.

The great influence which he exercised in the field of psychiatry was best shown in his book, *A Manual of Insanity,* which went through two editions. It became the textbook of many of the teaching institutions of this country, representing the standard of the advanced psychiatric knowledge of the time. It became the *vade mecum* of many of the asylum superintendents, and it established his position among that body as an independent and truly scientific observer. The book embodied the study of all the large amount of pathological material which he had collected. Part of this had been previously used by him in the preparation of an essay, which had earned for him the W. and S. Tuke Prize, given through the British Medico-Psychological Association, and which had been open to international competition. This essay was entitled, *The Somatic Etiology of Insanity.*

No estimate of the worth of Spitzka would be complete without the mention of the overpowering personality of the man. Everybody who came within his influence immediately recognized that he was in the presence of a man of unusual force and power of mind. The very fluency of his thoughts, each following the other with marvelous rapidity, embodying many striking generalizations, kept the attention of the hearer riveted to the man. Each spoken thought suggested another to his mind, all of which were well expressed in choice diction, and all were worth listening to, for very little that Spitzka said was valueless. These two unusual attributes of mental power, namely, the control of all his information so pigeonholed in his mind as to permit of ready generalization, and secondly, the suggestiveness of his thoughts, were the most characteristic, perhaps, of the mental organization of Spitzka. They were certainly remarkable gifts and endowments which stamped him as belonging to the rare personalities of the race.

Among Doctor Spitzka's original discoveries were: 1. The Inter-Optic Lobes of the Iguana. 2. The Identification of the Hitherto Unrecognized Post-Optic Lobes in Birds and Mammals. 3. The Spinal Course of the Cortex-Lemniscus in Man. 4. The Marginal Tract (described one year later by Lissauer; known as the Spitzka tract and as the Spitzka-Lissauer tract). 5. The Auditory Tract in the Cetacea. 6. The Superficial Decussation of the Pyramids in Pteropus. A bibliography of his numerous writings would be too lengthy for publication here.

Those who knew him will ever testify to his

strict sense of justice, to his undeviating pursuit of truth, to his contempt of falsehood and of all sham. He could not brook hypocrisy in any guise, and with powerful invective attacked all those who attempted to foster it. Let us remember him for his many sterling qualities and for his exceptional ability, and bear tribute to his memory by adopting the following resolutions:

Resolved: That the New York Neurological Society has learned with great sorrow of the death of its member and former president, Dr. Edward Charles Spitzka;

That it desires to place on record the expressions of its appreciation of the very great value of the services rendered by him to the New York Neurological Society and to medical science, especially to neuroanatomy and to psychiatry;

And therefore it orders that a minute of this resolution be inscribed on its records, a copy of it sent to the medical press, and a copy to the family of the deceased.

48 WEST SEVENTY-SIXTH STREET.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXLV.—How do you treat alcoholic cirrhosis of the liver? (Closed.)

CXLVI.—How do you treat scarlet fever. (Answers due not later than May 15th.)

CXLVII.—How do you treat tetanus? (Answers due not later than June 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The Prize of $25 for the best essay submitted in answer to Question CXLIV was awarded to Dr. Thomas J. Tuder, of Keokee, Va., whose article appeared in this issue.

PRIZE QUESTION NO. CXLIV.

THE TREATMENT OF DIPHTHERIA.

(Continued.)

Dr. William Lapat, of New York, observes:

The treatment comes under the following heads: 1. Prophylactic; 2, treatment of patient, *a*, specific (antitoxin); *b*, local; *c*, general; *d*, operative.

1. *Prophylactic.*—The patient should be kept isolated in a large room from which all unnecessary articles of furniture have been removed. This room should be well aired daily. The discharges from the nose and throat should be kept three hours in a solution of eight ounces of carbolic acid to three gallons of water. Table articles should be kept in this solution before washing and the physician and nurse must wash in this solution after handling the patient and before eating. A long gown should hang just outside the door for their use. The nurse is to be given 1,000 units of antitoxin as a prophylactic dose. The patient is to be kept isolated until the bacteriological report is negative.

2. *Treatment of patient. a.* Specific treatment.—There can absolutely be no question of the efficiency of antitoxin in this disease. Great stress must be put on the importance of giving it early in its course. If there is any doubt as to diagnosis, give it before you get the bacteriological report, as it will not do harm if the report is negative, and if positive the gain of twenty-four hours will often prevent complications. In the mildest cases not less than 4,000 units as an initial dose should be given. In severe cases 6,000 to 8,000, while in the malignant cases 10,000 units is a rational initial dose. If the symptoms increase, repeat the dose within twelve hours, and if they remain at a standstill repeat in from twenty-four to thirty-six hours. An ordinary hypodermic syringe which has been sterilized can be used. The site of injection can be washed with tincture of green soap or painted with iodine. The best place of injection is the skin of the abdomen or that of the thigh.

b. Local treatment.—Irrigation of the nose with a pint of normal saline twice daily; the child should be tied with a sheet, laid on its side, a mouth gag inserted, and a fountain syringe used. The fluid runs in one nostril and out the other. A number of applications of hydrogen peroxide to the membrane will have a decided affect on breaking it up. If the application cannot be used, a spray of two parts of peroxide to one of water acts almost as well. For the inflammation and congestion the following is excellent:

℞ Ichthyolis, ... 8.0 grams;
Olei anisi, ... 0.2 gram;
Aquam anisi, ad..... ..... two grams.
M. Sig.: Shake well and use as a spray every two hours.

c. General treatment.—This should be carried out as in any acute infectious disease. The urine must be examined daily for degenerative changes and the pulse watched for signs of cardiac failure. The most nourishing and easily assimilated foods should be given. Infants are to receive cow's milk modified as to their age and condition of the intestinal tract. Adults may have sour milk, milk, matzoon, fermillac, zoolak, cocoa, soups, broths, beef tea, soft eggs; one should be guided by the condition of the gastrointestinal tract and by the temperature whether the diet should be soft or liquid or whether all food should be stopped by mouth and patient fed by rectum. In paralysis of the palate where we get cough and regurgitation we must feed through the nasal passages with a soft rubber tube.

The bowels should be opened at the onset with calomel, and the patient must have at least one evacuation a day. When there is great prostration and the pulse is feeble, give alcohol, in the form of whisky or brandy one ounce, to a child five years old, in twenty-four hours. Digitalin may be given to raise the blood pressure, grain 1/100, three times

daily, to a child eight years old. If stimulation cannot be taken by mouth, give strychnine, grain 1/80, three times a day by hypodermic injection. Except for stimulation and the treatment of the various complications, it is better to give as little medication as possible.

d. Operative treatment.—Since the advent of antitoxin, intubation or tracheotomy is seldom necessary. Intubation is indicated when we see by the labored breathing and the general symptoms that there is a stenosis of the larynx; tracheotomy, when we have no tubes or if the stenosis is so great that a tube cannot be passed.

Dr. Arthur L. Fuller, of Colorado, Texas, states:

The first aim in the treatment of the case in hand, viz., neutralization of the toxin, prevention of further growth of the bacilli, and supporting the patient's resistance; calls for attention to the patient's comfort and surroundings, supporting diet, stimulants when necessary, and the administration of antidiphtheritic serum, combined with local treatment to destroy the membrane and disinfect the site of its growth, thus minimizing the chances of other infection occurring. The sick room should be airy and well ventilated, its temperature kept fairly even at about 65° F., and if possible so placed as to admit plenty of sunlight; the diet should be chiefly milk until no membrane remains and the pulse is less than 100, when stronger diet may be allowed, such as eggs, toast, soups, etc., increasing as convalescence progresses. Plenty of drinking water should be allowed, and if not asked for, given at regular intervals, this being one of the best means of minimizing renal complications. The position of the patient should be changed by the nurse, no effort of the patient being allowable, and the bedpan used for evacuations, any voluntary movements of the patient adding to the strain on the heart. The urine must be tested daily, and any increase in albumin met by reduction to strict milk diet. The patient should be confined to the bed for not less than ten days or two weeks even in the mildest case, and in the more severe cases for three weeks or longer, too early removal to a chair frequently causing acute heart failure.

As regards medical treatment, there is only one opinion, the administration of antidiphtheritic serum being our sheet anchor, not only as an antitoxin but as a bactericidal agent; though in cases which have been allowed to run on two or three days without treatment, it may become necessary to supplement it with stimulants, and such other supporting treatment as may enable the heart to stand the strain until the toxemia is overcome.

While there is no question as to the use or nonuse of antidiphtheritic serum, there are several questions involved in determining its dose in any given case; the most important of these are the site of the membrane, the duration of the disease before treatment, constitutional symptoms, and age of the patient. Of these the location of the membrane is in my opinion the most important, and the order of the sites as indicating amount of dose is, I consider, 1, the nasopharynx; 2, the larynx or trachea; and, 3, the oropharynx. The first of these calls for large doses and prompt repetition, in the absence of rapid improvement, since absorption from its surface is very rapid, and great prostration is usually present (this is usually attributed to rapid absorption of toxins from a large area peculiarly adapted to such absorption, but I often think it is perhaps due to later diagnosis, such cases often being looked upon as a rhinitis for a day or two, and neglected until severe constitutional symptoms appear), the dose I usually give in these nasopharyngeal cases being from 8,000 to 12,000 units immediately, giving 5,000 units additional every five or six hours, unless there is some improvement in the general symptoms, and the tendency of the membrane to shrink or diminish in size. I am satisfied it was only the exhibition of massive doses which saved my own child when, at the age of six years, he suffered from diphtheria, the nasopharynx being the locality of the infection; for, after becoming comatose two hours before any symptoms developed, there being no membrane on the tonsils or palate, he remained unconscious thirty-six hours, during which he received 35,000 units of the serum before any improvement appeared, this being followed by rapid gain with no untoward complications or sequels. In children over one year old I do not think 12,000 units is in any way an excessive dose, for these patients are so early overwhelmed by the rapidly absorbed toxins that there is no time to lose, not only in overcoming the profound existing toxemia, but in preventing the further production of toxins by destruction of the bacilli.

The second site of the membrane mentioned, the larynx and trachea, calls for equally prompt and energetic administration of the serum, but for a different reason; the necessity of hastening the disappearance of the membrane, and preventing the attendant obstruction of the air passage, or removing any already existing obstruction, being the prime indication. The initial dose in laryngeal cases should, therefore, be from 7,500 to 10,000 units, repeated if failure to improve occurs, in a few hours, which should be increased if the pharynx is also involved, adding increased toxemia to respiratory obstruction.

The location of the infection in the oropharynx, being more easily watched, offering a less absorptive surface to the toxins and causing no respiratory obstruction, calls for less massive doses, since the progress of the disease may frequently be terminated by smaller ones combined with local treatment, which, in this location, is more easily carried out. The membrane at this site must, however, receive frequent examination, in order that any tendency to spread into the nasopharynx or larynx may be promptly detected, and met by increased doses of the serum and local treatment tending to restrict its growth. I, therefore, in these cases, usually commence with 5,000 units, carefully watching the patient and repeating or increasing the dose if it appears necessary.[1]

[1]Among the essays submitted for the prize this month were many of striking excellence, which we do not publish because they would merely duplicate what has already appeared. Prominent among these were the contributions of Dr. M. L. Mallory, of Kenmore, N. Y.; Dr. Ben N. Wade, of Portland, Ore.; Dr. Gustave Brown, of New York; Dr. N. Cimaduomo, of New York, and Dr. Louis Weiss, of Newark, N. J.

Therapeutic Notes.

Treatment of Pyogenic Tuberculoid Skin Lesions.—H. Gougerot, in *Paris médical* for September 13, 1913, discusses the diagnosis and treatment of papulopustular skin lesions, closely resembling those produced through local tuberculous infection, but in reality of pyogenic origin and more properly to be termed ecthyma, impetigo, or folliculitis. They are met with at all periods of life, especially on the lower extremities. The ulcers, like the true tuberculous form, show violet colored, irregular margins, drag on for weeks, and often coexist with pallor and more or less emaciation of the patient. The lesions differ from the tuberculous, however, in developing in a short period—four to ten days—sometimes presenting a distinct "acute" stage, and being accompanied by ordinary pustules characteristic of pyogenic infection, which themselves will later become "tuberculoid."

The first measure of treatment is to cause the crusts to fall off by moistening them with a spray of boiled water or one in 200 resorcinol solution, or with wet gauze compresses. After this, an application of the following solution, either as such or diluted with an equal part of boiled water should be made for one minute three times a day:

℞ Zinci sulphatis, ...gr. xxx (2 grams);
Cupri sulphatis, ...gr. xv (1 gram);
Alcoholis, ...ʒiss (5 grams);
Camphoræ, ...gr. viii (0.5 gram);
Aquæ destillatæ, ...ʒx (300 grams).
M. et ft. solutio.

As soon as this has dried a zinc ointment or cream should be applied:

℞ Zinci oxidi, ...gr. xlv (3 grams);
Aquæ rosæ, ...ɱlxxx (5 grams);
Adipis lanæ hydrosi, ...gr. lxxv (5 grams);
Petrolati, ...ʒv (20 grams).
M. et ft. unguentum.

The limb should be wrapped in dry dressing of cotton wool, dusted with:

℞ Talci, ...ʒiii (90 grams);
Sodii boratis, ...ʒiiss (10 grams).
M. et ft. pulvis.

If the lesions return, the zinc oxide ointment should be replaced by one of calomel, one part in ten, and the nascent pustules opened with a sterilized needle and cauterized with a drop of iodine tincture.

When the skin is beginning to clear, the treatment may be simplified by merely applying the calomel ointment—or the zinc ointment, if the former is irritating—over night and protecting the lesions with round pieces of zinc oxide plaster.

If healing is delayed, as is often the case, the use of the zinc and copper solution should be continued and the following ointment, recommended by Sabouraud, applied:

℞ Ferri subcarbonatis, ...gr. xv (1 gram);
Petrolati, ...ʒx (40 grams).
M. et ft. unguentum.

Occlusion of the fundus of the ulcers by this ointment may be overcome by cleaning them out with oil of sweet almonds. The zinc and copper solution should be stopped as soon as cicatrization commences.

At the beginning of the treatment rest of the involved limb is to be enjoined, but later, while the iron ointment is being continued, the patient may be allowed to walk and even resume his ordinary occupation, the area being merely protected by a dry bandage or pieces of zinc oxide or diachylon plaster. Outdoor life and exercise are desirable if circumstances permit. Medicinal treatment should consist of the administration of iodine, calcium, and arsenic.

Preventive treatment is of capital importance, as recurrence is the rule, and should include gentle rubbing with camphorated alcohol (ten per cent.) every morning, followed, after drying, by a dusting with one of the subjoined powders:

I.

℞ Talci pulveris, ...ʒiii (90 grams);
Sodii boratis, ...ʒii (8 grams);
Acidi borici, ...ʒss (2 grams).
M. et ft. pulvis.

II.

℞ Talci pulveris, ...ʒiiiss (99 grams);
Acidi salicylici, ...grs. xv (1 gram).
M. et ft. pulvis.

New vesicles should be watched for daily, and as they appear, cauterized morning and evening with a matchstick dipped in tincture of iodine, or, if they develop into pustules, opened at once with a needle sterilized in a flame, expressed, and cauterized repeatedly with iodine tincture until even the succeeding induration has completely disappeared. These measures are almost always adequate. If the lesions recur, heliotherapy should be resorted to, the patient exposing the area to direct sunlight, beginning with fifteen minutes, then increasing daily by five to ten minutes until two or three hours' exposure is finally reached. The patient's head should be protected during these exposures. "Tanning" occurs at the diseased area, suppuration being aborted and failing to return.

Treatment of Hiccough.—F. H. Mead, in the *Medical Record* for January 10, 1914, reports a case of persistent hiccough in a febrile patient with dilated stomach, enlarged prostate, and interstitial nephritis, in whom, after peppermint water, morphine and atropine, chloretone, and mustard had failed or brought only temporary relief, administration of a saturated solution of menthol in alcohol, in a little hot water, was promptly followed by cessation of the hiccough. Upon administration of three additional doses in the next twenty-four hours, no recurrence took place.

Treatment of Skin Tuberculosis.—G. N. Meachen, in the *British Medical Journal* for October 18, 1913, commends the use of copper chloride in the treatment of lupus. The nodules are first frozen with carbon dioxide snow, in order to expose the dermis. A one per cent. solution of copper chloride in water is then injected into the nodules to the amount of 8 to 30 minims (0.5 to two c. c.). The same salt is given by mouth three times a day in cachets each containing one sixth grain (0.01 gram). Local erythema and slight swelling follow, but in two or three days the lesions appear flatter and paler.

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CHARLES E. DE M. SAJOUS, M.D., LL.D.
CLAUDE L. WHEELER, A.B., M.D.

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TO PROTECT THE PUBLIC FROM WOOD ALCOHOL.

The municipal ordinance recently introduced by Alderman White relating to the sale and use of methyl alcohol needs only careful reading to show that it would fail of its presumptive intent and that the protection expected by profession and public would be illusory; its language is misleading and might do injustice. Methyl alcohol, also known as wood alcohol and wood naphtha (CH_3OH), is to many individuals a dangerous poison, and if not frequently productive of fatal results, has in numerous instances caused permanent blindness. Sensational statements have been rife concerning the failure to enact bills which would control the sale of this harmful substance, and Professor Charles Baskerville, of the College of the City of New York, who has been frequently quoted in a misleading way in these statements, has been induced to draft an ordinance which would protect the public without interfering with the legitimate manufacture and sale of a product highly useful in the arts. Professor Baskerville's ordinance reads as follows:

Section 1. No person shall sell, offer for sale, deal in, supply or give away, or have in his possession with intent to sell, offer for sale, deal in, supply or give away any article of food or drink or any medicinal or toilet preparation intended for human use internally or externally which contains any wood alcohol, otherwise known as methyl alcohol, either crude or refined, under or by whatever name or trade mark the same may be called or known.

Section 2. No person shall sell, offer for sale, deal in, supply or give away, or have in his possession with intent to sell, offer for sale, deal in, supply or give away any wood alcohol, otherwise known as methyl alcohol, either crude or refined, under or by whatever name or trade mark the same may be called or known, unless the container in which the same is sold, offered for sale, dealt in, supplied or given away shall have affixed thereto a label containing the following words printed in type not less in size than eight point as known to the trade, in red letters on a white field, viz.:

POISON:

WOOD ALCOHOL. It is unlawful to use this fluid in any article of food or drink, or medicinal or toilet preparation, for human use, internal or external.

It is hoped that this ordinance, which has been carefully drawn, may be enacted in every State where adequate protection does not already exist. As there is no known antidote to wood alcohol and as poisoning therewith is one of the most intractable conditions we are called upon to meet, it seems to be the duty of the medical profession to assist in the passage of this protective measure.

ETHER DRESSINGS.

Although the local use of ether is not new, its value as a local antiseptic has not received the attention to which it is entitled, its only recognized properties hitherto having been its rapid evaporation, which renders it a valuable revulsive, and its ability to dissolve fats. As an antiseptic, however, ether is endowed with a property which no other agent seems to possess to an equal degree, viz., that of penetrating into fissures, erosions, cavities, interstices, recesses, etc., and exerting, through its fumes, its bactericidal influence upon pathogenic organisms which the most careful cleansing with the usual antiseptic solutions does not reach. In extensive wounds in which mashed or torn edges and great laceration predominate, for example, the preliminary cleansing is never sufficient to rid the exposed tissues of all contaminating material; in compound comminuted fractures this also tends to delay repair and promote the development of complications. The same is true of infected and suppurating wounds and phlegmons in general, burns, felons, suppurative lymphangitides, and erysipelas. The extent of the lesions or the areas exposed militates in no way against its local use, owing to its nontoxicity; indeed, the only sign of a general action is the somnolence occasionally observed under such circumstances.

To obtain satisfactory results, however, certain precautions are necessary, upon which Durand, of

Paris (*Clinique*, March 13, 1914), recently laid stress after studying the method in a large number of cases. As ether evaporates rapidly, the dressing, after the very careful cleansing of the lesion and the neighboring skin, must be prepared hastily and be so applied as to extend considerably beyond the edges of the injured or diseased area. It should also be made to adapt itself as intimately as possible to the tissues, after being freely saturated with ether and covered with nonabsorbent cotton—since absorbent cotton greatly aids evaporation. The whole should then be protected with an impermeable covering of some sort. The edge of this covering being applied with some degree of tightness either by a special bandage, adhesive plaster, or any other means which the shape of the affected region will allow, the evaporations of the ether will be prevented, and its antiseptic action centred upon the exposed tissues. Such a dressing may conveniently be left *in situ* five or six days, when the wound will be found clean and undergoing resolution.

This treatment has been found efficient in all cases. In lymphangitis and erysipelas the temperature soon falls, while the tissues resume their normal color. In phlegmons the suppuration is arrested early and the pain soon ceases. Although the application of ether to a raw surface causes pain, this lasts but a few moments and is followed by local anesthesia.

THE DIVIDING LINE BETWEEN THE GENERAL HOSPITAL AND THE HOSPITAL FOR THE INSANE.

In an article with the foregoing title in the *Modern Hospital* for March, 1914, Dr. William A. White, superintendent of the Government Hospital for the Insane at Washington, D. C., discusses the psychopathic hospital or psychopathic ward idea; he justly contends that the phrase, hospital for the insane, is a misnomer. It is high time that the words "insane" and "hospital" should part company permanently; we must remember that the term, insanity, is not a medical but a legal and sociological one. Mental disease and insanity are by no means interchangeable or synonymous. True, all of the insane are suffering from mental disease, but there are many mentally diseased persons who get along efficiently in the community and who are not legally insane. There are also many patients, now classed as criminal or otherwise, who could equally well be called insane if their path had led in a little different direction. It is a recognized fact that incipient mental cases are not diagnosed nor treated, and that in this way frank mental disease, which has become certifiable, is not prevented in too many cases where it could easily have been done.

Among the factors which keep a patient from seeking advice and treatment until his disease is well on its way and it is perhaps too late to do much in the way of prevention or abortion of an attack, are the nonrecognition of the fact that a mentally disturbed person is a sick person—quite as much so as one with a broken limb; furthermore, the absence of proper places where such an invalid may go for advice and early treatment; the cumbersome legal technicalities necessary for admission to a hospital where the condition is understood, and where the invalid can be treated; the branding of such a patient as insane, considered to be a disgrace by the laity and many physicians.

The need for psychopathic wards, clinics, or hospitals is apparent and quite generally appreciated. It is our belief that such a psychopathic ward or hospital should be connected with the general municipal hospital. "The municipality is," as White says, "on the face of it, endeavoring to treat a sick man, and not simply to shut up a crazy one." This psychopathic ward should receive all mental cases entering the municipal hospital—just as the obstetric ward receives all the obstetric cases, the surgical ward receives all the surgical cases, etc. Like the other wards, the psychopathic ward should have its corps of trained men, for the subject of mental medicine is indeed a distinct specialty. These trained psychiatrists, beside giving their services to the psychopathic ward, may be drawn upon for consultation and advice in any other department of the institution.

It is obvious that the internist and the psychiatrist can be of much service to one another in a host of troublesome conditions that lie on the borderland between internal medicine and psychiatry. There are the many cases of neurasthenia, hysteria, and the other psychoneuroses, the delirium of fever or traumatism, psychoses from shock and loss of blood, the large group of gastrointestinal cases which are closely related to the neuroses, pelvic diseases in women, the chronic organic nervous conditions with aphasia, apraxia, and organic deterioration, and the toxic psychoses, especially the alcoholic. It may be noted that the alcohol and drug cases belong essentially to the domain of psychiatry.

An important advantage to be obtained by such a plan as is here outlined is that the transfer of the patient from the psychopathic ward to the large State hospital, when this is found to be necessary, can be made as simple as possible. A certificate signed by two properly qualified physicians should be found sufficient. As a matter of fact, the case

should not come into court at all, unless it is taken there by the patient himself, the family, or friends who may act in his behalf.

In the construction of such a hospital, facilities for original research work, and provision for making the material for the teaching of mental medicine accessible to law students should not be overlooked. Such a hospital should be a place to receive prisoners whose mental condition was being inquired into, this being done in cooperation with the court. Such an institution, run on a high plane, free from political juggling and interference, should put mental medicine on a more scientific basis, and should become the centre of the community for all things psychiatric in nature, whether in their medical, legal, sociological, or any other bearing.

AUTOMATIC POLYGRAPHY IN THE STUDY OF THE HEART.

The idea of registering the action of the heart muscle had for its basis the fact that there is a ratio between the contracting force of certain heart muscles and the current which emanates from them, and of late much attention has been given to graphic methods and appliances in the study of the organ. Especially is this the case with regard to electrocardiography, and it is no doubt due to the general and efficient utilization of electricity for commercial purposes that electrographic methods have been brought so rapidly to their present degree of excellence. It is a fact that the discovery that electrical currents emanate from contracting muscular tissue was foreshadowed as long ago as 1628, by Harvey, but it was not until 1843 that this was actually demonstrated by Matteuci, who showed that electromotive force emanates autochthonously from the heart. Lippmann, in 1873, furnished the idea of a supersensitive capillary electrometer, and it was Ader's registration machine, as applied to submarine cable work (1897), that led to the construction of the string galvanometer, an essential feature of the present electrographic machine. Today the instrument of Einthoven, of Leyden, is recognized as the standard, and is the one in general use. Strictly speaking, Einthoven has not devised a new method; for he has utilized the string galvanometer of Ader and the photographic method of Marey, and the credit of the completed instrument is largely due to Edelmann, the manufacturer; still, Einthoven is entitled, more than any other, to have electrocardiography associated with his name. For the main points thus presented indebtedness must be acknowledged to the new work of Satterthwaite on recent advances in cardiovascular diseases, and the following quotation will serve to show the author's estimate of the value of the electrocardiographic machine: "This much may truly be said: The instrument is capable of showing the time and force of action of ventricles and auricles, notes lack of transmission, and demonstrates ventricular and auricular extrasystoles more clearly than any other method. It is certainly useful in various forms of arrhythmias, particularly when there is more or less complete auriculoventricular dissociation. Electrocardiography has already broadened the knowledge obtained by other graphic methods."

Many other authorities, American and foreign, have testified to the great advantages of the method, and none have expressed higher appreciation of the accuracy of the records of the electrocardiograph than Walter James and T. Stuart Hart, as the result of their extensive experience with its use at the Presbyterian Hospital in this city. The latest contribution on the subject is an elaborate article by H. E. B. Pardee (*Journal A. M. A.*, April 25, 1914), in which he discusses the relation which the direction and size of the waves of the electrocardiographic records bear to the direction and amount of current within the heart and the variations in the form of the waves to which it has been found possible to attach a certain significance. These variations are due to changes in the mass, in the structure, or in the function of the heart muscle, and the information which they afford can be obtained so surely by no other method. Certain changes, as pericarditis and endocarditis, will not, he states, affect the electrocardiogram until they have existed a sufficient length of time to modify the function or structure of the heart muscle. Other changes, as hypertrophy, premature contractions, and fibrillation, are shown more clearly and exactly by this than by the older methods, and still other changes, those resulting from myocardial disease, are shown exclusively by electrocardiac records.

THE EXTERMINATION OF MOSQUITOES IN THE CITY.

The importance of ridding New York of mosquitoes has long been recognized by the Department of Health. An article in the *Weekly Bulletin* for May 9th makes no mention of the borough of Kings, although in the Flatbush district mosquitoes are numerous and of their average painful activity; residents of that borough would, we imagine, be glad to cooperate in a war on mosquitoes and to proceed immediately to occupy in force the headquarters of the enemy. The work has been greatly helped by contributions from the citizens in all other boroughs with one exception. This exception to cooperate with the Department of Health was on the part of the borough of Richmond. Mosquito

extermination through the drainage of marsh lands was undertaken by the city in 1905, the work beginning in that borough: to date, over $100,000 has been spent for ditching and the maintenance of drainage channels. The property owners of the borough have not directly contributed anything to the cost of the work, although the breeding of mosquitoes has practically ceased in Staten Island. Similar work was started in the borough of Queens in 1908, but the city has thus far spent less than $3,500, while the citizens of Queens, on orders issued by the department, have spent over $40,000.

In the Bronx antimosquito work was started in 1909, since which time the city has spent $6,500, while the citizens of the borough, on orders issued by the department, have spent nearly three times that sum. At the present time, certain areas in the Bronx and Queens are so pestered by mosquitoes because of insufficient drainage that it seems proper for the department immediately to undertake drainage work with the force of laborers at its disposal. It is the intention to have drainage done in every instance by private owners where such owners can be promptly discovered.

The borough of Richmond will not be discriminated against in maintenance work, but until the other boroughs are put in as good condition as Richmond, no new constructive work by the city is likely to be undertaken there.

News Items.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, May 11th, Samaritan Hospital Medical Society; Tuesday, May 12th, Pediatric Society; Wednesday, Philadelphia County Medical Society; Thursday, May 14th, Polyclinic Ophthalmic Society and the Pathological Society; Friday, May 15th, Southeast Branch of the Philadelphia County Medical Society.

Hospital Saturday and Sunday Association Distributes Fund Among Forty-seven Hospitals.—On Friday, May 1st, the Hospital Saturday and Sunday Association apportioned $110,000 among forty-seven nonmunicipal hospitals in New York, which is $5,000 more than any previous apportionment in thirty-five years. Mount Sinai Hospital received the largest amount, $10,592.70. The distribution is based on the number of days of free treatment given to the poor, regardless of race or creed, for which the hospital has received no payment either from the patient or from the city.

Physical Examinations of Employees.—The Department of Health is compiling a list of corporations and firms which employ physicians for the purpose of making periodical physical examinations of employees. Our readers will confer a favor upon the department by sending the name of any corporation or firm which should be included in this list, adding, wherever possible, the name of the physician in charge of the work, and the date of its inauguration. Communications on this subject should be addressed to Dr. S. S. Goldwater, Commissioner of Health, and should be marked Personal.

Missouri State Medical Association.—This association will meet in annual session in Joplin on Tuesday, Wednesday, and Thursday, May 12th, 13th, and 14th, under the presidency of Dr. E. H. Miller, of Liberty. Dr. E. J. Goodwin, of St. Louis, is secretary and editor; Dr. J. Franklin Welch, of Salisbury, is treasurer, and the vice-presidents are as follows: Dr. C. H. Neilson, of St. Louis, Dr. T. J. Downing, of New London, Dr. M. B. Austin, of Brunswick, Dr. G. D. Allee, of Lamar, and Dr. A. E. Hertzler, of Kansas City. Dr. T. F Lockwood, of Butler, will deliver the oration in medicine, and Dr. T. E. Potter, of St. Joseph, the oration in surgery.

Regulations Concerning Tents, Camps, and Bungalows.—In order to protect the health of those spending the summer in tents, camps or bungalows, within the city of New York, the board of health recently passed rules and regulations providing for the observance of certain minimum sanitary requirements. This includes the adequate supply of pure drinking water, sanitary privy accommodations, disposal of liquid wastes and all garbage and refuse.

Mortality Statistics of New York.—During the week ending April 25, 1914, there were reported to the Department of Health of the City of New York 1,637 deaths from all causes, and a death rate of 15.30 in a thousand of population, compared with a rate of 16.28 for the corresponding period in 1913, a decrease of 105 deaths. During the week ending May 2, 1914, there were 1,593 deaths and a death rate of 14.89 in a thousand of population; in the corresponding period in 1913 the rate was 14.88.

New Officers of the Medical Society of the State of New York.—At the 108th annual meeting of this society, held in New York, on the five days beginning Tuesday, April 28th, the following officers were elected: President, Dr. Grover W. Wende, of Buffalo; vice-presidents, Dr. Myron B. Palmer, of Rochester; Dr. S. W. S. Toms, of Nyack, and Dr. R. M. Elliott, of Willard; secretary, Dr. Wisner R. Townsend, of New York, reelected; treasurer, Dr. Alexander Lambert, of New York (reelected).

South Carolina State Medical Association.—At the sixty-sixth annual meeting of this association, held in Florence, on April 14th, 15th, and 16th, under the presidency of Dr. William Weston, of Columbia, the following officers were elected: President, Dr. E. F. Parker, of Charleston; first vice-president, Dr. F. H. McLeod, of Florence; second vice-president, Dr. B. M. Badger, of Dillon; third vice-president, Dr. E. W. Carpenter, of Greenville; secretary and treasurer, Dr. A. Hines, of Seneca, reelected.

Alumni Association of the Lying-in Hospital.—The annual dinner of this association will be held at the Hotel McAlpin, New York, on Wednesday evening, May 13th, at 7:15 o'clock. The price for each guest is $2.50, payable in advance or on the evening of the dinner. The speaker of the evening will be Dr. S. S. Goldwater, health commissioner of the city of New York. The officers of the society are: President, Dr. C. E. McDannald; vice-president, Dr. R. M. Rawls; secretary-treasurer, Dr. C. Frederic Jellinghaus; editor, Dr. D J. Hamburg.

New Officers of the Alabama State Medical Association.—Dr. B. B. Sims, of Telladega, was elected president of this society, at its annual meeting held in Montgomery on the four days beginning Tuesday, April 21st. Dr. F. A. Webb, of Calvert, was elected first vice-president, and Dr J. U. Ray, of Woodstock, second vice-president. Dr. James N. Baker, and Dr. Henry Gaithe Perry, of Montgomery, were reelected secretary and treasurer, respectively, and Dr. William H. Sanders, of Montgomery, for seventeen years State health officer, was also reelected.

Personal.—Dr. Joseph S. Neff, director of the department of Public Health and Charities of Philadelphia since April, 1907, resigned because of ill health on May 1st.

Dr George Tully Vaughan, of Washington, D. C., for many years chief of staff of the Georgetown Hospital, has gone to Vera Cruz to become the government's chief operating surgeon in the field. Doctor Vaughan is a first lieutenant in the Medical Reserve Corps of the Army.

Dr. Jacob Frank, of Chicago, has been appointed surgeon general of the Illinois National Guard, with rank of lieutenant colonel.

Examination for Technical Assistant in Pharmacology (Male).—The United States Civil Service Commission announces an examination on June 1st, for the position of technical assistant in pharmacology, for men only. From the list of eligible persons resulting from this examination certification will be made to fill vacancies in this position in the Division of Pharmacology, Hygienic Laboratory, United States Public Health Service, at salaries ranging from $1,800 to $2,000 a year. An educational training, including a degree of doctor of medicine from an institution of recognized standing, and at least two years' subsequent experience in experimental pharmacology or physiology are prerequisites for consideration for this position. Full particulars regarding the examination may be obtained from the United States Civil Service Commission, Washington, D. C.

California State Medical Society.—At the annual meeting of this society, held in Santa Barbara on April 15th and 16th, under the presidency of Dr. F. C. E. Mattison, of Pasadena, the following officers were elected: President, Dr. Harry H. Sherman, of San Francisco; first vice-president, Dr. George Hare, of Fresno; second vice-president, Dr. Rexwald Brown, of Santa Barbara; secretary, Dr. Phillip Mills Jones, of San Francisco.

San Francisco was chosen as the city for the 1915 convention.

Sanitary Supervisors of the State Department of Health.—Dr. Hermann M. Biggs, New York State Health Commissioner, announces that the following physicians have been appointed sanitary supervisors: Dr. Edward Clark, of Buffalo; Dr. Frederick W. Sears, of Syracuse; Dr. Harry S. Crum, of Ithaca; Dr. John J. Mahoney, of Jamestown; Dr. Frank Overton, of Patchogue; Dr. Charles S Prest, of Waterford; Dr. Samuel D. Hubbard, of New York; Dr. Leroy W. Hubbard, of Mount Vernon; Dr. John Archibald Smith, of Saranac Lake; Dr. John A. Conway, of Hornell; Dr. Charles C. Duryea, of Schenectady; Dr. Charles V. Patchin, of Dansville.

Women's Medical Society of New York.—The annual meeting of this society was held in New York on Monday, April 27th, under the presidency of Dr. Marion Craig Potter, of Rochester, N. Y. Two guests were Dr. Lillian South, of Kentucky, who conducts a laboratory in which only women are employed and is the third vice-president of the American Medical Association, and Dr. Grace Ilahi-Baksh, of Rajputana, India, who graduated from the Buffalo Medical College in June. She is continuing her studies at the New York Lying-in Hospital, and later hopes to join her mother, also a physician, in work in India. Dr. Angenette Parry was elected president to succeed Doctor Potter.

The American Gynecological Society.—The thirty-ninth annual meeting of this society will be held in Boston, Mass, on Tuesday, Wednesday, and Thursday, May 19th, 20th and 21st, with headquarters at the Harvard Club. On Tuesday and Thursday the scientific sessions will be held in the Boston Medical Library Building, and on Wednesday, at the Country Club. The officers of the society are: President, Dr. J. Whitridge Williams, of Baltimore; first vice-president, Dr. Thomas J Watkins, of Chicago; second vice-president, Dr. Howard C. Taylor; treasurer, Dr. J. Wesley Bovée, of Washington, D. C;. secretary, Dr. Leroy Broun, of New York; other members of the council, Dr. Edward P. Davis, Dr. Reuben Peterson, Dr. Howard A. Kelly, Dr. Henry C. Coe, Dr. William E. Studdiford, and Dr. Thomas S. Cullen.

A Psychopathic Ward at the Philadelphia General Hospital.—The proposed psychopathic ward for the examination and treatment of suspected cases of insanity was approved by the State Board of Health and Charities April 11th. Persons suspected of mental disease or defects will be sent to this ward. If the patient is found to be insane after a period of thirty days of observation he will be sent to the State Hospital at Norristown. The last Legislature appropriated $10,000 toward the establishment of such a ward, and plans are being made to take temporary care of at least 140 persons. An interesting feature will be the introduction of a system of treatment which will enable many of the patients to return to their homes, under the supervision of physicians and social workers.

Cancer Hospital to be Established in New York.—It is announced that plans are being prepared for the establishment in New York of an institution to be devoted to research into the causes and treatment of cancer. The General Memorial Hospital will be used for the exclusive treatment of cancer patients and the work will be under the control of Cornell Medical College. More than $1,000,000 is already in hand, in addition to the hospital buildings, and the institution will also have a large supply of radium. Dr. James Douglas, of New York, has not only donated $500,000 toward the fund, but has turned over to the hospital his half interest in the radium mines of Colorado, owned jointly by him and Dr. Howard A. Kelly, of Baltimore. It is said that it is largely due to Doctor Douglas's generosity that the establishment of the new institution has been made possible. The hospital will be under the direction of Dr. William M. Polk, dean of the medical college faculty, and Dr. James Ewing, professor of pathology. It is the intention of the new institution to take only those cases which are open to treatment or of interest in study.

Surgeon General Gorgas Receives Gold Medal of Academy of Sciences.—It is announced that Brigadier General William C. Gorgas, surgeon general of the United States Army, is one of the first two recipients of the gold medal of the National Academy of Sciences, which is awarded "for eminence in the application of science to the public welfare." The medal is awarded to Colonel Gorgas in recognition of the work done by him in connection with the building of the Panama Canal. The other recipient of the medal is Colonel George W. Goethals. The medals were presented at the annual banquet of the academy, held in Washington, D. C., on Wednesday evening, April 22d.

American Association of Medical Jurisprudence.—The annual meeting of this organization was held on May 2d in New York, the morning session at the Metropoltan Club, where business was transacted, and the presidential address on Medical Expert Testimony was delivered by President Reynold Webb Wilcox, M. D., LL. D. The afternoon session, at the Academy of Medicine, included papers by Dr. A. Ernest Gallant, Dr. Frank Wade Robertson, and Dr. Louis Faugères Bishop and Messrs. Charles A. Boston, Oscar W. Ehrhorn, John S. Durand and Theodore Sutro. The following officers were elected: President, Charles A. Boston, of New York; vice-presidents, Oscar W. Ehrhorn, of New York, and Dr. D. Percy Hickling, of Washington; secretary, Charles P. Blaney, of New York; treasurer, John C. West, of New York; councillors for five years, Dr. Philip Coombs Knapp, of Boston, and Harold Hirsch, of Atlanta, Ga.

A banquet was tendered to the visiting members and guests by the resident members at the Café des Beaux Arts.

Whooping Cough in New York.—A plan has been developed for the supervision and the treatment of cases of whooping cough by the hospitals and dispensaries. A survey has recently been completed of the institutions, hospitals, and dispensaries of New York with a view to determining what institutions treat whooping cough at the present time, what institutions desire to maintain whooping cough clinics, and what facilities they possess for dealing with this disease. Altogether, 116 were visited; of these seventy-eight reported that they have no cases of whooping cough applying for treatment; only five have a district physician attending whooping cough patients at their homes.

It is interesting to note that sixty-seven institutions admitted that their physicians did not report all cases of whooping cough to the Department of Health. This is probably due to the fact that fifty-two institutions were not clear as to who really attended to the reporting of such cases; only four institutions maintain and support classes for treating cases of whooping cough on the premises, three of these were hospitals and one a dispensary.

Philadelphia County Medical Society Adopts Resolution on Animal Experimentation.—The following resolution, introduced before the Philadelphia County Medical Society, was unanimously adopted at its meeting held April 22, 1914:

We, the 1,700 members of the Philadelphia County Medical Society, wish to place ourselves on record in affirming our full confidence in the rectitude and humanitarianism of the distinguished scientists who are being prosecuted for alleged cruelty to animals. We knew that these gentlemen are actuated in their labors solely by the desire to alleviate suffering and to banish disease.

We who sit at the bedside and minister to the wants of the sick and injured, know what inestimable benefits have accrued from animal experimentation. We as a class feel that our training and daily experience as physicians enable us to better appreciate the value of animal experimentation than any other group of men or women in the community. Progress in medicine as in every human activity, is based upon experiment; without experiment advance is impossible.

We insist that new methods of treatment should be tried on animals and their efficacy and harmlessness determined before we employ them upon suffering human beings committed to our care.

We hold that the most superlative inhumanity is that which permits human kind to suffer and to die without making every effort to assuage distress and to conquer disease.

We are unalterably opposed to any law that would increase smallpox, diphtheria and other infectious diseases by denying to us the use of vaccine virus, diphtheria and other antitoxins which can be obtained only through laboratory operation upon lower animals.

We believe that the treatment accorded to animals experimented upon is essentially humane. Furthermore, many contagious diseases of the lower animals themselves have been banished through knowledge gained by experimentation.

We feel that those who are behind these prosecutions have in their zeal developed a greater sympathy for lower animals than for members of the human family. We who usher the babe into the world feel that its life is worth something more than that of the guineapig or even the dog.

We protest, and we feel that society will protest against a restriction of scientific activities which are essential to progress and whose cessation would mean increased human suffering and death.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT

[illegible] 2, 1914

Further Experiences with Radiotherapy in Cancer.—E. Bumm reports 108 cases of carcinoma treated with radium. In all, without exception, after a period varying from three to five weeks, a local cure of the cancer resulted. Injurious effects of the treatment rest on the fact that it is not specific for cancer cells, but acts by virtue of its qualitative effect on the different cells of the affected tissue. It is certain today that a complete destruction of the cancer nests is possible only to a depth of two and 0.5 cm. on the shrunken specimen, i. e., three to 3.5 cm. from the surface of the untreated carcinoma. Beyond four cm. several small nests of cancer are found which have not been affected at all. The dose used should approximate fifty to 100 mg. radium or mesothorium. This can be allowed to act six, ten, and twelve hours. The best filter is either three mm. or 1.5 mm. aluminum, brass filter, covered with two mm. of metal free rubber. Radium or mesothorium is best applied in a horn or celluloid capsule, several mm. distant from the skin. For deep therapy, or for treatment of metastases, the new Veifa tubes make it possible to influence with the Röntgen ray deep processes at a distance of nine cm.

Treatment with Digifolin.—Erich Grabs concludes that digifolin, applied internally, subcutaneously, intramuscularly, or intravenously, has given in most cases, a very excellent digitalis effect. In all cases of mitral decompensation, myocardial degeneration, and in acute dilatations of the heart, the action of digifolin was that of a strong digitalis preparation. In urgent cases, complicated with dyspnea and edema or nephritis, one gram of digifolin, combined with one gram of diuretin, given three times daily, with a pause of three days, during which time two pearls of euphyllin were given, has been followed by a decided improvement. In case of danger, the subcutaneous administration of one or two ampoules has the same effect as an intravenous injection of any of the other digitalis preparations. He has not observed any untoward effects even after administration by the stomach; after subcutaneous or intramuscular administration, about one third of the patients complain of pain lasting about one hour. Even after the intravenous injection of three ampoules there is no danger, in contradistinction to the dangers after strophanthin. Digifolin is dispensed commercially in tablet or ampoule form, each containing one gram of folia digitalis titrata.

Isopral Rectal Narcosis.—P. Kleinschmidt concludes, after extended experience, that the method does not give very desirable anesthesia, though in about one third of cases it affords uniform narcosis; in the remaining two thirds it is not particularly reliable. It causes postnarcotic restlessness which necessitates constant care. In large doses, especially when given rectally according to Merten's method, poisonous symptoms make it too dangerous to be employed.

New Treatment for Acne.—H. Buchholtz suggests that in cases of acne which do not prove amenable to treatment with the continued application of yeast, a modification with boric acid, applied after a previous inunction with boric acid salve with eucerin as a base, instead of lanolin, is followed by decided improvement.

Focal Diagnosis of Spinal Cord Tumors.—Gotthard Soderbergh deduces, from a number of very interesting cases of multiple tumors of the spinal cord, the following motor function of certain dorsal roots. The seventh dorsal root innervates the greatest part of the upper portion of the external abdominal oblique. The eighth and ninth dorsal roots, after stimulation, cause the umbilicus to be drawn to the opposite side, the effect being due to the combined action of the transverse external and internal abdominal oblique. The tenth dorsal root innervates almost entirely the internal abdominal oblique. Occasionally an inversion of the radial reflex occurs, which according to the author, is concomitant with lesion of the cervical roots. When a compression of the upper cervical cord is present, occasionally isolated atrophies of the interossei and thenar muscles occur, which may lead to false diagnostic conclusions because of different segments which these symptoms correspond to.

Hypophysis and Its Active Parts.—H. Fühner maintains that the active parts of the hypophysis are those which can be precipitated with phosphotungstic acid. A preparation derived from the filtrate after precipitation did not prove to have any effect on the raising of blood pressure. The ecbolic principle in the hypophysis is also contained in the precipitable substance. Fühner maintains, on the ground of these experiments, that Popielski's contention as to the worthlessness of hypophysin of Hoechst, has not been proved.

Biological Action of Rays on Trypanosomes.—L. Halberstaedter reports that he has been able to influence trypanosomes by means of radioactive substances. Trypanosomes are rendered noninfectious, but retain their motility.

Epidemic of Poliomyelitis in Norway.—E. Aaser reports an epidemic of infantile paralysis which affected fifteen children and in all, despite their occurrence in two isolated foci, the disease could be traced to several mild cases, which had an undoubted role in the transmission of the affection.

Localization of Bacteria and Changes in Bone and Bone Marrow in First Period of Growth.—Joseph Koch has been able to demonstrate in animals that after infection with bacteria, the latter tend to localize in the epiphyseal region. The medullary cavity increases in size owing to the solution of the bone substance, the diameter of the cartilage increases owing to proliferation of the cells of the cartilaginous zone; the real zone of proliferation, however, becomes smaller owing to degeneration and destruction of its cells. These changes resemble those seen in early rhachitis.

Action of Radium on Splenic Tumors.—H. Schuller maintains that tumors of the spleen, as well as those of the glands, diminish in size after

treatment with radium, and in the case of leucemic enlargements, the blood picture also shows a decided improvement. It has also been observed that tumors not amenable to treatment with x rays are very often favorably influenced by radium.

Glossinæ as Carriers of Infection.—E. Teichman has been able to demonstrate the further development of Trypanosoma brucei under favorable conditions in the glossina.

Embarin in Ophthalmological Therapy.—R. Possek describes the use of embarin, a solution of mercurosalicylsulphonate of sodium. It contains three per cent. mercury, with the addition of one half per cent. acoin for its local anesthetic effect. He has obtained very good results with its use and finds the method of application very simple.

Technic of Deep Radiation.—F. Davidsohn suggests that in deep radiotherapy the following details aid in securing the greatest possible results. 1. Concentration of the focal point of the radioactive tube on the skin or organ to be treated (distance of twenty-eight to thirty cm.). 2. Exclusion of the soft rays by means of a one mm. aluminum tin filter, or the Kohlers iron wire net. 3. Compression of the skin. 4. Radiation of the affected organ at three to eight different points, serially, using the Koch high tension alternator. 5. Tubes should be maintained at their original degree of hardness. 6. The combined dose should not exceed 300 x.

"Water Error" in the Use of Salvarsan.—W. Wechselman maintains that he has not attempted to explain by the possible use of impure water all the toxic symptoms observed after the use of salvarsan intravenously. Although neurorelapses and sudden death occur in many cases where this source of error has been done away with, he has administered salvarsan in thousands of cases using pure distilled water and has found that a good many of the untoward effects reported by other authors do not occur. He therefore concludes that the use of impure water is responsible for most of the untoward results.

February 28, 1914

Treatment of Cirrhosis of the Liver with Keratin.—S. M. Zypkin asserts that keratin is of more decided value in the treatment of cirrhosis of the liver than the iodides. Owing to the chronicity of the complaint, it is more advisable to use keratin, which after a long period of administration, is followed by very few if any untoward effects.

Early Rising after Operation.—W. Hoffman has been able to prove by means of the Katzenstein test, that the heart in most cases of operation is somewhat impaired, and that in these cases it is not advisable to permit early rising. Early rising is a decided strain on the heart, and as such, should not be permitted until at least eight or ten days after operation.

Acetonal Suppositories in Proctitis.—W. Jungerich suggests the use of acetonal suppositories containing two per cent. alsol and acetone chloroform salicylic acid ester in ten per cent. solution for the treatment of proctitis. The substance has the advantage of being anesthetic as well as disinfectant in action.

LYON MÉDICAL.

March 8, 1914.

Erythema nodosum and Tuberculosis.—Carle holds that a diagnosis of erythema nodosum can no longer be considered complete. The cause of the condition should be ascertained by careful observation of the accompanying symptoms. If there appears almost simultaneously some fever, together with joint pains and enlargement, the condition is probably of gastrointestinal (rheumatic) origin. Rapid involvement of different joints, marked inflammatory signs, and early formation of ecchymoses suggest a good prognosis, with fall of temperature on the fifth day and cessation of the whole trouble in two weeks. Where, however, a temperature of about 39° C. has appeared a few days before the skin symptoms or the latter have come on slowly, without local reaction or gastric disturbance, and with but little joint pain, a possible tuberculous causation should be thought of and the patient watched for a long time, even if there are no auscultatory signs of tuberculosis, when the eruption has failed to disappear in a month and the patient's general condition has suffered.

March 22, 1914.

Hypertrophic Myocarditis.—J. Paviot asserts that in some cases of so called idiopathic cardiac enlargement,, without valvular lesion, sclerosis of the heart muscle, or primary renal disease, the condition must nevertheless be considered one of myocarditis. There occurs a slow inflammatory process which finally results in an increase in the number of muscle fibres without interstitial change. On the other hand, sclerotic interstitial changes may occur in these same hypertrophied hearts without appreciably influencing the symptoms. Tuberculosis or syphilis is sometimes the cause of this hypertrophic myocarditis, with or without sclerosis.

March 2., 1914.

Changes in the Reflexes Caused in Certain Epileptics by Compression of the Eyeballs.—C. Lesieur, M. Vernet, and Petzetakis find that in the intervals between epileptic fits, the tendon reflexes are normal in most epileptics, though the cutaneous reflexes are generally less active. After severe fits, the reflexes are abolished for a brief period in the stage of coma, return, and become exaggerated for a more or less prolonged time. It was found that in some epileptics pressure on the eyeballs even in the interval between seizures, causes a pronounced exaggeration of both the tendon and skin reflexes, sometimes accompanied by epileptoid motor phenomena. These direct effects of excitation of the medulla oblongata by way of the trigeminal nerve, appear to confirm the view of Morat, Doyon, and others that in man these reflexes occur through the intermediary of pontobulbar rather than spinal centres.

Glycosuria, Albuminuria, and Polyuria Brought on by Compression of the Eyeballs.—The same authors found that of four epileptic patients, three manifested albuminuria, four glycosuria, and all a marked polyuria after compression of the eyeballs. The albuminuria appeared in two hours, the glycosuria in three hours, and both disappeared at the expiration of five hours. These results are analo-

gous to those obtained in Claude Bernard's classic experiment of puncture of the floor of the fourth ventricle. The ease with which they are obtained evidently depends on the special excitability of the medulla in epileptics. The results show, moreover, that pressure on the eyeballs may exert effects not only through the vagi—cardiac inhibition—but through the sympathetic, experimental glycosuria having been demonstrated to occur through the latter system.

PARIS MÉDICAL.

April 4, 1914.

Acute Diabetes with Hepatic and Pancreatic Cirrhosis.—M. Labbé and A. Baumgartner report the case of a man who had been suddenly seized, six weeks before admission to a hospital, with pain and a dragging sensation in the right hypochondrium, marked thirst, polyphagia, polyuria, and general weakness. Upon admission he was greatly emaciated, and presented a brownish gray pigmentation over the lower abdomen and genitals. This pigmentation, he asserted, had existed throughout life, and had not deepened with the onset of the disease. There was marked glycosuria, diaceturia, etc., and the liver was enlarged. Death took place in coma two days after admission. At autopsy pronounced sclerosis of the liver and pancreas was found, together with intracellular ochre pigmentation in these organs and in the adrenals and pituitary. The thyroid showed some sclerosis and slight pigmentary deposit. As this patient had continued to work until three days before admission, the diabetes must be considered of an exceptionally acute type. The pancreas showed extremely few islands of Langerhans, but the authors do not attribute the diabetes directly to this, laying stress rather on an intermediate factor—the functional disorder in intracellular carbohydrate metabolism. The hepatic and pancreatic lesions cannot have become established in the short time between the onset of symptoms and the patient's death. The authors are therefore inclined to recognize the following stages in cases of bronzed diabetes: 1, A toxic or infectious process of unknown nature; 2, a hemolyzing and sclerosing effect of this process, resulting in pigmentation and hepatopancreatic cirrhosis; 3, appearance of grave diabetes with failure of nutrition and acidosis.

Paradoxical Carbohydrate Tolerance in Diabetes.—F. Rathery considers the phrase, paradoxical carbohydrate tolerance, applicable in all cases of diabetes in which increase of glycosuria does not occur in proportion with increased ingestion of carbohydrates. In the secondary form of paradoxical tolerance, this tolerance is readily explainable either on the basis of differences of tolerance of various kinds of carbohydrate food, or through variations either quantitative or qualitative, in the protein food simultaneously taken. Where both of these factors are excluded, one may speak of a primary or at first sight inexplicable paradoxical tolerance. The only explanation for such cases is either that there occurs a retention of sugar in the tissues whereby the outgo of sugar is temporarily less than the intake (this to be followed later by a paroxysmal sugar discharge), or that the patient's coefficient of carbohydrate oxidation is undergoing marked fluctuations, as is undoubtedly the case in some instances. In the cases which the author classes as "simple diabetes"—those in which glycosuria will disappear entirely upon reduction or removal of carbohydrates from the diet—paradoxical tolerance is of favorable prognostic significance. Such cases had best be kept aglycosuric by carbohydrate reduction, if their coefficient of carbohydrate utilization is relatively high; if not, the dieting should be less severe, and slight glycosuria allowed, except at certain periodic intervals. In cases of "consumptive diabetes," in which aglycosuria cannot be attained by carbohydrate interdiction alone, reduction in the proteins may procure the desired result. If not, the patient may still take a certain amount of carbohydrate without increasing the sugar more than a few grams daily. In such event, the paradoxical tolerance may with advantage be availed of, up to a certain limit, to feed the patient carbohydrates, though the prognosis should be guarded, as signs of acidosis may soon appear. On the whole, study of the paradoxical tolerance is of considerable value for rational dieting in diabetic cases.

PRESSE MÉDICALE.

April 4, 1914.

Local Anesthesia in Operation for Phimosis.—Saissi finds that ordinary methods of injecting anesthetics into the prepuce are unsatisfactory in operation in phimosis. He advises the following procedure: 1. Insert the needle into the subcutaneous cellular tissue of the penis at the junction of the anterior and middle thirds on the right side, begin injecting the solution (one to 200 novocaine with epinephrine), and simultaneously introduce the needle gradually toward the root of the penis, thus forming a bulla. Make three other similar injections on the dorsal, left lateral, and under surfaces. 2. Make a series of smaller injections superficially under the mucous membrane of the balanopreputial furrow, taking care to remove and reinsert the needle whenever there is danger of its breaking through the mucosa. The frenum should be injected lengthwise rather than crosswise. As numerous anastomoses take place between the deep nerve filaments of the glans and the subcutaneous filaments in the prepuce, the second series of injections not only procures anesthesia of the glans, but is necessary to render complete that of the prepuce.

April 5, 1914.

Cytodiagnosis in Cancer of the Stomach.—P. Simon and L. Caussade endorse the Loeper and Binet method of gastric cytodiagnosis, which consists in washing out the stomach, introducing one fourth of a litre of normal saline solution, removing it, centrifugating, and examining for cancer cells. It is necessary, however, that the solution should reach all portions of the gastric mucosa, no matter what the size of the organ, and this is best secured by having the patient lie down and sit up several times with the solution in the stomach, and by carefully kneading the organ. Even in scirrhus cancers, enough freshly loosened cells can thus be obtained to yield a positive diagnosis. The cancer cell is generally larger than the normal, more

sharply defined, often of peculiar shape, always stains strongly, and retains its stain for a long time upon washing. The nucleus is large, often multiple, staining deeply, and occasionally in mitosis. Vacuoles and reserve materials do not exist as in the normal cell, the cancer cell losing its functional differentiation. Nuclear and protoplasmic inclusions denoting nutritive hyperactivity are significant, but suggestive colloid, pigmentary, or other degenerative cellular changes are only rarely detected. Confusion between malignant and nonmalignant cells is possible only in the case of inflammatory gastric epithelial cells, but these are never so large as the cancer cells, do not retain stains so strongly, and never show multiple nuclei. In a minority of cases the site of a cancer in the stomach can be ascertained by study of the cells. The authors diagnosed gastric cancer from the cellular findings in twenty-four out of twenty-five cases, subsequently confirmed by operation or autopsy. In each of thirteen cases with a mass apparently in or near the stomach the cellular examination proved negative, which cast doubt on the diagnosis of gastric cancer at an early period.

Etiology of Acute Articular Rheumatism.—D. Danielopolu reports a typical case of acute rheumatism in which puncture of the knee joints yielded a turbid fluid containing not only numerous polymorphonuclear leucocytes and a few mononuclear and endothelial cells, but a number of bacilli, mostly of large size, with square or rounded ends, and sometimes surrounded by a clear capsulelike zone. A few of these organisms were intracellular. That the case was one of ordinary rheumatic fever was suggested by prompt response to salicylates, given only after the joints had been evacuated.

BRITISH MEDICAL JOURNAL.

April 18, 1914.

Inflammation and Tumor Formation.—Charles F. M. Saint analyzes both of these conditions, including the formation of malignant tumors, and seeks to establish a close parallelism between the processes. He suggests that tumors should be classified into infective and noninfective rather than into simple and malignant, the former including the malignant growths and some definitely infective tumors, such as papillomata; the latter including only the simple tumors. He regards inflammation surrounding the tumor as definitely a part of the tumor process and not merely a reaction of the tissues to irritation. He finds that inflammation and tumor formation are quite analogous as regards the greater part of their general and local symptomatology, signs, and course, even to the occurrence of resolution, fibrosis, and calcification. All of the latter factors occur with different relative degrees of frequency in the two general classes of process. Transmission occurs along almost identical lines; direct transmission by the natural passages, extension by continuity, extension through the lymphatics, and through the blood stream. Even the sites of predilection for both inflammatory and tumor processes are much the same. "Thus, the commonest parts to be affected in both inflammation and tumor growth are the upper ends of the tibia and humerus, and the lower ends of the femur and radius" in the case of young bone, and periosteal tissues in older bone.

Traumatic Rupture of the Small Intestine.—Frank Radcliffe gives the details of three such cases, and of the probable mechanism of the lesion. The accident occurred in strong young men: in all there was a history of having been dragged with the arms extended. Extension of the arms forces the chest into the position of full inspiration and the diaphragm is raised. This leads to a sinking in of the epigastrium and an elevation of the liver, spleen, and stomach, and to a less extent of the pancreas and duodenum. The lumbar spine is arched forward sharply, and the violent contraction of the abdominal muscles made by the patient in the effort to save himself, would drive the small intestine downward suddenly and forcibly. The first part of the jejunum, being the only part of the intestine which cannot be carried downward, is thus dragged upon and is torn transversely. It was at this point of the intestine that the rupture was found in each of the three patients. All of Radcliffe's patients died owing to the fact that their symptoms were not definite, nor even indicating a serious intestinal injury until the condition was hopeless. He, therefore, believes that a patient with a history of an injury which reproduces the mechanics just described, should be operated upon.

Veronal Poisoning.—E. Russell and George Parker first saw their patient after he had become unconscious. He was deeply comatose, all means to arouse him failed, the pupils were small, reacted to light, and subsequently became somewhat dilated. The extremities were flaccid, but not paralyzed. No reflexes could be obtained. His color was natural, the skin moist, there was about one degree of fever, the pulse was regular and somewhat rapid and the blood pressure was not high, the lungs were normal except for the accumulation of bronchial fluid. Death ensued without return to consciousness after a period of three days. Post mortem examination showed nothing characteristic. By the method of Willcox, veronal was isolated from the urine, 0.31 gram being obtained in crystalline form, 0.0235 gram from the viscera, and 0.0385 gram from the brain. The authors estimate that about fifty grains of the drug must have been taken.—A second case is reported by J. M. H. Munro of a healthy young woman twenty years old, who took 125 grains at once with suicidal intent. Her symptoms were closely similar to those described in the previous case, but lavage and treatment with coffee and strychnine led to recovery after a period of unconsciousness lasting three and a half days. From one ounce of urine, withdrawn forty-eight hours after the drug was taken, Munro isolated twenty-five mgm. of purified crystalline residue which was shown to be veronal. The case is remarkable for recovery after so large a dose. The author cites a number of other cases from the literature to show the variability of the fatal dose, so little as fifteen grains having proved fatal in at least one case. A third case is reported by Mitchell Innes Dick, ending in recovery after a dose of thirty-five grains.

Results of Nephropexy.—William Billington has performed this operation on more than 800 kidneys in over 500 patients and has obtained reports

as to the condition of ninety-two of the patients from their own physicians after at least one year from the date of operation. The operation was surgically successful in all but one, who still had pain in her side; the kidneys seemed satisfactorily anchored in all, and none has had any subsequent disability. With regard to the general benefit, many of the patients are described as being perfectly well, and only seven are reported as being no better.

LANCET.

April 18, 1914.

Intraspinous Treatment of General Paralysis.—Edward Mapother and Thomas Beaton have employed the method of Swift and Ellis in four cases selected on account of the slight degree of deterioration present. The immediate reaction to the treatment was slight and decreased in severity with each subsequent injection. In no case was there more than a slight improvement in either physical or mental condition—not more than frequently occurs spontaneously. In no case was the Wassermann reaction made negative. The authors further state that an analysis of the cases treated by this method by others, mainly Americans, "shows little ground for the generally hopeful attitude adopted in regard to the treatment, for none of them appear to have produced changes in the mental or physical conditions other than such as are to be seen with almost equal frequency during the untreated course of the disease, and, while in several of the published cases changes in the cell and globulin content of the cerebrospinal fluid have been noted, in none has any claim been made that the Wassermann reaction has been abolished in either the blood or the cerebrospinal fluid."

Tonsils and Adenoids in Children.—T. B. Layton makes a plea for the restriction of operations in tonsils and adenoids in children. Because these structures are enlarged, we have no right to infer that they are the cause of the surrounding inflammation. Their enlargement may be rather a consequence of it, and we would then do better to remove the cause of the inflammation than to remove the secondarily hypertrophied lymphoid tissue. He believes that before estimating the degree of obstruction which these enlargements are causing, one should not come to a conclusion just after an acute attack, nor until all other sources of infection have been eliminated. Perhaps the commonest source of infection is carious teeth, and no operation should be considered until all such teeth have been properly attended to, with complete removal of infection. After all sources of infection have been removed, several months should elapse before the question of operation is finally decided. In Layton's experience, a large proportion of children sent for operation on the tonsils and adenoids will not need such operation, if the suggestions made are adequately carried out, and if to these there are added two other measures: First, the careful and efficient training of the child to breathe properly; and second, the building up of the child's health to the maximum by means of fresh air and sufficient food. He further suggests that, if during such a course it is found that the parents or the attendants of the child have shown a persistent failure to train it in proper breathing exercises, an operation will be of little benefit, because such training is an essential sequel to the operation if it is to be a success. Layton finds that dyspepsia of the second dentition is also a frequent cause of lymphatic hypertrophy; its cure usually leads to recession of the hypertrophy to such an extent that operation is no longer needed. Before operating we must have positive evidence that lymphoid hypertrophy is itself doing harm, and that it is local and not a part of a general lymphoid enlargement, and also that it is permanent, not merely being kept up by the presence of some infective cause. When enlargement is due to some infective condition, operation, however complete, will be followed by a return of hypertrophy unless the cause is removed. He is unable to see any necessary connection between enlargement of the tonsils and adenoids in children and the occurrence of chorea or rheumatism, and he has not found that removal of the tonsils and adenoids has lessened the frequency of these conditions. Lastly, he cites evidence for the statement that tonsillar or adenoid removal is fraught with very considerable danger, even when performed under the most ideal conditions.

Treatment of Duodenal Fistula.—Charles A. Pannett, as the result of a successful case, suggests that essentials for treatment are maintenance of the patient's nutrition through feeding by means of a jejunal tube. This not only promotes reparative activity, but also increases antitryptic and bacterial defensive powers of the blood. Duodenal fistula tends naturally to heal, but owing to the difficulty of maintaining the nutrition, the patient usually succumbs to starvation and exhaustion before the fistula has had time to close. The operation has the advantage of being relatively simple, does not interfere with normal function of the pancreas, and can be performed without having to operate through the septic area which is also matted by adhesions.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

[illegible]

Inflammation of the Gallbladder.—James Tyson calls attention to the importance of early surgical treatment, to prevent carcinoma and other dangerous complications, almost all of which can be avoided by operation. Gallbladder inflammation varies greatly in degree and ultimate result. Its causes are common to inflammation; most frequently, some pathogenic organism, the typhoid or the colon bacillus, is the cause, favored or not by local irritation of a mechanical kind. The severest or fulminating form often terminates in abscess, which, if unrecognized, may rupture into the peritoneal cavity, producing shock and death; although at times life is saved by operation promptly performed. Adhesion of the gallbladder to adjacent viscera is now recognized as a frequent cause of pain in the right upper abdominal quadrant. Frequently the most important consequence of inflammation is cholelithiasis, which may arise independently of inflammation. The causal relation between cancer and stones in the gallbladder and biliary passages has been regarded as settled. Another result of cholelithiasis is suppurative cholangitis involving the ducts of the liver; still another is estab-

lishment of biliary fistulæ in different situations in the abdominal cavity. Atrophy of the gallbladder is not infrequent; in some instances the gallstone is so large as to obstruct the bowel when discharged into it. Medical treatment is at best palliative, and it is not worth while to lose time; operation on the gallbladder is practically as free from danger as appendicectomy, if done early.

Renal Diabetes Possibly Traumatic in Origin.—S. Strouse and A. H. Beifeld describe the case of a healthy young man of twenty-three years in whose urine glucose was accidentally discovered during a life insurance examination. This was about one year after a cranial trauma, but whether the two are related is entirely a matter of speculation. There were never any symptoms of diabetes mellitus. The excretion of dextrose has been practically independent of carbohydrate intake. While the patient was in Europe the blood sugar, twice determined in von Noorden's clinic, was found to be normal. Under conditions which in a man of his age would certainly intensify the symptoms and increase the severity of a true diabetes mellitus, he has continued to remain in perfect health; the urine has not taken on the characteristics of urine in diabetes. The clinical course of the case almost surely excludes the diagnosis of diabetes mellitus; it indicates renal diabetes.

Röntgen Rays in the Diagnosis of Gallstones and Cholelithiasis.—G. E. Pfahler remarks that gallstones can be shown only when they are composed of a substance of greater or less density than the surrounding tissues. This will usually mean that they must contain some lime salts, though the quantity may be small. His records show positive findings in seventy-four per cent., but he believes in general, one cannot count on more than fifty per cent. being demonstrable. A negative diagnosis he regards as at present of no value. With the improved technic, when we find the gallbladder small, and no stone, the negative diagnosis may be of some value. Estimation of the value of this method of diagnosis must be based on the work only of röntgenologists who have mastered a good technic and who are thorough in their work. Definite information will be obtained only by continued cooperation of the surgeon and röntgenologist. In the future, valuable information concerning the liver and spleen will no doubt be obtained by the Röntgen method of the author.

Effect of Operation on Kidney Excretion, Indicated by the Phenolsulphonephthalein Test.—F. B. Block, from a series of observations which he regards as entirely too small to be a basis of any definite conclusions, deduced the following: 1. The effect of ether anesthesia on healthy kidneys is practically nil, so far as reducing their excretory power is concerned. 2. Traces of albumin in the urine before operation should not give much concern, but clouds of albumin accompanied by casts should be considered seriously before the performance of elective operations. 3. Duration of anesthesia in any given case does not in itself signify the amount of injury which the kidneys will sustain. 4. The position of the patient on the table, character of the operation and administration of proctoclysis, have not shown any effect on the percentage of phenolsulphonephthalein excreted after operation. 5. However, in one third of the cases there is an increased excretion after operation.

MEDICAL RECORD.

April 25, 1914.

Nutritive Significance of Different Kinds of Foodstuffs.—L. B. Mendel observes that no single contribution to the science of nutrition has been more fruitful than the knowledge of calories. It was no small achievement to put the body's need for physiological fuel upon a definite basis, to give a concrete meaning to the energy factor in nutrition. We are fully justified in speaking of food as body fuel; in our studies of its utilization we may be confident that any food energy which does not reappear in the form of heat or work has not been lost, but has been stored up as chemical energy of meat, fat, etc., which may later serve to supply food energy. Among novelties are the chemical dissimilarities between different proteins. They vary among themselves in respect to the proportions of the aminoacids which they can yield. In speaking of special articles of diet, the author says: The case of red *versus* white meats is debated at less frequent intervals than formerly, and would scarcely deserve mention were not physicians the chief offenders in reviving it. A few years ago we learned to reject the belief in extraordinary virtues of meat extract. Today, while the justice of this attitude is admitted, a unique influence, newly recognized, of this product in provoking the flow of the digestive juices interpretates fairly the dietary role of soups and bouillon, and opens a new field for their application. In milk there are physiological virtues demonstrable which cannot be expressed in terms of energy.

Three Years' Clinical Work with a New Antiserum for Cancer.—W. N. Berkeley continues the report two years ago by Beebe and himself. The serum, generally unmodified except by inactivation, has been given in doses of five to fifty c. c., intravenously and subcutaneously, at intervals of a few days. Latterly, much more satisfactory results have been obtained with a serum concentrated by the method of F. J. Banszhaf. Eighty-nine cases were regularly undertaken. Several patients changed their minds after operation, and refused the serum. Several died of the immediate surgical procedure. In the author's early ignorance of the proper quantity, his first two patients received very small doses, and in both recurrence took place in six weeks. Three patients received one dose (five c. c.) only, and cannot be counted. This leaves seventy-one cases—thirty-two secondary or inoperable, and thirty-nine treated after primary operation. None of the cases classed as inoperable has been cured, but from the point of view of research, the results are of primary importance. Over two thirds of the cases made a favorable response for a time, and only six or eight entirely failed. Among cases treated after primary operation, with autogenous or stock serum (or both), there have been seven failures. The successful cases, those not recurring in nine months, of course, prove little; with some apparent cures the time elapsed since operation is two years, one year and eleven months, two years

and five months, two years and eight months, two years and one month, and two years and nine months.

Has the Tuberculosis Death Rate Declined Recently?—T. J. Mays questions the statistics of F. L. Hoffman in the *Transactions* of the National Association for the Study and Prevention of Tuberculosis for 1912, as to the decline in the tuberculosis death rate from 1871 to 1912. He asserts that a table which he has prepared from an analysis of these years, undoubtedly shows that the consumption crusade does not come up to the expectations which its sponsors hold out to the public. He says, if one thing stands out more prominently than another in this whole investigation, it is the uniform and overwhelming evidence that the prevention crusade is not only a failure as a prophylactic, but is really a provoker of the disease. If an insignificant number of the prognostications made in the last ten or fifteen years as to what the crusade would do, had materialized, tuberculosis would have become extinct long before now.

Tango Foot.—G. F. Boehme, Jr., reports that he has recently been consulted by a number of persons complaining of "pain in the front of the foot," and in every instance has found the same symptom complex, and on investigation has discovered as the constant cause the latter day dances. These call for great flexibility of the ankle, with much movement at this point throughout the various intricate steps. Hence there is a constant strain on the extensor muscles of the foot, which in turn produces a tenosynovitis in this muscle group; the commonest tendon involved being that of tibialis anticus. The treatment is to abstain from dancing, with limitation of the amount of walking exercise. For the simpler cases, massage with alcohol or soap suffices, in others daily painting with a mixture of the tinctures of aconite, belladonna, and iodine may be needed. Finally, baking daily for two or three days will remove the effusion in the tendon sheath and restore the foot to normal condition.

AMERICAN JOURNAL OF ORTHOPEDIC SURGERY.

January, 1914

Treatment of Tuberculous Coxitis.—R. Wern dorff advances the views of Lorenz in the treatment of tuberculous coxitis and discusses in full the advantages and disadvantages of the two methods of treatment, traction and weight bearing. The clinic physicians, after observing about 800 cases covering a period of over fifteen years, look upon ankylosis as the most desired end result of the mechanical treatment of coxitis; they prefer a functionally fit strong limb, in slight malposition, to a useless, atrophied, and sensitive one in a very good position.

Osteomyelitis at the Sacroiliac Joint with Gas Bacillus Infection.—Sydney M. Cone presents a case of osteomyelitis at the sacroiliac joint with gas bacillus infection in which, on post mortem examination, Bacillus aerogenes capsulatus and gas vacuoles were demonstrable in the medulla of certain selected bones of the region and in muscle, liver, and connective tissues. All laboratory work, as to infection previous to death, was negative. Cone suggests in similar cases making an anaerobic blood culture.

Celluloid Foot Plates.—Emil S. Geist follows Lange's method of using celluloid for foot plates in selected cases. He makes a plaster model of the foot and, after trimming and shaving, he builds a celluloid plate over the model which is incorporated by heavy tape and strips of band steel. The advantages of this method are that the plate is light, inexpensive, easy to make, and fits accurately.

Recumbency in Treatment of Pott's Disease.—George B. Packard emphasizes the importance of recumbency in the treatment of Pott's disease where the lesions are in the upper and middle dorsal regions, and in cases where abscess and paralysis are developing. He follows this plan of treatment with the added benefits of fresh air, etc., for one year and over, and gets excellent results, especially in children.

Pathology of Tabetic Arthropathy.—Leonard W. Ely is inclined to believe that a Charcot joint is a late syphilitic degeneration of the marrow and synovia, and is of opinion that the morbid process may exist in the marrow for a time without any symptoms, when suddenly the cartilage is perforated and the joint swells and fills with fluid. He urges the necessity of laboratory as well as clinical study.

Cervical Rib.—M. S. Henderson reports a series of thirty-one cases of congenital cervical rib deformities, demonstrating that they are usually bilateral and more common in women than in men. Only ten per cent. cause symptoms and then rarely before adolescence; the size of the deformity bears no relation to the severity of the symptoms. The variety of the symptoms is wide, the majority being caused apparently by pressure on the brachial plexus.

Joint Syphilis.—Archer O'Reilly presents in full twenty-six cases of joint syphilis and infers that the process is more common than supposed; he urges the necessity of the routine use of the Wassermann reaction and the x ray so as to clear away the diagnosis of syphilis from a possible tuberculous, rheumatic, or gonorrheal joint, or an osteoarthritis.

INTERSTATE MEDICAL JOURNAL.

April, 1914

Tuberculosis of the Liver.—L. S. Milne states that tuberculosis of the liver is by no means uncommon. Diagnosis is difficult; patients have almost uniformly complained, as their earliest symptom, of a dull, aching, and more or less continuous, deep seated pain in the epigastrium, uninfluenced by eating. The abdomen is slightly rigid and slightly tender on deep palpation everywhere, but particularly over the upper part. When the liver is extensively involved, jaundice usually occurs sooner or later. The temperature is generally typically tuberculous, and patients grow thin rapidly. Stools are usually fairly well colored; ascites occurs rarely. The cirrhotic liver is especially liable to tuberculosis, though in most reported cases of tuberculosis, and in such cases as the author has seen at autopsy, there has been no cirrhosis.

Alcohol Injections in Tuberculosis of the Larynx.—W. M. Bucher and W. B. Chamberlin

present a report covering all cases in which alcohol was injected into the superior laryngeal nerve. The relief of pain, and the salutary effect of increasing the ease with which food could be taken, were very marked. The facility and marked relief with which this treatment can be administered render it one of the most effective agents in tuberculosis of the larynx.

Open Air Schools in Relation to Tuberculosis.—J. V. Van Pelt concludes an article on this subject with the following words: The most encouraging thing that is shown by the canvass just made is the continued growth in number of open air schools. It not only means that fresh air in the school has come to stay, but that fresh air in the home and in the community will soon be on the increase. Those who have slept out of doors usually refuse to return to a stuffy bedroom, and we may feel well assured that as the children of the present generation grow to manhood and womanhood, they themselves will insist on fresh air, not only for themselves, but for their children and their children's children.

Feeding of the Tuberculous.—C. Rayevsky says that feeding will forever remain the most important element in the treatment of pulmonary tuberculosis. Several questions must be considered, the patient's palate, methods of serving food, amount of food, and the kind of food. To the last two, much attention has been given, while the first two have been dealt with but little; consideration of these is the object of his paper. To please the patient's palate is of the utmost importance in order that he may derive the most benefit from his food. There must be a rich variety to make it palatable and appetizing; dishes should at all times have a different flavor, and must be served in a dainty and attractive way. The question of arranging the patients in the dining room is also a matter of no small importance.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Thirty-fifth Annual Meeting, Held in New York, April 9, 10, 11, 1914.

The President, Dr. William J. Mayo, of Rochester, Minn., in the Chair.

The annual meeting of the American Surgical Association opened at the Hotel Astor, New York, Thursday, April 9th, and continued up to the end of the morning session on Saturday, April 11th. The gathering of well known surgeons was large, there being present in the neighborhood of four hundred from America and Canada. The convention took on almost an international aspect, owing to the fact that forty or more surgeons from Europe attended, having come in on the *Imperator* for the meeting of the International Society of Surgery. Numerous papers of considerable interest were read, including some by the foreign guests. A feature of the proceedings was the papers and discussions on cancer and its treatment, and authoritative statements were made with regard to the existing situation as to the cancer problem and the value of different modes of treatment.

Presidential Address.—Dr. William J. Mayo, of Rochester, Minn., took as the subject of his address, cancer, and gave a clear and convincing exposition of our present knowledge of the disease. He laid great stress upon chronic irritation as an important exciting factor in the causation of malignant growths and pointed out that the form of the malady which so frequently attacks the mouths of natives of certain parts of India is due to the irritation set up by the juice of the betel nut which they are continually chewing. Again, cancer of the groin was almost wholly confined to sailors and chimney sweeps for obvious reasons. As for malignant disease of the stomach, the radiologist had been able in 100 consecutive cases to make a definite diagnosis in eighty-seven per cent. The best that had been accomplished by other means was sixty-seven per cent. This method of making diagnoses should certainly be placed first in cases of malignant disease of the stomach and second in value among the tests for diagnosing obstructions of the duodenum.

Referring to the point that cancer of the stomach formed one third of the cases among civilized peoples, and was very much less frequent among savages and animals, he raised the question as to whether there were some fundamental faults in the food or in the cooking of it, that gave such a preponderance to precancerous conditions in the gastric region among civilized peoples. However, he was disposed to lay the blame for the prevalence of cancer more on the quantity of food eaten in civilized countries than on its quality. He thought that in accepting the theory that cancer was caused by chronic irritation in a large proportion of cases, and because of the fact that cancer of the stomach was the most prevalent form, the logical conclusion was that overeating was a predominant cause of the disease. A large number of skiagraphs of malignant growths of the gastric region were exhibited, to show that the usual course was that irritation caused ulcers which later became malignant. Some cases were shown in which cancer had begun of its own initiative and without previous ulcers or other growths.

Appendicitis.—Dr. George W. Crile, of Cleveland, read a paper on The Two Stage Operation, in which he stoutly defended this method. With respect to the two stage operation for appendicitis, discussion was somewhat vigorous. Dr. James F. Moore, of Minneapolis, said that in any event he was not greatly in favor of operations for appendicitis, considering that when such an operation was undertaken, it was an interference with the designs of the Almighty. Dr. A. G. Gerster, of New York, made the obvious retort that if that was true, all surgery was an interference with the designs of the Almighty. Doctor Gerster took the stand that he was opposed as a general rule to the two stage operation and said that he would rather, if he had to undergo an operation, take a little extra risk and have it all over at one time.

Other Papers.—At the afternoon session, papers were read by Professor Johan Nicolaysen, of Christiania, Norway, on The Value of Gluzinski's

Test in the Diagnosis of Gastric Ulcer; by Dr. George E. Brewer and Dr. Lewis G. Cole, of New York, on The Radiographic Diagnosis of Duodenal and Gastric Ulcer; by Dr. William L. Rodman, of Philadelphia, being A Further Report on Pylorectomy or Excision of the Ulcer Bearing Area; by Dr. Francis T. Stewart, of Philadelphia, on A Method of Gastroenterostomy after Gastrectomy; by Dr. John B. Deaver, of Philadelphia, on Chronic Pancreatitis; by Dr. John E. Summers, of Omaha, Suggestions Regarding the Anatomy of, and the Surgical Technic in the Treatment of Jonnesco's Membrane; by Dr. Edward Martin, of Philadelphia, on The Ileocolic Valve as a Factor in Chronic Intestinal Stasis; Operative Treatment.

The first paper read on Friday was by Dr. C. A. HAMANN, of Cleveland, Ohio, and dealt with the Ligation of the Innominate Artery, with Report of a Successful Case.

Surgery of the Heart.—Dr. ALEXIS CARREL, New York, read a paper on The Technic of Intrathoracic Operations, and a second paper entitled Experimental Operations on the Orifices of the Heart. Doctor Carrel took great pains to emphasize the fact that the operations on the heart were strictly experimental, which had been performed only on dogs, and were not applicable to human beings. Some of them might be available for the relief of human beings, perhaps not for twenty-five or fifty years, and some of them never.

In the course of experiments in 1913 and 1914 an attempt was made to develop a technic by means of which plastic operations on the pulmonary and aortic orifices of the heart could be performed without danger. As it was the object of these operations that they should be ultimately applied to human surgery, it was primarily necessary to accumulate about the operative procedure a number of factors of safety. It was not sufficient that a plastic operation should be possible; in order to be practicable it must also not be dangerous. In the cases of patients whose hearts were already in a weakened condition it was necessary that this technic be entirely innocuous to animals in good health. An attempt was therefore made to perform operations on the orifices of the heart, but without danger to the animal. The arresting of the circulation of the heart had already been performed in many different ways by various experimenters. They themselves had used all possible means of stopping the circulation through the heart. Finally they adopted the method of the clamping *en masse* of the pedicle of the heart by means of a large soft jawed forceps. The heart was not taken out of the pericardium, but the incision in the pericardium was large enough to permit of the easy introduction of one of the edges of the forceps under the pedicle. The forceps was a large Doyen forceps, the edges of which were covered with rubber. When the above mentioned precautions had been taken, it was possible to clamp the pedicle of the heart for two minutes and a half without any subsequent trouble. As soon as the clamp had been removed the heart resumed its pulsation and after a very short time the pulsations were again very regular. In no case were there any accidents, nor was there any need for massaging the heart when the interruption of the circulation did not exceed two to three minutes. This probably allowed of a considerable margin of safety, and it would doubtless be possible to prolong the operation somewhat without danger to the animals, but two and a half minutes appeared to be sufficient time for the performance of several operations on the valves. The valves were generally exposed by an incision of about four cm. made half on the pulmonary artery and half on the ventricle of the heart.

The opening of the ventricle or of the pulmonary artery and the aorta, was always followed by entrance of air into the heart. When the pulmonary artery and ventricle were opened, no special care was taken to empty the heart of air at the conclusion of the operation. The quantity of air was probably very small and the air emboli produced in the lungs were not dangerous. No accidents had ever been observed after the entrance of air into the right lung, but the introduction of air through the aorta into the left ventricle was very much more dangerous. It was therefore necessary for the safety of the operation to eliminate the possibility of such a complication. This could be done by aspirating the air contained in the heart by means of a large needle introduced into the ventricle and connected with a vacuum apparatus. Several kinds of operations had been performed. The sigmoid valves of the aorta had been exposed and cauterized. The pulmonary orifice had been cut after the wall had been patched with a piece of the vessel preserved in cold storage. The sigmoid valve and the pulmonary orifice had been exposed and sutured. These operations had been performed with the purpose of ascertaining whether they could be done in cases of inflammation, stenosis, or dilatation.

The results of these operations must be considered from two standpoints: 1. The dangers involved to the life of the animal, and, 2, general and local results. When the technic which has been described above was carefully followed out, the operation was of little danger to the life of the animal. In eight cases were performed the patching and the incision of the pulmonary orifice. Two dogs died, one of pericarditis after a few days. This was due to the fact that they had not followed the technic accurately on that day and handled the heart without rubber gloves. The other dog died on the operating table of fibril contraction of the heart. These operations were performed in October and November, and at present, i. e., at the beginning of April, the other animals were in normal condition. The purpose of these operations was to show how extensively a plastic operation on the heart could be done without danger to the life of the animal and they had succeeded in showing that during two and a half minutes comparatively complicated operations could be done inside the heart, and also that interruptions of the circulation for the space of two and a half minutes were not dangerous at all. It was undoubtedly possible to do more complicated operations than those performed in these experiments. The results were being published at the present time merely to show that plastic operations could be performed on the heart without danger. It was to be hoped that this technic

might by degrees be applied to human surgery, and it was not at all impossible that some day surgeons would be able to cauterize lesions of the valves and repair them as easily as they did today in their experimental operations.

Professor R. Proust, of Paris, France, read a paper dealing with heart wounds, Indirect Result of a Suture of the Heart Following a Wound by a Pistol Shot. It detailed the case of a boy, fifteen years of age, who was shot accidentally in the heart by a playmate. Doctor Proust, after cutting away parts of some ribs, made an incision into the pericardium and found in the sac a mass of coagulated blood as large as a man's fist. He extracted this through the incision and discovered the pistol ball lying at the bottom of the pericardial sac and removed that. On examination of the heart muscle itself, a wound was found in the front of the heart near the left border and quite close to the apex. He closed the wound with four deep stitches, covering these with another and more superficial series. Then the opening in the pericardium was stitched, the shattered chest wall was repaired, and in a month's time the boy was discharged from the hospital cured.

Abscess of Liver.—Dr. James E. Thompson, of Galveston, Texas, read a paper on The Pleural and Pulmonary Complications of Tropical Abscess of the Liver, describing the symptoms and explaining the directions in which infection was likely to spread, sometimes by immediate infection from liver to lung and very rarely by embolism.

Empyema.—Dr. K. A. J. Mackenzie, of Portland, Oregon, read a paper on Double and Anomalous Forms of Empyema, and gave a vivid description of these forms of empyema, especially of a case of anomalous empyema which occurred in a Japanese. He had observed many cases of beriberi with pleuritic symptoms.

Dr. Charles Mayo and Dr. E. H. Beckman, of Rochester, Minn., contributed a paper on Visceral Pleurectomy for Chronic Empyema, read by Doctor Beckman. This paper was mainly concerned with the discussion of the relative merits of the operative measures employed for the relief of this condition. Estlander's resection operation was referred to and the modified form of this operation employed by many. Power's operation for the removal of the thickened pleura was favorably commented on and the opinion was expressed that the operation had not received from the American surgeons the attention which was its due. It was pointed out that unless badly diseased a lung would expand and that a collapsed lung would not infrequently expand after some months. For the relief of chronic empyema an operation similar to that performed first by Power and Delorme, was done at Rochester, Minn.; pleurectomy was not so dangerous as an operation divided into several stages.

Surgery of the Joints.—Dr. J. B. Murphy, of Chicago, dealt with arthroplasty for ultraarticular bony and fibrous ankylosis of the mandibular articulation, with a report of nine cases. Doctor Murphy, after describing how infection causing this condition might come about, and pointing out the characteristic diagnostic features, explained the technic of the operation. He showed illustrations of several individuals upon whom he had operated with a greater or less degree of success, and observed that it was lamentable to see the large number of persons who were walking about the country with fixed jaws, when the trouble was really so easy to overcome. The operation was as easy as that for appendicitis.

Doctor Juarez, of Leipsic, Germany, gave some of the results in the treatment of ankylosis of the knee joint and said that out of twenty-three cases he had had sixteen good results. Some officers of the German army whom he had treated, had been able to take up their duties and ride on horseback. He had found that he had to pick out energetic people if he was to be successful in curing fixed joints.

Cancer.—Dr. Joseph C. Bloodgood, of Baltimore, read a paper on Cancer of the Tongue Based on One Hundred Cases. He emphasized the point that in treating cancer of the tongue by operation, it was necessary, in order to have any hope of a successful issue to remove the floor of the mouth. The failure to do this explained why so many operations had been unsuccessful. He gave as an instance, the case of a man who came to him with cancer of the tongue in a very advanced stage. He removed the floor of the mouth and all the diseased parts, and although the man was horribly mutilated he lived for twenty-three years after the operation.

Visceral Pleurectomy.—Doctor Ranoshoff did not believe that the thoracic cavity could be opened with impunity on account of shock. There was an enormous degree of shock in opening the chest cavity. Local anesthesia was advisable when the chest cavity was opened in order to modify shock, and since he had used this method he had had better results. Too rapid removal of the fluid was detrimental and blowing out the fluid rather than aspirating was the preferable procedure. Schede's operation was much discussed and opinions differed as to its value. Dr. J. B. Murphy had recommended the injection of formalin in cases of empyema, but this should never be done if the empyema was connected with the bronchus.

Doctor Mackenzie deprecated the prevalence of operative measures on the chest and gave as his opinion that there were far too many heroic operations on the lungs. Dr. Charles Mayo thought that simple measures ought to be employed to prevent cases of this nature from becoming serious.

Gastroenterostomy.—Dr. Henri Hartmann, of Paris, France, read a paper on The Function of the Gastroenterostomy Opening in Cases of Permeable Pylorus, and said that it was generally accepted that in the presence of a permeable pylorus the gastrojejunal opening was inclined to obliteration in consequence of its physiological uselessness. These two affirmations seemed to him mistaken. The gastrojejunal stoma well lined by mucous membrane, without ulceration, without any scar tissue remained permeable forever. The occlusion of the gastrointestinal stoma had been observed as often in cases of pyloric stenosis as in any other case and its obliteration was in no way connected with the greater or less degree of permeability of the pylorus. There was no more fear of anatomical obliteration of the gastrojejunal stoma in the case of a permeable pylorus than in any other case. These stomata

were physiologically useful when they were established in the pyloric antrum in the neighborhood of the greater curvature.

Splenectomy.—Dr. J. M. T. FINNEY, of Baltimore, said that at the Johns Hopkins Hospital during the year they had had some cases of extirpation of the spleen. One person on whom he had operated, he had found to have a double spleen. Another patient whose spleen had been extirpated had been kept alive for a year by repeated transfusions and was at the present time to all seeming absolutely well.

Radium.—Dr. RICHARD SPARMANN, of Vienna, a member of the clinic of Dr. Anton von Eiselsberg, who was unable to attend the convention, read a paper on the value of radium in the treatment of cancer. Forty-two patients with malignant tumor had been treated with radium at the Eiselsberg clinic; of these seventeen died, five from causes other than tumor; six were benefited, five cases showed no effect, fourteen cases were positively aggravated. Their experience in Vienna showed that it was effective only in superficial cases of malignant tumor and even then it was effective in no marked degree. Radium had actually made worse many bad tumors by destroying healthy tissue around them so that there was nothing left to check the tumor's spread. There had been no specific change in tissue by radium, and it did not appear that it would ever replace operation in the treatment of cancer. The hopes that had been placed in radium had not been realized.

Dr. ROBERT ABBE, of New York, said that carcinomatous tumors were destroyed by radium, not by specific action but by necrosis. It was essential, however, not to overdose with radium, as if too much was given it might be harmful to health, although an overdose often did no more than cause a local irritation. But this did not affect the true value of radium. He thought that radium had a specific action on round cell sarcoma and other tumors, but he used the word specific guardedly. He pointed to myoid tissue as an example of the specific action of radium. Radium would so act on tumorous myoid tissue as to drive it back to its normal condition. It restored the cellular structure and this must be specific action. The speaker described the effect that radium had had on the case of a bone destroying tumor on the top of the head. He had tried to obtain a sample of that tumor on Thursday, but nothing was left but harmless tissue like blotting paper. Finally, he would say nothing about cancer or of radium curing cancer, but it did act specifically and it was this that ought to be studied.

Dr. KENNETH A. J. MACKENZIE, of Portland, Oregon, said that he had used a small radium equipment on tumors and cases of carcinoma for several years with complete success.

Cystic Disease of the Breast.—Dr. ROBERT E. GREENOUGH and Dr. CHANNING C. SIMMONS, of Boston, presented a paper on The Results of Treatment of Cystic Disease of the Breast which was read by Doctor Greenough. After pointing out that cystic disease was often the precursor of carcinoma, perhaps in ten per cent. of the cases, the operative measures were discussed. Stress was laid on the point that when any suspicion of cancer existed, local excision was of no value and removal of the breast was indicated. Plastic section might be practised in the earliest and mildest type of cystic disease of the breast.

Dr. JOHN M. T. FINNEY, of Baltimore, said that in his experience he had found cystic disease of the breast most common in private practice. He further gave it as his opinion that it occurred most frequently in married women with no children and in married women with one child who did not nurse it. He declared that married women with large families were free from it. Dr. Charles Mayo rather objected to the radical operation on account of the dislike women had to breast mutilation and had expressed himself somewhat in favor of the Warren operation. Most surgeons, however, appeared to favor radical measures when there appeared to be the slightest suspicion of cancer.

Association Dinner.—The New York members of the association gave a dinner at the Hotel Astor on Thursday evening, April 9th, in honor of the visiting associates. Owing to the long day's work that had been undergone and doubtless with due regard to the somewhat laborious duties ahead, the wise decision was adopted, to make the dinner purely social, and technical subjects were strictly tabooed. More than one hundred guests attended the dinner. On the whole, the meeting just passed has been one of the most successful from all points of view which has taken place in the history of the American Surgical Association.

Election of Officers.—Dr. George A. Armstrong, of Montreal, Canada, was elected president for the ensuing year; Dr. Lewis S. Pilcher, of Brooklyn, and Dr. Frank E. Bunte, of Cleveland, vice-presidents; Dr. Robert G. LeConte, of Philadelphia, secretary; Dr. Charles L. Gibson, of New York, treasurer; Dr. Archbald MacLaren, of St. Paul, recorder; Dr. W. J. Mayo, of Rochester, Minn., Dr. A. G. Gerster, of New York, and Dr. Charles A. Powers, of Denver, members of the council.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twenty-sixth Annual Session, Held at Atlanta, Georgia, December 10, 11, 12, 1913.

The President, Dr. JOHN YOUNG BROWN, of St. Louis, in the Chair.

(*Continued from page 905.*)

Pyloric Stenosis in Infants.—Dr. JAMES F. MITCHELL, of Washington, D. C., stated that autopsy reports and operation protocols were uniform in their description of a pyloric tumor which was always present, hard, and free from adhesions to surrounding parts. The whole pyloric stem was thickened and in cases of long standing the stomach might be dilated and its walls hypertrophied. On inspection, the pyloric thickening was found to be due almost entirely to an enormous development of the circular muscle fibres, an increase in both size and number. The lumen varied, but in marked cases with difficulty admitted the finest probe. The etiology was purely speculative, the two leading views being, first, that it was a congenital anomaly which progressed after birth, and secondly, that

there was some primary irritation with consequent spasm and hypertrophy. Kaupe, in 1909, after a careful study of 346 articles bearing on this point, concluded that the etiology was still a mystery.

The clinical picture was well established and so characteristic that, having seen one typical example, a second was not likely to be overlooked. The diagnosis in his second case was made by the attendant who had observed the first in its hospital course. Nearly all were described as having been healthy at first; eighty per cent. boys, and the majority first born and breast fed, although Rammstedt had recently reported an operative case, which was in the third child in one family to have the same condition.

In many cases a hard tumor could be palpated at the site of the pylorus. This observation varied with different reporters from twenty-five to seventy-five per cent. He could not definitely feel a pyloric tumor in any of his three cases examined without an anesthetic. The diagnosis could usually be made on the foregoing signs and symptoms; but it must be remembered that these varied with the degree of stenosis and that in consideration of the treatment, pyloric spasm without stenosis should, if possible, be excluded. The bismuth radiograph was of great assistance in the diagnosis. Surgically, various procedures had been used, such as pylorectomy, divulsion, pyloroplasty, and gastroenterostomy. It was generally conceded that pylorectomy was too formidable. Divulsion offered evident difficulties. The ordinary pyloroplasty was unsatisfactory because of the unyielding structure of the pylorus, and Finney did not consider his operation applicable. In this country posterior gastroenterostomy had been so universally employed as to be looked upon as the operation of choice. His own experience had been limited to three cases. All came to operation early, only one baby having reached any degree of emaciation, weighing five pounds, six ounces, a loss of over three pounds since birth. Two babies were operated on at seven weeks and the third at six weeks of age. A posterior gastroenterostomy was done in each instance. The pylorus always presented the typical stony hard, olive shaped tumor with apparent occlusion of the lumen. They were now healthy, normally developing children, three and one half years, two and one half years, and eight months after operation.

New Instrument and Method for Removing Varicose Veins.—Dr. Mack Rogers, of Birmingham, Alabama, stated that although his instrument seemed to be an ordinary flexible probe with a handle, on examination it would be found that it was not flexible, but rigid in order to avoid the pockets and sinuses in the walls of the veins and to follow more readily the tortuous course of its lumen. Just in front of the handle there was a distinct shoulder to prevent the ligature from slipping back over the handle. The handle was also very small that it might pass more readily through the lumen of the vein. An ordinary gynecological standard would afford elevation and support for the foot with the leg extended.

A buttonhole incision was made about three inches below the saphenous opening, transversely to the vessel. The vein was picked up, divided, and the proximal end was ligated and dropped back. The point of the instrument was now inserted into the distal end of the vein and the probe was gently passed down through the lumen of the vessel till the shoulder of the instrument met the cut end of the vein; now a secure ligature was passed around the vein near its cut end, causing it firmly to embrace the probe just in front of the shoulder; now the instrument was again gently passed down as far as the tissues around the shoulder or the obstructions in front of the point would permit. The point of the instrument was now elevated beneath the skin, and a second buttonhole incision was made over the point of the probe, the same as the first. The vein in the bottom of this incision was again divided, and the point of the instrument was forced out through this second opening and was caught by a pair of clamp forceps.

While the assistant supported the skin and subcutaneous tissues on each side of the instrument, the operator, by successive backward and forward movements of the forceps holding the tip of the probe, would gradually strip off the tributaries and surrounding tissue, as the vein was turned inside out on the handle of the instrument as it was dragged down through the lumen of the vessel until it emerged from the second buttonhole incision. This process was repeated till all vessels needing it had been removed. Whatever hemorrhage might theoretically occur from the lacerated tributaries, was controlled by their own elasticity and the pressure exerted by the hands of the assistant on each side of the instrument at the time. Sometimes the vein broke before it could be removed. This occurred when the tributaries were unusually large and numerous. This also occurred in cases where the walls of the vessels had become thickened and adherent to the surrounding tissues. When this break did occur a new buttonhole should be made at the point where the vein gave way and another effort should be made to remove it. If, however, this attempt was not successful, open resection should be resorted to till this particular obstruction had been passed over, then the subcutaneous method should be employed.

Postoperative Acute Dilatation of the Stomach.—Dr. E. P. Hogan, of Birmingham, Alabama stated that his limited observation of the prone position had not been satisfactory. In his judgmen this position was inconvenient and uncomfortable. He had used the following treatment in his own cases: 1. The stomach tube was inserted and the stomach emptied of all contents and irrigated with normal salt solution until the water returned clear. 2. The patient was placed in the horizontal right lateroprone position. This position was in every way convenient and comfortable. 3. Continuous proctoclysis was given. 4. Everything by mouth was excluded until symptoms were entirely relieved. 5. Strychnine and sparteine were given. 6. If the patient was not prostrated and was nervous and restless, sufficient morphine was given to produce comfort and sleep. With this treatment, some cases would give no further trouble. In others it might be necessary to repeat the washing of the stomach and morphine some four to twelve hours later. It should be repeated as often as indicated.

Intestinal Resection; Successful Removal of More than Twelve Feet of Bowel, with Observations on the Subsequent Metabolism.—Dr. RAYMOND C. TURCK, of Jacksonville, Florida, read this paper, which appeared in the NEW YORK MEDICAL JOURNAL for February 14, 1914.

Immediate Repair of Perineal Lacerations.—Dr. GREER BAUGHMAN, of Richmond, stated that the plan devised by Dr. Charles R. Robins, in 1909, and used in his series of cases was as follows: The procedure was simple, the most important things to consider being a good light and a good exposure of the torn area: The patient was placed on her back with the thighs flexed on left abdomen and held in place with a suitable support like the Robb-Kelly strap. The vagina was cleansed of clots and the upper part packed with sterile gauze or cotton, so as to make the field of operation as bloodless as possible. Then a good light was thrown into the vagina. Robins recommended sewing the mucous membrane and submucous fascia of the vagina to the mucous membrane and submucous fascia of the opposite side of the tear with a continuous chromicized catgut suture. Care must be taken not to catch the muscles with the suture. The suture began at the upper part of the tear in the vagina and was continued down toward the vulva, uniting the mucous membrane and fascia with a continuous running suture, the operator trying to match the part of one side to that from which it had been torn. This restored the shape of the vagina (the vaginal sheath). After the vulva had been reached, the suture and needle were laid in the vagina to be used later to unite the skin with a continuous suture. If there happened to be another tear in the vaginal sulcus or median line, which was almost always the case after the use of forceps, that tear was sewed, the mucous membrane and fascia to the mucous membrane and fascia of the opposite side, and when the vulva was reached, the suture was temporarily laid aside.

Then the crown sutures of silkworm gut were put in from the skin surface, just as usually done, slanting downward and backward; but the rectum should not be entered, as sometimes happened, unless one felt in the rectum with a gloved hand. It was well to pull the wound well forward with the sutures before tying, to see the perineum was well cared for; then they were tied. The catgut suture that was stopped at the opening of the vulva was then picked up with a continuous suture, the denuded surfaces were brought into apposition and the suture continued down the skin.

If the rectum had been torn, the sphincter ani might be caught and brought together by a silkworm gut suture introduced into the skin just above the rectum, passing through the muscle, and out at the other side through the skin. A similar suture just above the mucous membrane of the rectum, introduced from the skin, passing around the tear in the rectum, and coming out on the skin of the opposite side, would draw the mucous membrane down like pursestring. When the work was aided by a good light the sewing was well nigh perfect.

Catgut as a Skin Suture.—Dr. WILLIAM PERRIN NICOLSON, of Atlanta, stated that the use of catgut as a skin suture had been opposed and rejected by many surgeons on account of objections which could be overcome. It was alleged that it became a safe suture just in proportion as the integrity of the skin was not damaged by excessive efforts at disinfection, and that a skin simply prepared would handle catgut as safely as any form of suture. The ideal condition surrounding an operative wound was that it should be made under aseptic conditions and closed with a suture which could in the end be disposed of by the tissues, thus permitting the original dressing to remain in place until healing was complete. Such a condition could occur only under the use of catgut sutures in the skin. The two objections urged against the use of such a suture had been, first, that the animal suture became a good culture medium for the bacteria in the skin, and second, that too early absorption might permit the wound edges to gape before healing had taken place. It was stated that the first condition was largely overcome by simple cleansing of the skin, which consisted of washing with soap and water and alcohol, and afterward applying tincture of iodine upon the perfectly dry skin, and this permitted to remain for about two minutes, after which it was washed off with alcohol. The second was overcome by the use of twenty day chromic catgut. The size employed was the OO under ordinary conditions, and perhaps a little larger size where there was more strain upon the wound. The method of closing wounds advocated was the continuous running suture placed at intervals of from one half to three fourths of an inch and passing beneath the skin into the subcutaneous fat, which permitted the wound line to fall into perfect apposition, while at the same time the edges could be pulled apart at any point between the stitches. This permitted of drainage directly between the wound edges into the dressings, doing away with the necessity for a drain, while the blood serum drying in the gauze next to the wound made a perfect aseptic covering, practically impervious to air and water. Such wounds might be left without disturbance until healing was complete, when the dressing was removed permanently. All classes of wounds, including scalp wounds, hernia operations, breast amputations, kidney operations, were closed thus with chromic catgut and left until healing was complete. The catgut employed was that sterilized without chemicals, as it had been found that those sutures which contained iodine and mercurial salts had proved irritating to the tissues immediately surrounding the suture.

In conclusion, it was averred that such a condition removed the dread that every patient naturally had of the removal of stitches and change of dressings, and did away with the danger of infection, however remote, which attended upon exposure of the wound for the purpose of dressing and removing sutures.

Other Contributions.—Among others, the following papers were also read: Hysterectomy, by Dr. A. C. Scott, of Temple, Texas; A Study of the Causes of Unsatisfactory Results Following Operation on the Biliary Tract, by Dr. J. M. T. Finney, of Baltimore; Ultimate Results in Eight Cases of Colectomy for Fecal Stasis, by Dr. John G. Clark, of Philadelphia; Heredity in Bone Lesions, With the Report of an Unusual Family History, by Dr.

Joseph Ransohoff, of Cincinnati; Ankylosis of the Jaw, by Dr. V. P. Blair, of St. Louis.

Election of Officers.—President, Dr. John Wesley Long, of Greensboro, North Carolina; vice-presidents, Dr. A. C. Scott, of Temple, Texas, and Dr. James F. Mitchell, of Washington, D. C.; secretary, Dr. William D. Haggard, of Nashville, re-elected; treasurer, Dr. Le Grand Guerry, of Columbia, South Carolina, reelected.

Asheville, North Carolina, was selected as the place for the next meeting.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Tropical Medicine and Hygiene. By C. W. DANIELS, M. B. Cantab., F. R. C. P. Lond., Lecturer on Tropical Diseases, London Hospital, London (Royal Free) School of Medicine for Women; Physician, Albert Dock Hospital, Seamen's Hospital Society, etc. In Three Parts, with Colored and other Illustrations. Part I. Diseases due to Protozoa. Second Edition. New York: William Wood & Co., 1913. Pp. xv-277. (Price, $3.)

To the English belongs the credit of having made the more important observations on tropical diseases. To them the subject has been of vital interest, owing to their tropical possessions. In the United States the interest in tropical medicine was awakened with the acquisition of our new possessions, and the American genius found ready expression in what may be considered as the classical experiment—the work of the United States Yellow Fever Commission. From the first observations on the transmission of filaria by Manson to the latest achievements of Colonel Gorgas in Panama, there is a comparatively brief period, but during these few years so much positive knowledge has been acquired and so much progress made as to place the study of tropical medicine among the foremost achievements of the human mind.

The book before us, written by an Englishman, presents the essential facts in a concise and authoritative manner and yet with sufficient practical detail to render it of exceptional value to the physician who is interested in tropical diseases. The principal tropical maladies are discussed from the standpoints of etiology, clinical manifestations, pathological anatomy, mode of transmission, prophylaxis, and treatment, while a special chapter is devoted to a discussion of the protozoa and other animal parasites. The numerous illustrations are excellent, and the publishers have done their part to make the book as attractive as it is instructive.

The Anatomist's Notebook. A Guide to the Dissection of the Human Body By A. MELVILLE PATERSON, M. D. Edin., F. R. C. S. Eng., Professor of Anatomy in the University of Liverpool; Examiner in Anatomy, University of London, Conjoint Board (Royal Colleges of Surgeons and Physicians), Indian Medical Service, etc.; Formerly Examiner in the Victoria University, and in the Universities of Cambridge, Oxford, and Durham. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1914. Pp. 351. (Price, $2.)

To a man afflicted with a slight defect of memory, who knows anatomy and wishes to excite his recollections, this book can safely be recommended. In saying this we mean no disrespect; the work is admirably done and beautifully printed, and it should give the greatest pleasure and instruction to those who have already made dissections in a European laboratory. But such a book presupposes a considerable knowledge of dissection; it gives the method of the professor, the practical art of anatomy by an expert. The main feature is the masterly unfolding of each step in dissection; from the first superficial incision down to the more delicate strokes we are enabled to see every part in order. To this method the book owes much of its special merit. It would be a good thing if students, not only in their undergraduate days, but afterward, studied the method more fully; they could learn much from its rules and illustrations, a remark which extends to hospital physicians and medical experts.

Women and Morality. By A MOTHER. *Men and Morals.* By A FATHER. *The Sexes Again.* By C. GASQUOINE HARTLEY (Mrs. WALTER F. GALLICHAN). Introduction by WALLACE RICE. Chicago: The Laurentian Publishers, 1914. Pp. xii-102.

This book consists of three letters or essays published in the *English Review* for July, August, and September, 1913, together with an introduction by the editor. The letters are extremely plain spoken on various aspects of the sexual problem as it exists in Christian civilization, and, as the remedies suggested require for the most part doing away with the modern marriage relation and substituting a sort of trial marriage, they are likely to be read with impatience if not with horror by the average lay person. To a highly educated pagan, a Japanese prince, for example, or a Chinese nobleman, the theories advanced might seem well worth trying, but to the average devout member of one of our State legislatures, for example, they will be shocking. The letters have considerable interest, however, in showing how these matters are agitating the public mind, especially how women are discussing them freely and with a view of undertaking their solution. The simplest of the remedies proposed for one problem is the legitimizing of all children, while a sort of corollary to this demands that the mistress shall be provided for, if she becomes a mother and relations with her cease.

Précis de Bactériologie. Par le Dr. CH. DOPTER, Médecin major de première Classe Professeur au Val-De-Grace, and le Dr. E. SACQUEPÉE, Médecin major de première Classe Professeur agrégé du Val-De-Grace. Avec 323 figures noires et coloriées. Paris: Librairie J. B. Baillière et Fils, 1914. Pp. vii-938.

The authors in some 900 pages review in a very thorough and painstaking manner the field of bacteriology and of the various microparasites pathogenic to man. The chapters on the organisms of diphtheria, tuberculosis, and syphilis are particularly good, but the others scarcely suffer by comparison. The first one hundred pages are devoted to the biological activities of the organisms, while about one hundred and fifty are given up to laboratory technic. The illustrations are numerous and good and the book in general is one that can be recommended.

Clinical Laboratory Methods. A Manual of Technique and Morphology, Designed for the Use of Students and Practitioners of Medicine. By ROGER SYLVESTER MORRIS, A. B., M. D., Associate Professor of Medicine in Washington University, St. Louis, Formerly Associate in Medicine, Johns Hopkins University, etc. New York and London: D. Appleton & Co., 1913. Pp. xx—343. (Price, $3).

Although the profession is being somewhat too liberally supplied with works on clinical laboratory methods, this little work merits recognition owing to the clearness with which the principal procedures are described. In each instance, in order to facilitate the work of the student and practitioner, the author emphasizes the one method which has given the best results. The urine, gastric juice, feces, sputum, blood and puncture fluids are thus reviewed in turn. The book contains a number of excellent illustrations.

Interclinical Notes.

P. Blakiston's Son & Co., of Philadelphia, will soon publish a volume on the ills engendered by vocations and avocations, under the editorship of Dr. George M. Kober, of Washington, and Dr. William C. Hanson, of Boston. Contributions to the work are promised by Sir Thomas Oliver, as well as by Legge, of London; Teleky, of Vienna; Deroto, of Milan; Edsall, of Harvard University; Alice Hamilton, of Chicago; and others.

* * *

We are informed that Dr. S. R. Klein is preparing a three volume work on chemistry, pathology, and bacteriol-

ogy, to be published in the German language by the Gustav Fock Buchhandlung, Leipsic, and to embrace contributions from Ehrlich, Wassermann, Weichselbaum, Paltauf, Wohl, Babes, von Eötvös, etc. Such a work, if properly carried out, would be a notable addition to American contributions to medical science, for books seem to belong to the nationality of their editors.

* * *

We certainly have our own troubles in proofreading; still, we should be very much ashamed if we made such obvious blunders as those noted in the *China Medical Journal* for January, 1914, as occurring in an edition of Gray's *Anatomy*, published in the Chinese language. The reviewer observes:

> NOTE:—The new issue of Whitney's Gray seems to follow the old pretty closely, and perpetuates such errors as 系胰 for nerve cell instead of 腦胰 (系 simply refers to the nerve strands). The elements of the nervous system (腦部) are the cells (腦胰) and the fibers 腦絲). Until the second edition of the Lexicon comes out, teachers and students should follow the anatomical terminology of the Atlas.

We could never hold up our heads again if we had passed such obvious errors as *strands* for *cells*, or had confounded *cells* and *fibres*. These slips are inexcusable in a language containing scarcely 30,000 characters.

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When Swords Become Plowshares, an editorial article in the *Dial* for April 1st, was written before we started for Mexico and we fear that now the writer is less hopeful of speedy accomplishment of this long hoped for bit of blacksmith's work. There is commendation for Professor Canby's strictures on the slipshod English of our men and women and criticism of his use of "blame" for "lay the blame."

* * *

Pearson's Magazine is about the liveliest periodical that we see; the issue for May does not allow the interest to drop. The text is so novel and so fiery that pictures would be an impertinent intrusion. We believe that our friends would like the sort of reading supplied by *Pearson's*, whether they always agreed with it or not. Whenever you feel satisfied with things in general, it is good to read the views of people who are thoroughly discontented; it will make you think.

* * *

The *Metropolitan* for May contains one of the remarkable studies of the boy mind by Booth Tarkington; this one is called Penrod, Psychologist. There has been nothing better since *Tom Sawyer*, and it is reassuring to note that our supposedly sophisticated youngsters are just as boylike as the Missouri product of 1835. Maurice Maeterlinck discusses the Elberfeld horses; the article is not concluded, but we fear that the writer is a hopeless poet and no more qualified to analyze a trick than is a great scientist. This is a beautiful magazine and the illustrations are exquisite.

Meetings of Local Medical Societies.

MONDAY, *May 11th.*—New York Ophthalmological Society; Society of Medical Jurisprudence, New York; Roswell Park Medical Club, Buffalo; Williamsburg Medical Society, Brooklyn; New Rochelle Medical Society.

TUESDAY *May 12th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); Associated Physicians' Economic League of New York; Medical Society of the County of Schenectady; Medical Society of the County of Rensselaer; Buffalo Academy of Medicine (Section in Medicine); Newburg Bay Medical Society; New York Obstetrical Society (annual); Onondaga Medical Society.

WEDNESDAY, *May 13th.*—New York Pathological Society; New York Surgical Society; Alumni Association of Norwegian Hospital, Brooklyn; Schenectady Academy of Medicine; Medical Society of the Borough of the Bronx; Richmond County, N. Y., Medical Society; Dunkirk and Fredonia Medical Society; Rochester Academy of Medicine; Brooklyn Medical Association.

THURSDAY, *May 14th.*—New York Academy of Medicine (Section in Pediatrics); Gloversville and Johnstown Medical Association; Physicians' Club of Middletown; West Side Clinical Society, New York; Brooklyn Pathological Society; Blackwell Medical Society of Rochester; Jenkins Medical Association, Yonkers (annual); Buffalo Ophthalmological Club; Jamestown Medical Society; Society of Physicians of Village of Canandaigua; Cayuga County Medical Society.

FRIDAY, *May 15th.* New York Academy of Medicine (Section in Orthopedic Surgery); Mount Vernon Medical Society (annual); Clinical Society of the New York Post-Graduate Medical School and Hospital; New York Microscopical Society.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending April 29, 1914:

Banks, C. E., Senior Surgeon. Directed to proceed to Manitowoc, Wis., for the purpose of making an investigation of the water system of the steamer *Iowa* and advising with officials of the Goodrich Line. **Fox,** Carroll, Surgeon. Granted one day's leave of absence, April 14, 1914. **Goldberger,** Joseph, Surgeon. Directed to inspect such insane asylums and other institutions and localities in Georgia, Alabama, Florida, Kentucky, and other southern States as may be necessary to inaugurate studies of institutional prevalence of pellagra and its cause. **Guiteras,** G. M., Surgeon. Upon request of the secretary of the navy, approved by the President, April 21, 1914, directed to proceed to Vera Cruz, Mexico, and report to the commander in chief of the fleet for such duty as he may assign. Detailed as medical officer of the port of Vera Cruz. **Gwyn,** M. K., Surgeon. Granted two days' leave of absence on account of sickness, April 9 and 10, 1914. **Jones,** W. M., Assistant Surgeon. Directed to report to the commanding officer of the Revenue Cutter *McCulloch* at San Francisco, Cal., May 1, 1914, for duty in the summer cruise in Alaskan waters. **Krulish,** E., Passed Assistant Surgeon. Granted twenty-four days' leave of absence en route to Juneau, Alaska. **Pierce,** C. C., Surgeon. Directed to proceed to Germantown, Md., April 24, 1914, for the purpose of delivering a lecture on rural sanitation. **Rucker,** W. C., Assistant Surgeon General. Directed to proceed to Baltimore, Md., for the purpose of delivering an address before the Merchants' and Manufacturers' Association on the subject of typhoid fever, April 28, 1914, at 8 o'clock p. m. **Schereschewsky,** J. W., Surgeon. Granted ten days' leave of absence from April 17, 1914. **Simpson,** Friench, Passed Assistant Surgeon. Granted five days' leave of absence from April 13, 1914. **Smith,** F. C., Passed Assistant Surgeon. Detailed to represent the Service at the meeting of the National Association for the Prevention and Study of Tuberculosis, to be held in Washington, D. C., May 7 to 9, 1914. **Taylor,** H. A., Technical Assistant. Directed, upon receipt of instructions from Surgeon R. H. von Ezdorf, in charge of malaria investigations, to proceed from time to time to such places in the Southern States as he may designate for the purpose of making malaria surveys, collecting specimens, etc. **Von Ezdorf,** R. H., Surgeon. Upon the request of the secretary of the navy, approved by the President, April 21, 1914, directed to proceed to Vera Cruz, Mexico, and report to the commander in chief of the fleet for such duty as he may assign. **Waring,** C. H., Acting Assistant Surgeon. Directed to proceed to Milledgeville, Ga., for duty in connection with epidemiological studies of pellagra under the direction of Surgeon Joseph Goldberger. **Warren,** B. S., Surgeon. Granted five days' leave of absence, returning to station from New Orleans, La. **Wickes,** H. W., Surgeon. Authorized, when occasion arises, to direct one of the officers engaged in immigration work at Boston, Mass., together with a clerk, if necessary, to proceed to New Bedford, Mass., to assist in the examination of arriving immigrants. **Willets,** David G., Technical Assistant. Directed to proceed to Milledgeville, Ga., via Washington, D. C., for duty in connection with the investigations of pellagra.

Boards Convened.

Board of medical officers convened to meet at Portland, Maine, for the reexamination of an alien certified for trachoma. Detail for the board: Surgeon W. P. McIntosh, chairman; Surgeon H. S. Mathewson, member; Acting Assistant Surgeon A. F. Stuart, recorder.

Board of medical officers convened to meet at Buffalo, N. Y., for the reexamination of two aliens certified for trachoma. Detail for the board: Surgeon C. H. Gardner, chairman; Acting Assistant Surgeon W. L. Savage, member; Acting Assistant Surgeon W. K. O'Callaghan, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending May 2, 1914.

Bell, Joseph L., First Lieutenant, Medical Reserve Corps. Ordered to duty on account of emergency and will report in person to the commanding general of the Western Department for assignment to duty. **Bell,** J. R., First Lieutenant, Medical Reserve Corps. Ordered to Nogales, Ariz., for duty with Twelfth Infantry. **Birmingham,** Henry C., Colonel, Medical Corps. Ordered to Washington, D. C., for consultation with the surgeon general, and then to return to his proper station. **Flynn,** James C., First Lieutenant, Medical Reserve Corps. Ordered to active duty at Fort Crockett, Texas, on account of an emergency. **Jones,** Harold W., Captain, Medical Corps. Will proceed to Texas City, Texas, for temporary duty with Ambulance Company No. 3. **Kennedy,** James S., First Lieutenant, Medical Reserve Corps. Will proceed to Galveston, Texas, for temporary duty in connection with the transport service. **Kilbourne,** E. D., Captain, Medical Corps. Resignation announced, has been revoked, and will not take place until further leave of absence granted him has expired. **Lloyd,** William H., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and will report by telegraph to the commanding general, Southern Department, for duty in connection with care of Mexican prisoners, Fort Bliss, Texas. **Loewy,** Ignatz D., First Lieutenant, Medical Reserve Corps. Ordered to duty on account of emergency, and will proceed to Fort Bliss and report to the commanding general, Southern Department, for duty pertaining to the care of Mexican prisoners, Fort Bliss, Texas. **Lyster,** Theodore C., Major, Medical Corps. Ordered to Washington, D. C., for consultation with the surgeon general, and then to return to his proper station. **McNeil,** Irving, First Lieutenant, Medical Reserve Corps. Ordered to active duty on account of existing emergency, and will report by letter to the commanding general, Southern Department, for duty pertaining to the care of Mexican prisoners, Fort Bliss, Texas. **Meraux,** Louis A., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and will report in person to the commanding officer, Jackson Barracks, La., for duty. **Miller,** Alvin C., First Lieutenant, Medical Reserve Corps. Relieved from duty at Alcatraz, Cal., and will report to the commanding general, Western Department, for assignment to duty; ordered to El Paso, Texas, for duty with Eighth Brigade. **Mittendorf,** William K., First Lieutenant, Medical Reserve Corps. Tendered his resignation to take effect April 28, 1914. **Morgan,** Norman D., First Lieutenant, Medical Reserve Corps. Assigned to the Presidio of San Francisco, Cal., temporarily, on account of the present emergency. **Patterson,** F. D., First Lieutenant, Medical Reserve Corps. Resignation accepted April 18, 1914. **Putnam,** Victor E., First Lieutenant, Medical Reserve Corps. Assigned to duty at Fort Miley, Cal., temporarily, on account of the present emergency. **Schurmeier,** Harry L., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to report to San Diego, Cal., for duty in connection with the Signal Corps Aviation School at that place. **Van Voast,** Rufus A., First Lieutenant, Medical Reserve Corps. Ordered to active duty on account of an emergency, and ordered to report to commanding officer, Fort Crockett, Texas. **Wilde,** A. G., First Lieutenant, Medical Reserve Corps. Granted two months' leave of absence to take effect when his duties can be spared by his department commander.

Births, Marriages, and Deaths.

Married.

Brockway—Packer.—In Brooklyn, N. Y., on Wednesday, April 29th, Dr. Robert Armiston Brockway and Miss Mary Keves Packer. **Charlton—Cole.**—In New York, on Wednesday, April 29th, Dr. C. Clouter Charlton, of Atlantic City, and Miss Lucie Jane Cole. **Foote—Knous.**—In New Haven, Conn., on Wednesday, April 22d, Doctor Foote and Miss Grace W. Knous. **Galbreath—Dissel.**—In Philadelphia, on Wednesday, April 22d, Dr. John Alexander Galbreath and Miss Elsa T. Dissel. **Gallup—Van Dyke.**—In Stamford, N. Y., on Tuesday, April 21st, Dr. E. W. Gallup and Mrs. Martha Van Dyke. **Gunn—Davis.**—In Minneapolis, Minn., on Saturday, April 18th, Dr. Neil Mackay Gunn, of Chicago, Ill., and Miss Helen Davis. **Low—Matthews.**—In New York, on Tuesday, April 14th, Dr. F. C. Low, of Highbridge, and Miss Alice L. Matthews. **McLaughlin—Wildman.**—In Norristown, Pa., on Thursday, April 23d, Dr. Perry William McLaughlin, of Newville, Pa. and Miss Marian Kirk Wildman. **Murphy—McGregor.**—In Platteville, Wis., on Monday, April 20th, Dr. F. G. Murphy, of Mason City, Ia., and Miss Jessie McGregor. **Wall—Underwood.**—In Scranton, Pa., on Thursday, April 23d, Dr. Russell T. Wall and Miss Grace Underwood.

Died.

Assenheimer.—In New York, on Thursday, April 30th, Dr. Edward Assenheimer, aged thirty-four years. **Brackett.**—In New Britain, Conn., on Tuesday, April 21st, Dr. William W. Brackett, aged forty-one years. **Bremer.**—In Dresden, Germany, on Sunday, April 12th, Dr. Ludwig Bremer, aged seventy years. **Brown.**—In Brooklyn, N. Y., on Thursday, April 30th, Dr. Annie M. Brown, aged seventy-two years. **Chase.**—In Cambridge, Mass., on Friday, April 24th, Dr. Hiram L. Chase, aged eighty-nine years. **Covert.**—In South Zanesville, Ohio, on Sunday, April 19th, Dr. A. M. Covert, aged sixty-two years. **Curtis.**—In Milton, Mass., on Thursday, April 30th, Dr. Newton F. Curtis, aged sixty-four years. **Ehrhart.**—In New York, on Thursday, April 30th, Dr. Paul Ehrhart, aged fifty-nine years. **Ermentrout.**—In Reading, Pa., on Monday, April 20th, Dr. Samuel C. Ermentrout, aged seventy years. **French.**—In Philadelphia, on Saturday, April 25th, Dr. Morris S. French, aged fifty-seven years. **Furney.**—In St. Petersburg, Fla., on Sunday, April 19th, Dr. E. E. Furney. **Haines.**—In Fultonham, N. Y., on Thursday, April 23d, Dr. Abram L. Haines, aged fifty-five years. **Halbert.**—In Waco, Texas, on Wednesday, April 22d, Dr. O. I. Halbert, aged sixty-four years. **Harvey.**—In St. Louis, Mo., on Wednesday, April 22d, Dr. Thomas J. Harvey. **Hodges.**—In Austin Springs, Tenn., on Tuesday, April 21st, Dr. N. L. Hodges, aged sixty-two years. **Holland.**—In Barren Plains, Tenn., on Sunday, April 19th, Dr. Percy Holland. **Howell.**—In Moultrie, Ga., on Thursday, April 16th, Dr. W. S. Howell, aged fifty years. **Lewis.**—In Hartford, Conn., on Sunday, April 26th, Dr. John Benjamin Lewis, aged eighty-two years. **McFatrich.**—In Chicago, Ill., on Sunday, April 26th, Dr. James B. McFatrich, aged fifty-two years. **Nichols.**—In Los Angeles, Cal., on Thursday, April 16th, Dr. Charles Byron Nichols, aged sixty-seven years. **O'Reilly.**—In Roslindale, Mass., on Wednesday, April 22d, Dr. William J. O'Reilly, aged fifty-five years. **Pearce.**—In Brooklyn, N. Y., on Thursday, April 30th, Dr. Eugene F. Pearce, aged fifty-four years. **Reitzel.**—In Greensboro, N. C., on Friday, April 17th, Dr. J. R. Reitzel. **Roberts.**—In Northampton, Mass., on Sunday, April 26th, Dr. O. O. Roberts, aged eighty-five years. **Sanford.**—In Bridgeport, Conn., on Sunday, April 26th, Dr. Charles Edwin Sanford, aged eighty-four years. **Scollard.**—In Milwaukee, Wis., on Sunday, April 19th, Dr. William E. Scollard, aged sixty-three years. **Smith.**—In West Roxbury, Mass., on Monday, April 27th, Dr Harry Atherton Smith, aged forty-seven years. **Stiver.**—In Freeport, Ill., on Saturday, April 18th, Dr. William B. Stiver, aged sixty-four years. **Todd.**—In Ridgeville, Md., on Thursday, April 23d, Dr. B. H. Todd. **Urquhart.**—In Baltimore, Md., on Wednesday, April 22d, Dr. Richard Alexander Urquhart, aged forty-two years. **Wirth.**—In St. Paul, Minn., on Friday, April 17th, Dr. Carl Wirth, aged seventy years.

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Original Communications.

SALVARSAN A VALUABLE TREATMENT OF BRAIN TUMOR SYMPTOMS DEPENDENT UPON SYPHILIS.*

BY JOSEPH COLLINS, M. D.,

New York,

Physician to the Neurological Institute

In the literature there is to be found a record of cases of brain tumor that eventuated in spontaneous recovery, and others in which similar results occurred after the administration of iodide of potassium. It is probable that in both instances the symptoms of brain tumor were caused by syphilitic meningitis or ependymitis, which unquestionably sometimes undergoes spontaneous recovery and likewise terminates favorably under the influence of iodide of potassium. We have not been aware until lately how many cases of brain diseases, symptom complex of tumor, of vascular disorder, of labyrinthine disease, etc., are due to active syphilitic process.

Now that the diagnosis of syphilis—it matters not what organ or system is implicated—can be made positively and unerringly from consideration of the way in which the symptoms of the disease unfold themselves and from examination of the blood and cerebrospinal fluid, there is no reason why every case should not be detected and the majority cured. There is probably nothing more dramatic in the domain of therapeutics than the movements which follow the administration of salvarsan to a patient who has been displaying symptoms that presage serious disease and dissolution. In the days before the diagnosis of syphilitic disease of the nervous sytem could be made with certainty, that is, when we were obliged to base our diagnosis entirely upon the clinical features, patients were always given what is called the therapeutic test, that is, large doses of iodide of potassium and sometimes mercury, in order that the possibility of the pathological process being a syphilitic one could be eliminated. Nowadays the Wassermann reaction is made as a routine measure in practically every case in which organic disease of the nervous system is suspected. A positive reaction in the serum of an individual who has symptoms subjective and objective of organic disease, is presumptive evidence that the disease is founded in syphilis. If in such a case there is a positive reaction of the cerebrospinal fluid and a considerable increase of lymphocytosis, i. e., more than twenty to the c. mm., it is assumed without doubt that the disorder is syphilitic and that antisyphilitic treatment is urgently needed. I am convinced that the reputation of salvarsan as a competent cure for syphilis must rest finally upon the verdict rendered by the neurologist and internist who encounter syphilis in the guise of organic disease of the viscera long after infection, and in many instances long after every indication of the disease has disappeared.

There is no dearth of evidence to show that salvarsan is competent to put the spirochetes out of commission and to keep them out for a protracted time, but whether it is, alone and unaided, competent to destroy them is a question that is still unanswered. That it is not competent to bring about what has been called the great sterilization, i. e., a negative Wassermann reaction of the serum and cerebrospinal fluid, and normal globulin and lymphocyte content of the latter in some cases of organic nervous disease, has been amply proved. In many instances it must be aided by mercury, and in some, even then, sterilization cannot be accomplished.

During the past four years I have encountered at the Neurological Institute several patients who had fairly typical histories and physical signs of brain tumor, which have yielded very promptly to salvarsan medication. None of these cases was suspected to be of syphilitic origin, and it seems to me therefore desirable to call attention to them. The last one is perhaps the most typical.

CASE I. Woman, aged twenty-two years; although she denied having had syphilis, her experience entitled her to have had it; she admitted minor venereal infection. When she entered the hospital her complaint was headache, nausea and vomiting, dizziness, disordered vision—diplopia—insomnia, and physical prostration. These symptoms had been evolving for upward of four months, the initial symptom being headache which was soon followed by diplopia.

Examination on her arrival at the hospital revealed a papilloedema of two diopters in both eyes and a paresis of the left superior oblique, a plus state of all the tendon jerks, a strongly positive Wassermann reaction in the serum and cerebrospinal fluid and seventy-five lymphocytes to the c. mm. in the latter fluid. She was given immediately an intravenous injection of 0.45 neosalvarsan. Having tolerated this trial dose, three days later she was given a full dose 0.9 gram, which amount was repeated every five days for three doses. After the second dose all of her symptoms, save occasional diplopia, disappeared; after the third dose all the symptoms and physical signs disappeared. She was then put upon weekly injections of salicylate of mercury, two grains to a dose, suspended in benzoinol, and injected deep into the muscles of the hip.

Nothing could be more striking than the way in which the symptoms disappeared in this case. It is almost an exact parallel of a patient who was at

*Read at the Weekly Clinical Conference of the Neurological Institute, December 3, 1913.

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the institute in 1911, and in whom the results of treatment were equally brilliant.

Case II. Man, aged twenty-five years, who denied syphilis, was sent from one of the ophthalmic hospitals as having brain tumor, with the statement that decompression was urgently needed. The patient's complaint was of supraorbital headache, diplopia, increasing bodily weakness, and a tendency to sleep all the time. These symptoms had been in existence for about six months. Physical examination revealed a plus state of all the tendon jerks, a paresis of the external rectus muscles of each eye, absence of senses of taste and smell, a positive Wassermann reaction in the blood, and cerebrospinal fluid; the latter showed 134 cells to the c. mm. After the first dose of salvarsan he experienced signal relief. After the second dose he was free from all symptoms and returned to work; after the third dose every indication of disease disappeared.

Case III. Man, aged twenty-seven years, whose syphilitic infection dated back less than a year, began to complain of headache, dizziness, sensation of stiffness in the neck, insomnia, and dysarthria. After these symptoms had been in existence for about a fortnight, he was seized with an epileptic attack, Jacksonian in character. After this attack subsided, the right upper extremity in which had been displayed the convulsion, was monoplegic and he could not talk intelligibly. Physical examination revealed, in addition to the flaccid paresis of the left upper extremity, a positive Wassermann reaction in the serum and cerebrospinal fluid and 533 cells to the c. mm. in the latter.

The rapid and complete disappearance of symptoms in this case was most extraordinary. After four full doses of neosalvarsan and twenty-five days after he came into the hospital, he returned to his work, that of a lather, and has done it satisfactorily since then. Examination of the blood and cerebrospinal fluid made a few days ago showed indication of the activity of the syphilitic poison, and he is now having a course of salvarsan.

The pathological process in cases such as those I have described, is predominantly meningeal. In the first case, there must have been, in addition to meningeal involvement, an increase of intracranial pressure, probably due to increase of the intraventricular fluid, constituting in reality a hydrocephalus. In no other way can the papilloedema be satisfactorily explained. In the second case the somnolency was due to a similar increase of intraventricular pressure.

Brain syphilis displays itself in one of three forms; of the bloodvessels, of the meninges, and in new formation sufficiently circumscribed to be considered a tumor. The meningeal variety is by far the most common. It affects predominantly the base of the brain and the convexities. The first two cases here related are striking examples of the former; the third case of the latter. When the meningitis is of the gummatous variety, which it is usually, the symptoms accompanying it are most complex and desperate, and we have to depend upon the serological examination for the diagnosis. On the other hand, when the meningitis is of the simpler exudative variety, the diagnosis is more readily made clinically. Headache is the chief and most constant symptom. It is alleged to be worse at night, but this is by no means always so. Scarcely any two patients describe this pain in the same way or localize it to the same place.

The next most common symptom is paralysis of one or more of the eye muscles, and the motor oculi is oftenest affected. It may be totally involved, but in the majority of instances only one of the branches is implicated and of one eye. It is most unusual to encounter bilateral eye muscle paralysis. The fourth and sixth nerves are not involved nearly so frequently with syphilitic basilar lesions as the third nerve, but I am of the opinion that they are affected oftener than the statistics of the literature seem to indicate. In the past, transitory palsy of the trochlear and of the abducens has been often attributed to causes other than syphilis, but now with the very general application of the Wassermann test, we find that many of these cases are syphilitic which were formerly called rheumatic or not designated at all.

The optic nerve may be implicated in the syphilitic process in any part of its course, but naturally the roots of the nerve, the chiasm, or its peripheral prolongations are more likely to be involved in a gummatous basilar process. Choked disc, which occurs quite frequently, probably is dependent in every instance upon accompanying increased intracranial pressure incident to the meningitis.

In the third case which I relate, the pathological process was a convex meningitis. This is indicated, not by the headache, dizziness, and insomnia which are cardinal symptoms of syphilitic basilar meningitis, but by the epileptic attack, Jacksonian in character, and the subsequent anarthria and dysarthria. The patient displayed a phenomenon which is often seen in syphilitic brain disease, viz., the disappearance of the minor irritation symptoms on the appearance of the major or destructive symptoms. After the convulsion and the appearance of monoplegia and anarthria, the headache and vertigo disappeared and he became stuporous, inert, and silent. The enormous number of cells found in the cerebrospinal fluid may be assumed to indicate pronounced activity of the inflammatory process.

These three cases are thus briefly recorded to call attention to the importance of making a Wassermann examination in all cases in which there is suspicion of brain tumor. The prompt way they yielded to treatment is emphasized to testify to the value of salvarsan in the treatment of syphilitic nervous disease.

37 West Fifty-fourth Street.

CONSTITUTIONAL DYSMENORRHEA.

By Samuel W. Bandler, A. B., M. D.,
New York.

The idea that the ovaries, by reflex nerve stimulus, are responsible for menstruation is old and no longer held. Menstruation results because no fecundated ovum takes its place within the uterus after the ovarian secretion has caused a thickening of the mucosa in preparation for the nidation of the ovum. As a result of menstruation the mucous membrane goes back to its former size and state, and a few days before the next awaited period undergoes, as a result of ovarian secretion, the same changes in preparation for nidation.

These local phenomena, resulting through the selective action of the ovarian secretion, are associated with phenomena in other parts of the body, resulting from, or roused by the same or other hormones secreted by the ovaries. These phenomena produced by the ovarian secretion partake of the nature of congestion and hyperemia, with increase

of vascular tension, affecting particularly mucous and serous membranes and the glands and glandular structures of the body.

There is an increase in the blood pressure seven to ten days before menstruation. Patients often complain of headache, colicky pains in the abdomen, drawing pains in the back and pelvis down into the thighs. In a nervous patient uterine contractions may increase up to the degree of spasticity, resulting in dysmenorrhea, perhaps associated with an existing hypersensibility (vagotonia). Menstruation may affect the eyes and lids in many ways; may affect the ear, the digestive tract, larynx. There may be periodical toothache, labial herpes, stomach pain, loss of appetite. The premenstrual period has a bad effect on ulcer of the stomach. Skin changes are frequent, such as chloasma, erythema, eczema, urticaria, nervous skin swellings, etc.

Involved in this constitutional reaction, often visibly involved, is the thyroid gland. It is a matter of common observation that the neck enlarges and the thyroid swells during menstruation and during the early months of pregnancy. In pregnancy we have, as causative factors, the corpus luteum and the trophoblast: in the premenstrual period we have only the ovarian secretion, that produced by the follicles and the interstitial gland. This idea of interrelation and antagonism between ovary and thyroid appears to be generally accepted; those organs stimulate each other, and, at the same time, are probably antagonistic.

The reaction of the individual to the premenstrual cumulative influence of the ovarian secretion follows different types—some patients do not know from any symptom at all that menstruation is approaching: others show the local pelvic phenomena of congestion, discomfort, or pain; others have a constitutional alteration, characterized by a dull, heavy, tired feeling: a goodly proportion show symptoms of irritation and constitute the excitable type. The reasons for these different types are to be found, naturally, in the character of the ovarian secretion, in its relation to other secretions, and in the sensitiveness of the nervous organism that is being played upon, so to speak. In some patients there is very little constitutional congestion produced by ovarian secretion, and very little alteration in any of the mucous or serous membranes; other individuals are possessed of a placid, nervous system in many ways almost insensitive to such changes. In certain women the thyroid is scarcely stimulated by the ovarian secretion, or reacts too slightly, if at all, to its cumulative influence; in others, the faintest beginning of ovarian premenstrual activity is immediately followed by a response of the thyroid, in the form of actual or relative overactivity.

The reaction of an individual to the premenstrual phase is a fairly good indication of the sensitiveness of that patient's nervous organization at that particular age, or of the stability of that patient's nervous system. Some severe cases of premenstrual constitutional annoyances are found in what may be called "nervous," "neurotic," or "neurasthenic" individuals, and this "nervousness" is in many cases nothing but hyperthyroidism, evident, too, in the intermenstrual periods. We are concerned also with that type which is relatively free, in the intermenstrual periods, from "nervous" symptoms.

Preceding the menopause age and stage, instances of constitutional dysmenorrhea become frequent. We have the type of case in which the annoyances were present to a greater or lesser extent of years from puberty on, or else developed at a later period, or came on after marriage, or were aggravated by various circumstances. Then comes another and important type, the cases into whose histories these annoyances come as a new process. These patients in their earlier years had slight, if any, premenstrual annoyances. As they approach the period of life when they look forward to the menopause, their menstruation continues, even grows stronger, with or without intervals of amenorrhea, and marked cyclic states of irritability appear. These cases are, in a large number of instances, hyperthyroidism; some of them are cases of actual or relative hyperthyroidism, for we find instances of the very opposite type, also, where a phlegmatic and depressed state results, a condition often due to hypothyroidism. The cause of this dysthyroidism lies in the thyroid and ovaries. Either the latter function with marked energy, or overshadow the thyroid activity, or they actually overstimulate and rouse the thyroid gland, or else they work with less than their former power, but the thyroid fails to regress with equal degree, and a state of cyclic hyperthyroidism results.

The administration of thyroid gland extract between menstrual periods and before menstrual periods, serves to aid in making the diagnosis. In the hyperthyroid cases the premenstrual annoyances are brought out in the intervals, or are brought on earlier, or are accentuated by the administration of thyroid extract. Among the medicinal methods, preparations of bromides and of valerian, and not infrequently, ovarin, help to diminish the annoyance. In the hypothyroid or hyperovarian type small doses of thyroid are of specific value. In some of the hyperthyroid cases small doses of opium and belladonna are absolutely necessary to give the patient relief, not so much from pain and discomfort as from the irritability and often almost maniacal restlessness which typifies these hyperthyroid cases. In the hypothyroid form, or hyperovarian type, thyroid should be given.

The fact that patients who have never had these annoyances in their earlier years, and the fact that patients who evidence at times the symptoms of myxedema, acquire at later periods, and most particularly in the preclimacteric stage, these constitutional nervous phenomena, show that at that period there is decided susceptibility to alterations in the balance between thyroid and ovaries particularly. This lack of balance between thyroid and ovarian secretion, and probably in very many instances a disturbed relation between other glands, especially the hypophysis, is of great importance. Too much ovarian secretion may cause congestive symptoms associated with irritability. It is common knowledge that the change of life, as the laity call it, is a critical period. It is not sufficiently recognized that the premenstrual period is often quite as critical. Are these cyclic annoyances to be explained simply

on the theory of congestion and increased tension produced by the ovarian secretion, or do other elements, influenced by the ovarian hormones, play an important part?

The change in gland relations which occurs at puberty, at which time minor thyroid annoyances are frequent, the thyroid phenomena at menstruation, during pregnancy, in association with ovarian affections, and during the climacteric, find a parallel in the fact that the more typical diseases of the thyroid, myxedema and Basedow's disease, are eight to ten times as frequent in women as in men. No satisfactory explanation for this has yet been given. It always seemed plausible to me that the instability of the relation which the thyroid bears to the ovaries and uterus, makes the thyroid surely more susceptible to the causes, whatever these may be, which produce these same diseases in a far smaller proportion in men.

The monthly play produced on a woman's nervous system by the premenstrual ovarian stimulation causes, either of itself or, in many cases, through an exaggerated response on the part of the thyroid at these times, a group of nerve phenomena like those in hyperthyroidism, to which may be given the term constitutional dysmenorrhea. Some patients are depressed almost to the verge of melancholy before each menstruation. They are sluggish in thought, indifferent to their surroundings. There is a mental inertia, they are inclined to be sleepy and drowsy, and awake without a sense of well being. The pulse is slow, there is a sensation of cold. They constitute the phlegmatic type, and are the opposite of the type to which I desire particularly to draw attention as the more frequent.

There is in this other and important class of patients a nervous excitability in the premenstrual phase, an irritability, and a restlessness that is almost maniacal. The patients cannot keep quiet, find it impossible to lie down or rest, are unable to keep their minds on any one subject. They have not the patience to take part in conversation, or to listen to any talk or information. They realize that their train of thought is unusual. They have a sense of heat, and complain of burning sensations. There is a tremor about the hands, and the knee jerks are exaggerated. They sleep badly, and have a pulse of 90 or more.

There is another class of patients, in whom there is a play between hypothyroidism and hyperthyroidism. The symptoms of hypothyroidism may seem to be manifest between menstruation, only to be changed to the type of hyperthyroidism before and during menstruation. We must dissociate that type suffering from well marked annoyances of probable hyperthyroidism at all times from the type where the hyperthyroidism is characterized by its premenstrual periodicity.

Mild forms of hyperthyroidism, which resemble neurasthenia, are very frequent. On the other hand, in many neurasthenics there is overactivity of the thyroid. Just as the larger number of cases of hyperthyroidism are transient, and end in rapid recovery with appropriate medication, so some of these cases of so called constitutional dysmenorrhea are cyclic hyperthyroidism and may be benefited or cured.

It must be remembered that various emotions and mental stimulation rouse the thyroid to activity. The same is true in the sexual sphere, and holds good for some of the diseases of the genitalia. Alcohol, coffee, tea, iodides, and arsenic stimulate the thyroid. The thyroid is quieted by rest, freedom from sexual stimulation, and by the correction of pelvic congestion and pelvic pains. A milk diet, the glycerophosphates, ergot, and especially the bromides, opium, and belladonna, are of great service. In certain cases ovarin works very well.

The uterine lining is acted on by the ovaries, probably by the follicle secretion. Some of the cyclic phenomena, occurring in the uterus as part of the normal process called menstruation, are due to the interstitial gland. The uterine lining reacts on the ovaries, too, for, if the uterus is removed, ovarian secretion gradually diminishes and often ceases long before the end of two years. The lining of the cervix and uterus and their hormones react on the ovaries. When a fecundated ovum is present, it stimulates the ovary to the production of a corpus luteum, and the corpus luteum still further stimulates the decidua and uterine growth. We are certain that the relation of the thyroid to the ovary sensitizes the thyroid gland, and that the relation between the uterine lining and the ovary sensitizes the ovary.

If we remove the endometrium, we take away one of the elements which react on the ovary. If we can make these patients cease menstruating and leave the ovaries behind, the oversecretion of the ovaries and the cyclic response of the thyroid seem to be markedly weakened and usually removed, and the reaction of the ovaries to the endometric hormones is done away with. I know only one way of preserving the ovaries, for a time at least, and putting a stop to menstruation, and that is to remove the uterus. My list of operative cases of this type at present is not large enough to authorize an extensive discussion of the subject. I am, with each year, more and more convinced that hysterectomy, especially vaginal hysterectomy, whenever possible, offers, in a large number of such cases, relief from the annoyances which not infrequently persist for years, and which may bring patients, to say the least, to the verge of invalidism. I can see no theoretic objection to the procedure. It spares the patient the often associated loss of large amounts of blood, which, in itself, is a factor worthy of consideration.

In hundreds of cases of real hyperthyroidism, the thyroid is removed in part, or its blood supply diminished by operative procedure, when the indication is by no means one of life and death, but only one of comfort. Why should not the same view of eventual surgical relief hold good in the type of constitutional dysmenorrhea which I have mentioned? This type of cases referred to here cannot be properly studied or appreciated in dispensary practice. They seem to affect patients in the higher spheres of life, and require long continued observation thoroughly to understand the type of annoyances, to make the diagnosis by observation and by the use of thyroid or ovarin, to see the effects and improvements obtained by local treatment and the elimination of irritations.

It has been said that no uterine hormon has ever been demonstrated. It is impossible to confine ourselves, in a theoretical argument, or in an attempt to come to a logical conclusion, to facts absolutely demonstrated in the laboratory or by animal experimentation. Beside, there are hormones which produce an immediate result, such as adrenaline, or which give quick response within a few days, such as thyroid. The ovarian hormones and the uterine hormones do not act so promptly, even when both ovaries are working in the human economy; it takes them twenty-eight days to produce their cyclic uterine alterations, and if the hormones of the uterus do respond and react on the ovary, it is probably only an activation of the ovarian secretory function, all of which are points which animal experimentation or human observation can clear up with difficulty in such a direct and rapid manner as to prove that these hormones do exist. Besides, the ovary possibly possesses hormones other than the products of the follicles or luteum secretion (interstitial gland).

A point of great importance is the answer to the question, Why does ovarian secretory activity diminish after removal of the uterus? Now it is a fact that scarcely a single secretory gland can be removed experimentally, in whole or in part, without involving the other glands of the body in the way of hypertrophy or atrophy. This interrelation between the glands is very complicated. If removal of the uterus, and with it its lining, does produce such a result in the ovaries, then, whether uterine hormones have been demonstrated or not, it must be apparent that a failure of the uterine elements to react on the ovaries deprives the ovaries of a certain stimulus which keeps up or activates their function.

If a too thorough curettement is done, or if any intrauterine manipulation is carried out which ends in a cessation of menstruation, and in gradual, temporary, or permanent amenorrhea, why have we not the right to say that something has been removed from the uterus which has a stimulating action on the ovary, for the ovary underfunctions, fails to restimulate the uterus sufficiently, and by this diminution of interaction, ovarian and uterine atrophy results? The same idea holds good, in all probability, in mammary atrophy.

It has been said that the thyroid is arbitrarily selected as the cause of these constitutional annoyances, and that the hypophysis plays a more important part. No one can deny the importance of the hypophysis. In childhood it is an important factor in promoting growth, and lack of it inhibits development, both of the body and the genitalia. In adult life too much hypophyis causes acromegaly; too little hypophysis causes dystrophy. The hypophysis is intimately connected with the development of the sexual apparatus. Its influence is altered during pregnancy, but all these changes are of a slower type: they probably take weeks or months to produce their annoyances, and they are not at all cyclic, so far as we know at the present time. But the ovary and its relation to the thyroid represent an apparatus in a continual state of changeable relation, and that changeable relation is cyclic, and is one of the responsible factors in making women the weaker sex. Why is it universally recognized that the thyroid has a most intimate relation to the genitalia: it is practically a sexual gland. There are well defined symptoms which characterize hyperthyroidism and hypothyroidism. In oversecretion of the thyroid we have the greatest variations from typical cases of exophthalmic goitre to cases without the exophthalmos, without the marked goitre, without the tremendous tachycardia, down to the forms characterized by nervous irritability, by digestive annoyances and only moderate amounts of tachycardia. Some of these eventually present symptoms which make the diagnosis absolutely certain, others improve so rapidly that our first diagnosis seems afterward to have been based only on suspicion. Many of the cases are masked, and may be developed by irritation or the administration of drugs given for therapeutic or diagnostic purposes. One must not be influenced by just a few symptoms which are present, nor should the diagnosis be excluded because a certain number of symptoms are absent. When viewed from the psychic sphere alone, the mental phenomena of undersecretion of the thyroid and oversecretion of the thyroid resemble each other, yet attention to other points of diagnosis usually aids in making the differential distinction, and then, after all, the administration of thyroid eventually gives us the clue we want. In the same way we must depend upon long observation, upon the study of minute points, on an observation of the individual in the interval between menstruation, on the effect of drugs and local therapeutic measures in making a diagnosis of these premenstrual cases. Many of them are simply due to overstimulation by the ovarian secretion itself, and it has been my desire to attract attention to the necessity of distinguishing between such cases and cases where annoyances are due to the thyroid gland which, hypersecreting or not at other times, is aroused to overactivity by ovarian stimulation. And here, too, we must not overlook the type where an actual or relative hypothyroidism is concerned in the premenstrual and menstrual phase. Then, again, comes the class of cases where the relation between ovary and thyroid is so unstable that at times we have too much thyroid and other times too little; then, finally comes the class where we may be dealing with an altered character of the secretion. In gynecology we have been suffering for years with the idea that the sexual organs, through reflex channels, have dominated a woman's physical and nervous make up. Lacerations of the cervix have been operated on, retroflexions of the uterus have been corrected, prolapse of the ovary has attracted great attention, and various anomalies of the uterine lining have been considered, all of them, by reflex channels, to produce headache, palpitation of the heart, nervousness, irritability, indigestion, and mental diseases. There is no objection to surgeons doing all the work they wish on the internal and external genitalia for mechanical and other reasons, but, as common sense physicians, we must get out of the idea that by reflexes these lesions play their role. It is only when we understand the make up of woman, the relation between ovary and thyroid, the effect of rest, the valuable influence of the correction of congestion: it is only when the mental

and psychical stimuli and irritations and the effect of sexual stimulation and deprivation are considered, that we can intelligently understand the nervous affections of womankind and treat them intelligently.

During all the years that the uterus is present, acted on by the ovaries, reacting on the ovaries, related directly or indirectly to the thyroid, it is an organ of importance only from the standpoint of propagation, and all the nervous annoyances from which women suffer because of the fact that they have ovaries and a uterus, are the price which they pay for possessing an organ necessary to motherhood. After motherhood is no longer to be considered, or after a stage when motherhood should no longer be considered, the uterus is absolutely of no value. So long as it is productive of no annoyances, all is well. When that uterus is the seat of benign or malignant growths, operation is generally recognized as the only treatment in the malignant cases, and as the advisable one in a large number of the benign type. Then come the cases where the uterus, because of excessive bleedings, or because it is totally prolapsed, produces annoyances which interfere with the patient's comfort and health, and in innumerable cases the uterus is removed. Now, if the uterus, because it is present, makes menstruation possible, whether it simply takes part in this process, or, by some relation to the ovary and thyroid, stimulates this process, it is nevertheless certain that premenstrual and menstrual annoyances of the type which I have described, are markedly diminished, if not entirely removed, when menstruation no longer recurs. Any procedure, whether it is through curettement or atmocausis, or the use of drugs or x ray, which will stop menstruation, without a too sudden cessation of ovarian function, benefits these patients. If none of these methods are of avail, and the patient's steady or recurrent annoyances are sufficient to make her life miserable, and if we feel, as I do, that removing the uterus and preserving the ovaries will improve and cure this patient, then removal of the uterus, especially through the vagina, is a most legitimate operation.

Thyroid affections, occurring so much more frequently in women than in men, whether of the type of Basedow's disease or of myxedema of typical character, teach us that the minor gradations of these diseases are also much more frequent in women than in men. Hence, nervousness of a type in which the thyroid is the important factor or only a contributing factor, is responsible for the fact that nervous conditions are so much more frequent in women than in men. Small wonder, then, that a goodly portion of women suffer from annoyances in which the thyroid plays a part, preceding or during menstruation, a time at which the vast majority of women realize that they are put to a severe mental and nervous strain. I have attempted an explanation, theoretical to be sure, of the frequency of thyroid affections in women. I fail to see how logic can lead us to any other conclusion than that the susceptibility of the thyroid to disease is in a great measure due to the fact that its relation to other glands is an unstable one, and that it is hypersensitive to annoyances and irritations of whatever nature. Now, just as eclampsia, even if we have not found the actual chemical element or elements which produce the disease, is certainly due to the action of cells of the ovum, direct or through the medium of other glands, upon the blood and tissues of the body, so the ovary in some way, directly or through other glands, acts on the thyroid, and renders it liable to overactivity, underactivity, or malsecretion. When one considers the phenomena which lead to menstruation, it is impossible to avoid the conclusion that the uterus, by its very presence, and in all probability by elements secreted by its glandular structures, bears an important relation to the ovary, so that, in the last analysis, the thyroid acts on the uterus, directly or through the medium of the ovaries, and the uterus on the thyroid, directly or through the medium of the ovaries or other glands.

Conditions due to hypothyroidism are not so difficult to combat. It is the hyperthyroid cases which cause the trouble. Any treatment which relieves the patient of pelvic pain between menstrual periods, or relieves dysmenorrhea of uterine origin, corrects congestion and irritative anomalies of which the patient is conscious, or which interfere with ovarian function, is of the greatest value. Local treatment and general medication will help many of these patients, even though the annoyances may recur at subsequent periods. I have watched some of these patients for nearly ten years, and many of them have responded repeatedly to periods of treatment.

Viewed from the standpoint of medical men, it might be said that these are nervous patients made worse at the menstrual periods. The neurologist might think of them as neurasthenics, irritated by the premenstrual phase. Others might consider them as masked Basedow cases, subject to various degrees of exacerbation at regular intervals. The gynecologists were formerly inclined to attribute the annoyances to reflexes sent out from displaced pelvic organs or from altered structural conditions.

As a matter of fact, it really means that the premenstrual phase furnishes us with an index of the patient's nervous sensitiveness, or shows us how stable is the function of the thyroid, or how sensitive it is to variation in the functions of the ovaries and the uterus. That the ovarian secretion by itself, by its overactivity or underactivity or absence, may cause changes without placing the burden on overactivity or underactivity of the thyroid goes without saying. It is the cases suffering from menorrhagia, plus these cyclic nerve upsets, that furnish the most marked indication for operative interference.

The annoyances which occur in the climacteric are of various forms. The nerve phenomena show variations from the phlegmatic type to the excitable type. The psychic variations run from melancholic and psychasthenic to manic forms. In many cases the annoyances are clearly the result of changes incident to the climacteric. In others they resemble various forms of mental diseases, and seem often to have nothing to do with the interglandular upset. Care is often necessary to separate the forms which are coincident with the preclimacteric or climacteric phase from the forms which are due to the alterations of that period. Some women go through this time of life with scarcely a ripple to mar their good health, while others are miserable and unhappy for months or years.

There are women in this state, the so called change of life (if that may be used to signify the abnormal relation between the secretions) who during the greater part of their life or for certain months of their existence, or preceding a few or many or all of their menstrual periods, suffer from the same variations, in the way of annoyances, as the class just mentioned, who are about to go or are going into the climacteric. There may be too much or too little ovarian secretion; there may be too much thyroid, actually or relatively, or there is too little, or there is a play between these various alterations.

134 West Eighty-seventh Street.

APRAXIA IN RELATION TO APHASIA.*

By John H. W. Rhein, M. D.,
Philadelphia,

Professor of Diseases of the Mind and Nervous System, Philadelphia Polyclinic and College for Graduates in Medicine; Neurologist, Howard Hospital; Physician, Home for Incurables.

The relation that apraxia holds to the subject of aphasia has been hitherto exemplified in connection with certain forms of aphasia only, namely, motor aphasia, agraphia, amimia, and amusia, but the recent work of Liepmann shows that not only motor aphasia but every form of expressive aphasia and apraxia are similar. Before reviewing Liepmann's (1) ideas without which no discussion of the relation of apraxia to aphasia could be complete, it will be necessary to refer to some of the features of apraxia in order to show clearly the bearing one has on the other.

Apraxia is an inability to perform purposeful movements, while at the same time the object and its use are recognized and the limbs can be readily moved, in other words, are not paralyzed. It is usually unilateral, affects simple movements, interferes with imitation of movements, and gives rise to amorphous instead of purposeful movements. There is recognized also an ideatory apraxia which affects mainly the manipulation of objects, for example, a cigar is rubbed against the match box instead of the match, in an effort to light the cigar. This is called association apraxia by Bonhoffer. There is then the *Glied-kinetic* apraxia of Kleist in which movements which arise from practice, such as writing, drawing, and knitting, are implicated. This is the cortical apraxia of Heilbronner. Finally, there is amnesic apraxia in which the subject forgets, on command or invitation, how to perform certain purposeful movements.

While aphasia may or may not accompany apraxia they are often associated in the same case (Liepmann (2), von Stauffenburg (3), Pfeifer (4), d'Hollander (5), Kroll (6), and others). This association is not difficult to understand when we reflect that the lesions causing aphasia are to be found in regions closely related to those causing apraxia. The lesion in apraxia is found most commonly either in the gyrus supramarginalis, in the frontal lobe, in the corpus callosum and supracapsular areas, or, finally, in various locations.

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The association of apraxia with aphasia at first sight is more apparent in relation to motor aphasia. Motor aphasia has been called apraxia of the speech muscles by Nikitin (7). Liepmann (8) said in an earlier communication that in a broad sense, expressive aphasia is apraxia, consisting of an inability to utter words, while the tongue, palate, mouth, and vocal cord musculature is intact. In motor aphasia there is an inability to use the tongue, lips, soft palate, and vocal cords, while at the same time these muscles are not paralyzed. The muscles can be moved, but the subject cannot awaken the proper movement memories to produce speech. In apraxia there is an inability to use the arm for purposeful movements, yet there is complete power to move the arm muscles. Aphasia is to the speech musculature what apraxia is to the limb musculature.

The idea of a word is made up of auditory images of the sound of words, visual images of writing and printed words, speech kinesthetic images, and, finally, graphic kinesthetic images (Wilson). Speech itself is acquired by a storing up of auditory images. On the other hand, purposeful movements depend largely upon the storing up of visual and kinesthetic memories. If the auditory memories or images cannot be recalled we have aphasia; if the visual and kinesthetic memories cannot be recalled we have apraxia. Liepmann has gone further and considers, not only motor aphasia, but every expressive aphasic disturbance of speech and writing essentially similar to apraxia. His views must be given in considerable detail in order to present the subject in a clear manner.

He differentiates three principal forms of apraxia, namely, 1, ideational apraxia after Pick; 2, limb kinetic apraxia, in which limb kinetic engramms are lost; 3, ideokinetic apraxia, in which the association between the ideation and the limb kinetic is disturbed. There is, he considers, no reason to limit the conception of apraxia to visible effects of movements.

The executive apparatus (sensomotorium) is not sufficient for the function of life, and has superimposed kinesthetic memory ("the memory for the complex of sensations which movement itself leaves behind") and the innervation complexes existing as engramms of the nerve substance, which together he calls a kinetic memory or a memory one acquires by practice for certain forms of movements. But this is not sufficient, as it is only for simple and much practised movements and is not adequate for the daily requirements. These (memory and innervation or limb kinematic) then must be brought into extensive cooperation with the whole brain. Hence we then have limb kinetic memory and the connection of this with the remaining possession of memory by which unaccustomed series of movements are possible and there is a capacity to use "the limbs according to purposive ideas."

Movements of the extremities is a matter of a "sketch of movement whose base is a space time series (*Bewegungsformel*) in a covering of a sensory quality, generally a visual covering. This he calls the ideational sketch which tells one which limbs and parts of limbs are to be moved and their

order and "what ways they have to take." The availability of the limbs for purposes, therefore, are dependent on "1, the ideational sketch; 2, limb kinetic memory; and, 3, regular correlation between the two." This also holds good for the laryngopharyngoglossolabial muscles, whose visible effect is mimic movements, and audible effect speech.

Speech has its executive apparatus, a limb kinetic faculty and a kinesthetic engramm (the formerly overrated so called "representation of the movements of speech"). The kinetic possession of words is insufficient to maintain talking, and ideation for the word and sentence requires instead of time-space-visual directives as in movements, time-auditory directives.

With most people the motor word is revised by the auditory component of the word, not directly by the idea, and when these are impaired (sensoric aphasia), "the limb kinetic possession of letters and syllables is retained, but the succession, the choice of the suitable letters and syllables is defective" (paraphasia).

To produce speech properly the acoustic sketch must influence the kinematic of the speech muscles, as, in apraxia of the limbs, the visual sketch influences the kinematic of the extremities. This paraphasia occurs if the acoustic sketch or its connections with the kinetic sphere is defective and has a "similar habitus sometimes like the ideational and sometimes like the ideokinetic defective reactions of the apractic patient."

In apractic patients, the ideational defective reactions are seen in "perseveration, omission, duplication, anticipation of something later, glancing off to something related, becoming directed away to accidental, sensory impression, a mixture of perseveration with something newly intended, etc., briefly a confusion of motor intact partial actions."

In paraphasia (sensory aphasia) there is "perseveration to earlier syllables, anticipation of later syllables, sliding off into words related in sound and sense, fusion of parts of suitable words with those of similar sounds and similar sense and those of persevering words, connections with parts of words which are accidentally awakened by sensory impression or associations." Here there is "an analogy of exchange of movements (*Bewegungsverwechslung*) of the ideokinetic patient in *verbal* paraphasia."

Amnesic aphasia (difficulty in finding words) generally due to a difficulty in reviving acoustic engramms (slight injury to Wernicke's zone) corresponds to amnesic apraxia (nonoccurrence of movement). There is an ideokinetic paraphasia also, as when spontaneous speech is difficult (difficult awakening of the kinetic words). The kinetic engramms are retained, as is seen in preservation of repetition, but strong acoustic stimuli are required to render them active. But as acoustic memory possession for words differs from visual memory possession for movements, and as there are "many other differences in the mechanism of speech and other movements, one is forbidden from carrying the analogy of the two to an extreme, i. e., distributing all aphasic disturbances among forms of apraxia."

Liepmann wished principally to show that, physiologically and pathologically, the expressive aphasias belong to the sphere of apraxia. In considering the question of localization he stated that the limb kinetic engramms of the hand are located in front of, behind, and in the central convolutions, and that the engramms of the speech movements stretch over from Broca's region to the opercular part of the anterior central convolutions, so that the mnesic and executive apparatus partially cover one another.

Liepmann has shown that the left side of the brain preponderates for praxia as for functions of speech. The lack of independence in the right brain is shown particularly in the inability to perform movements *without* an object. Feeling and seeing the object admit of the movement. He calls these objectless movements free movements, and he considers then that the right hemisphere is dependent for these on the left. Speech is a free objectless movement, and the mouth and tongue produce words only by the help of the acoustic kinetic image, while the hand movements of beckoning or threatening (objectless movements) require the optic kinetic image. "The inferiority of the right hemisphere for phasia and praxia can be referred to one and the same deficiency, i. e., that of not directing movement without object." The result, he considers, supports biologically the essential similarity of phasia and praxia which he outlined.

The similarity of apraxia and agraphia, the latter being a form of aphasia, is thus also explained. To us the relation seems particularly apparent with that form of agraphia which is called isolated agraphia (Wernicke) or pure motor agraphia (Pitres and Déjerine).

The existence of isolated agraphia has been known for a long time, but in view of the recent studies of apraxia it takes on a different significance. Writing results from the awakening of graphic kinesthetic memories lodged in the auditory image centre, the visual image centre, the speech kinesthetic centre, and the centre for ideas of objects. As Wilson (9) has put it, if the afferent apparatus is perfect and the patient is, notwithstanding this, unable to revive graphic kinesthetic images, he is agraphic without paralysis. He has apraxia of the movements of writing. It was Mass (10) in 1898, who was the first to describe the relation existing between agraphia and apraxia. Later Liepmann and Mass (11) described a second case of left sided agraphia and apraxia with right sided palsy. The difficulty in writing in this case they looked upon as motor apraxia and as not being related to the disturbance of the act of writing dependent upon internal speech. The lesion was in the corpus callosum, leaving the cortex intact in the frontal, parietal, and occipital regions. The dyspraxia was due to the robbing of the right arm centre of the control of the left arm centre, by the foci which implicated the corpus callosum. Kroll's (6) view was that the right supramarginal gyrus, where are stored the kinesthetic memories for the left arm, was separated from the left sensomotorium by the lesion. Hartmann (12) and Lorenz's (13) cases are also examples of dyspraxia due to destruction of the corpus callosum. In Heil-

bronner's (14) case, "hacks" were made with a pen instead of letters. Bonhoffer (15) reported a case in which the patient was unable to write certain letters, though he knew them, but instead produced characterless figures. He believed this was apractic agraphia.

Liepmann, in his earlier paper, looked upon the right sided agraphia in his case as an expression of apraxia. He could write with the left hand, showing that internal speech was preserved, but he was unable to send impulses to the hand centre in the left cerebrum. In connection with this subject, the case of Meyer's is interesting, being one of apractic agraphia in a right handed person, with paralysis of the left arm and leg and preservation of speech and the ability to write. Bychowski (16) believed that the difficulty in writing in his case was the result of a disturbance of manipulation, that his patient suffered from apraxia of the faculty of writing words.

The relation of apraxia to instrumental amusia is apparent, indeed instrumental amusia is apraxia. Pick (17), in discussing the relation of ideatory apraxia and instrumental amusia, cited some interesting cases from the literature. In Charcot's patient, a trombone player, all the motor memories were intact, the memories for associated movements of the hand and mouth necessary to play his instrument having been lost.

In Starr's case of pure motor aphasia and agraphia without paralysis, the patient could read and enjoy music, but was not able to play the piano. Kast's patient held his violin like a piece of wood. There have been analogous cases in violin players (Oppenheim). Instrumental amusia in Pick's case, he believed, was an apractic symptom due to a functional disturbance, the amusia resulting from the lapse of the implicated kinesthetic memories. Pick further cites the cases of Donath, who could only play one piece, each effort to play other pieces resulting in the performance of the same piece. In Würtzen's case there was complete instrumental amusia of the right hand which was not palsied nor agraphic, while the left hand was intact.

According to the studies of Edren, the centre which, when injured, causes amusia, is situated in the first and second temporal convolutions, and if this is true the relation anatomically to apraxia is evident. Pick looked upon apraxia in certain cases as independent of sensory or motor disturbances, and as representing an ideomotor trouble, and it is, in his opinion, a functional disturbance in which there is a weakness of the memories for purposeful movements. Finally amimia, the loss of expression in gesture or mimicry may be looked upon as apraxia.

Apraxia may occur also in cases of mental disease just as aphasia occurs in mental disease. It has been described in senile dementia by Marcuse (18), Drommard and Pascal (19); in general paralysis by Abraham (20), and Lewandowski (21); in senile cerebral atrophy by Stransky (22); in dementia præcox by Drommard; in mental confusion, the amentia of Meynert; and in confusional states in general, such as posthysterical and postepileptic conditions, by Pick, and in the delirium of alcoholism by Bonhoffer. Van der Vloet (23), as a result of a study of fourteen cases, concluded that dementia and apraxia are independent of each other.

Marie (24) expressed the view that apraxia is the result of an intellectual deficit, and that apraxia is really an aphasia of feeble intensity. He believed that the order is not understood, nor does the patient have an exact idea of the gesture which corresponds to the given order. On the other hand, according to Liepmann, the mental deficit is the result of the lesion causing the apraxia and not the cause itself.

My own view is that a certain degree of intellectual deficit exists in these cases. The patient does not always recognize the incorrect result, in fact, believes that he is performing the act properly, when in reality he is apractic in his movements. This may be purely a psychic deficit or it may be agnosia or, what is more likely, a combination of the two.

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1732 PINE STREET.

ANARTHRIA AND ITS RELATION TO APHASIA.*

By T. H. WEISENBURG, M. D.,

Philadelphia,

Professor of Neuropathology and Clinical Neurology, Medico-Chirurgical College.

By anarthria is meant inability to articulate words, and by dysarthria a less difficulty in articulation. At least, this is the meaning that has always been ascribed to these words until Marie interpreted anarthria differently. In the usually accepted view the anarthric speech is slow, weak, monotonous, indistinct, and sometimes hesitating or scanning, this varying in different cases, and is the result either of an involvement of the motor nuclei in the medulla and pons, that is, the motor nuclei of the twelfth, eleventh, tenth, ninth, seventh, and fifth cranial nerves or of their central connection between the above mentioned nuclei and the cortical centres in the lowest portion of the precentral convolution, that is, it occurs either in true bulbar or pseudobulbar palsy.

Marie, and later Moutier, however, define anarthria as "a more or less pronounced disturbance in the articulation of words, not dependent upon

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paralysis of the lips and tongue. Possibly it is a kind of incoordination or ataxia. It often exists pure, in the isolated state, associated with no other changes, in which case it is the anarthria of Pierre Marie. An individual, often young (syphilitic or cardiac), is the victim of a right sided hemiplegia. When he recovers from his coma or somnolence, he cannot speak. His tongue, though not paralyzed, does not obey his will. He understands all, but says nothing. There is but one symptom; the suppression of articulate speech. Sometimes monosyllables are preserved, and are used for every attempt at speech. Communication by gesture is perfectly well done."

Moutier, in discussing the diagnosis of aphasia, states further that "the diagnosis of aphasia in general is easy, the principal differential points being pseudobulbar paralysis and senile dementia. Anarthria, when total, may lead to the suspicion of pseudobulbar paralysis. In anarthria the trouble is verbal; in pseudobulbar paralysis it is vocal; and there is paralysis of the tongue in the latter, but not in the former. The anarthritic patient can sometimes say a few words or syllables, and he says them vigorously. The patient with pseudobulbar paralysis can say what he wants to, but he says it with a weak voice and mumbling. The anarthritic tends toward reovery; the pseudobulbar paralytic grows progressively worse."

Further, Moutier in discussing prognosis in aphasia states, "that cases of anarthria are susceptible to reeducation, because in these cases intelligence is intact, this greatly facilitating a cure. At the end of six months to a year the patient may have almost entirely recovered, but it is exceptional for recovery to be absolute."

From the foregoing it can readily be seen that Marie and Moutier themselves differentiate between the paralytic view of anarthria and their own interpretation, and they do not hold that in Broca's aphasia, which to them is a syndrome, consisting of Wernicke's aphasia plus anarthria, there is paralytic difficulty in talking.

According to Marie, "it is upon a lesion of the lenticular zone that anarthria or motor disturbance of articulation depends. This zone comprises the central gray nuclei, that is, the nucleus caudatus and lenticularis, the internal and external capsules, the island of Reil, and the fibres from the motor cortex, as well as an important series of association fasciculi of the brain. In post mortem examination in cases in which anarthria exists, according to Marie and Moutier, the areas commonly found involved are those beneath the island of Reil, the lenticular nucleus, the internal capsule, the external capsule, and the foot of the corona radiata. Usually different systems are simultaneously involved. In front, the lenticular zone stops at the foot of the third left frontal gyrus. Posteriorly the lenticular zone terminates at the level of the temperoparietal isthmus of Marie. This isthmus is a bridge of white substance crowded between the bottom of the Sylvian fissure outside and the inferior horn of the third ventricle inside, and any lesion in front of this isthmus causes anarthria. Any lesion behind it causes Wernicke's aphasia."

Marie further makes it plain that he calls the lenticular zone such because the lenticular nucleus is within it, but he does not mean that the lenticular nucleus alone causes aphasia, for according to his belief lesions of the lenticular nucleus cause phonetic disturbances.

The question of anarthria and its relation to aphasia depends upon whether you apply to it its old meaning or the new one of Marie. As has been shown, the adherents of both the classical and the newer idea distinctly state that paralytic disturbance of speech does not occur in aphasia. As a consequence, there is no need to discuss further the paralytic definition of anarthria.

Marie and Moutier's definition of anarthria, after all, is no different from the usually accepted meaning of motor aphasia. They define it distinctly as a suppression of articulate speech, and state that the patient does not know how to speak, which is, in fact, what motor aphasia is. It would have been better had Marie not confused the subject of aphasia by a new interpretation of the old and accepted meaning of anarthria, for he, himself, differentiates anarthria in his sense from the paralytic disturbance of speech found in pseudobulbar palsy, yet he does not offer a new term for the latter, which would have been only logical.

While Marie states that anarthria is a division of aphasia and that it is due to a lesion in a certain portion of his lenticular zone, yet he does not give a definite pathological basis for this. He acknowledges that the lenticular nucleus causes phonetic disturbances of speech, but this, according to his own definition, is different from anarthria. To what then is his anarthria due, if not to interference with the motor fibres coming from the inferior portion of the precentral convolution anywhere in their subcortical course, including the knee of the internal capsule, lesions of which, after all, are what have always been thought to be the causes of anarthria as defined by others than Marie? Of Marie's lenticular zone—at least, of all that is left whose lesions might be regarded as having any influence in the production of his anarthria—the island of Reil and its subcortex alone remain.

2030 Chestnut Street.

THE NEED OF HOSPITALS FOR WHOOPING COUGH IN NEW YORK CITY.*

By Godfrey R. Pisek, M. D.,
New York.

New York city may well be proud of its mortality record, particularly as it applies to children under five years of age. My remarks are directed toward a better understanding of one of the diseases in which the mortality is still high, and for which it is hoped measures can be found further to reduce the mortality.

If the investigation which has just been made of our municipal institutions had been extended to the accommodations which they provide for cases of pertussis, the survey would not have consumed much time. In this regard our municipality is no better, and not much worse than any of the great

*Read before the Section in Pediatrics of the Academy of Medicine, April, 1914, as part of a symposium on whooping cough.

centres of the world in the regulations and care provided for patients with whooping cough.

Pertussis, mainly through its commonest complication, bronchopneumonia, carries away a large

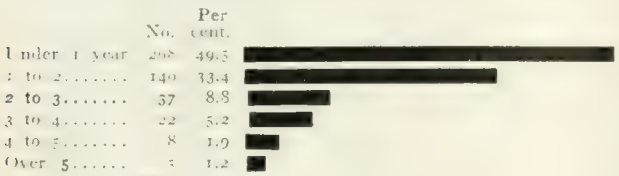


Chart 1.—Total deaths from whooping cough in greater New York in 1913 by ages.

number of the children of New York every year. That many later succumb to tuberculosis following their paroxysmal attacks, is a well

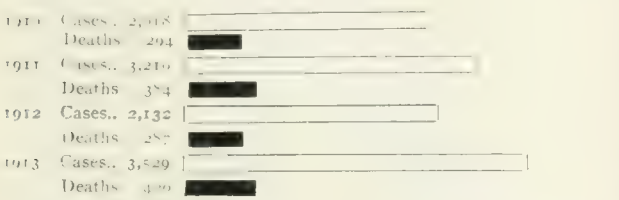


Chart 2.—Cases of whooping cough and deaths reported in greater New York.

known and deplorable fact. It seems wise, therefore, that we should study the city situation and be prepared to make such constructive recommendations as may possibly assist the authorities in coping

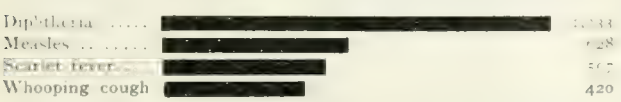


Chart 3.—Deaths from whooping cough, in relation to deaths from diphtheria, measles, and scarlet fever in greater New York in 1913.

with this problem. For typhoid fever, the physician and the laity have a wholesome respect, and are quite ready to submit to hospital care and prophylactic treatment; yet the mortality from pertussis is far greater than that of typhoid fever.

For diphtheria, scarlet fever, and just recently for measles, we have provided hospital facilities, but for a disease which demands a toll almost equal to that of scarlet fever, we have made practically no provision. Chart No. 4 shows the relation of

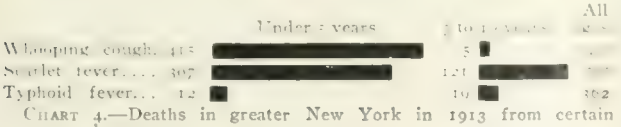


Chart 4.—Deaths in greater New York in 1913 from certain causes and age groups.

scarlet fever to whooping cough. It also shows the relation of the number of cases of typhoid fever under ten years of age in greater New York compared to the number of cases of whooping cough for the same age period.

We have in New York city 1,884 available beds for infants and children in the public or so called semiprivate hospitals; beside these there are 2,350 beds in our various hospitals for contagious diseases. At the present time there are set apart ten beds in Bellevue for complicated cases of pertussis and thirty beds at the Metropolitan Hospital on Blackwell's Island. Chart No. 5 shows the relation-

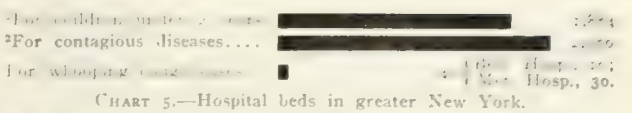


Chart 5.—Hospital beds in greater New York.

[2]No provision for whooping cough cases.

ship of the beds set aside to those provided for other diseases.

If whooping cough had only been born with some kind of a rash, I feel sure its prevention would not now need any advocates. As it is, the laity regard it as not particularly dangerous, and physicians often foster this idea or express their hopelessness in face of it, so that comparatively little medical attention is given until the patient has serious and often fatal complications.

Believing that only a comparatively small number of cases of pertussis reach the physician, and that by no means all of these are subsequently reported by him, the deaths ascribed to whooping cough during the past six months were tabulated. We made an investigation as to the number of these actually reported. Chart No. 6 shows that only one



Chart 6.—Deaths from whooping cough in the Borough of Manhattan, October 1, 1913, to March 31, 1914.

[1]Reported by attending physician previous to death, 1; reported by attending physician at date of death, 1; reported by school nurse (absentee visit), 3.

in sixty-three was previously reported to the department, that three were reported by school nurses, and that one report was sent in on the day of death.

In connection herewith it may be of interest to quote the figures from the Department of Child Hygiene, relating to contagious diseases reported by the inspectors in the schools, or found at home on absentee visits.

In 1912: 372 cases of whooping cough were found at school, 466 by absentee visits, or a total of 838.

In 1913: 291 found at school, 445 by absentee visits, total 736 cases.

These again are indicative of the number of cases which are not reported and which are only excluded because of the efficient work of the department of hygiene.

The health authorities have required that the disease be reported and the child be excluded from school, but further it has not acted. If we ask why, we find certain difficulties that differentiate this disease widely from the other contagious diseases. The comparatively long first stage, in which the diagnosis is often uncertain for days; the child not sick or uncomfortable, except in its paroxysms; and, finally, the long duration and questionable period of "safety for others," are factors which make it difficult to handle from the health board standpoint.

In attempting to formulate a plan of control, we must recognize these valid objections to general hospital care, but there still remains much to be said in favor of the hospital care of cases with complications, or the segregation of those affected.

Among our large population there appear constantly cases of whooping cough in families which

are unable to provide medical care and attention because of poverty. They are compelled to go to the dispensaries. From these after having waited and mingled with other groups of children, they are singled out as pariahs and sent home, often untreated because of lack of suitable provision, and with no instructions as to the care and prevention of the spread of the disease. Under present conditions the widowed mother of a child, perhaps the sole bread winner, is forced to remove it from the day nursery which has helped her in its care, and if she desires to place the child suffering from pertussis in a hospital, she will be denied admittance and told that our hospitals do not take such cases. From necessity she must abandon her means of livelihood, and later is often forced to take charity through no fault of her own. Thus from an economic standpoint we are obliged to consider adequate provision and control of this disease. Likewise an infant with bronchopneumonia, secondary to whooping cough, whose needs are judicious stimulation, skilled nursing, and abundance of fresh air, is deprived of these and allowed to die in its tenement home for lack of municipal facilities.

Beside these urgent needs, there is a dearth of measures for prevention. Various methods, ingenious and otherwise, have been advocated from time to time to prevent the spread of whooping cough, such as the wearing of arm bands of a specific color, or labeled "whooping cough"; the average mother is not sufficiently altruistic to apply these measures when her own child is affected, although she approves heartily of such provision for another child. During epidemics our parks are made unsafe for well children, and many are unwittingly exposed in this manner. Constructive recommendations therefore must be practical, enforceable, and economically possible.

If an intensive study of the disease was made in a selected section of the city, we feel sure that many more cases of whooping cough would come to light than are ever reported. On a more accurate basis the need for hospital beds could then be apportioned, and the public notified that the city is ready to care for those who are in need.

At the present time we have no suitable buildings available. These should be built on the open pavilion plan near the water fronts, and designed especially for this purpose; at least one for each borough. For the great number of uncomplicated cases which go about spreading the disease, disused ferry boats or barges moored to the city docks could be utilized; on these a small hospital ward should be arranged for cases needing medical attention and feeding. Dispensaries for the ambulant treatment of whooping cough could be established here, and cases referred to them which had appeared in other clinics. Children, with their mothers perhaps, could be taken in stages provided by the city to these boats, and allowed to spend the day outdoors, returning to their homes at night. Such a plan is particularly advisable owing to the fact that whooping cough differs from the other contagious diseases in that it will often demand many weeks' or even months' stay in a hospital ward, or until the period of contagion is over.

Four such boats would probably be necessary for Manhattan alone, since there are over 571,000 children in greater New York under five years of age. That the disease is quite prevalent in this section is indicated from my own case histories; the last 500 of which, children under ten years of age, showed 45.8 per cent. to have had whooping cough.

Furthermore, with such a plan, a large number can be educated to follow proper methods of prevention; well children can be spared contact, and deaths from complicating conditions prevented by proper treatment.

There is little question that provision for whooping cough cases will promote the public welfare, and moreover give physicians an opportunity more effectively to study the disease as to its early diagnosis, and to perfect the treatment along more exact scientific lines, now that the specific organism is known.

To this end the writer would move that a committee be appointed from the members of the section in pediatrics of the Academy of Medicine, who shall present to the commissioner of health a recommendation urging the establishment of wards for urgent cases of pertussis, and segregation centres for uncomplicated cases of whooping cough.

36 East Sixty-second Street.

KIDNEY DISEASE, WITH SPECIAL REFERENCE TO THE TEST FOR FUNCTIONAL CAPACITY.

By W. Egbert Robertson, M. D.,
Philadelphia.

The introduction of phenolsulphonephthalein as a quantitative tinctorial test of the functional capacity of the kidney, has been too recent to enable one to speak definitely of its value in all forms of renal disturbance; whether primary or secondary, acute or chronic, degenerative renal changes exist incident to the various infections or arteriosclerosis. To be more exact, it is probable that renal disease is never primary, but, in its acute manifestations, is secondary to some infection, and in its chronic form, is the result of changes incident to a former infection or secondary to arteriosclerosis. In any event, those who have had the privilege of correlating clinical and post mortem findings are convinced that, except in a very broad way, the microscopical and chemical examination of the urine is not indicative, first, of the type of kidney lesion; secondly, of its extent; and thirdly, of the functional capacity of the organ.

As to type, if one finds the urine greatly diminished in amount, of high specific gravity, with a relatively large albumin content, with small epithelial cells, epithelial and granular casts, more particularly blood casts, and free blood in the urine, one is fairly safe in regarding the process either as a very acute Bright's, parenchymatous, or as a case of cardiac decompensation, and in this event, of course, the clinical picture is of paramount importance. If similar laboratory reports are obtained, differing only in the absence of blood casts, and at most, in the presence of an occasional red blood cell, with hyaline, granular, and epithelial casts, and

clinically, cardiac hypertrophy, more or less vascular hypertension, marked pallor, edema, with or without impairment of vision, one is justified in looking upon the dominant lesion as a parenchymatous nephritis.

Impaired vision or even blindness may be the first clinical evidence of this condition. In all forms of Bright's disease, acute and chronic, sight is apt to be more or less disturbed, and occasionally it is the first symptom to attract the notice of the patient. It is in the uremic stage, however, that amaurosis is most apt to occur, also in the so called kidney of pregnancy; indeed, in this latter condition, it is comparatively frequent. The statement is often made that, when albuminuric retinitis has developed and the disease is in the interstitial form, when the retinal arteries are markedly sclerosed, the veins compressed, and splotches of degeneration or recent hemorrhage are visible, the tenure of life is rarely as much as two years. This is not strictly true. These conditions are not seen, as a rule, by the ophthalmologist till very late, but they have been of gradual development, and, certainly in the interstitial form, slowly progress for years. Nor can the presence or absence of edema decide the character or extent of kidney lesion. The most marked and destructive renal change may occur in scarlet fever without dropsy, while in other cases the edema may be most marked when neither the clinical condition nor urinary changes point to a severe kidney disease. The integrity of the cardiovascular system has much to do with the development of edema; often slight in the most acute cases, especially when the kidneys were previously healthy, but, in the parenchymatous variety, marked in direct ratio to its duration, as opportunity is given for both heart and vessel disease to become established.

Again, the antithesis of these forms, namely the chronic interstitial type, whether of long standing and due to an old infection, or, more likely, the result of perivascular change, is often better recognized from the clinical than from the laboratory standpoint. The urine is usually more or less copious in amount, pale, of low specific gravity, containing very little sediment, a trace or perhaps no albumin, an occasional hyaline cast, possibly no casts at all, or again an occasional granular cast. Clinically, the striking features are increased frequency of urination and, of particular importance, the necessity of rising to void at night or toward early morning, the cardiac hypertrophy, the more marked vascular hypertension, the pallor, without edema, or, at most, slight puffiness of the ankles toward night, loss of flesh, more or less dryness of the skin with palpable evidence of fibrosis or sclerosis of the radials and temporals, and, on ophthalmoscopic examination, the typical silver wire arteries overlying partially compressed veins, and often evidence of recent or old hemorrhage. Subjectively, the individual may be quite well, and only a routine cardiovascular and blood pressure examination and ophthalmoscopic examination may reveal an otherwise unsuspected lesion. On careful inquiry, however, it is usually discovered that nocturnal urination is more or less marked. Between these extreme types, all grades of diffuse renal change exist which defy recognition as to type, whether from a laboratory or clinical standpoint.

As to the second feature stated above, namely the extent of the lesion, the examination of the urine furnishes much less evidence than the study of the patient clinically, and from the standpoint of the third factor, that is the functional capacity, absolutely no conclusions can be drawn from either laboratory or clinical studies, except, of course, in the practically moribund.

It is in the presenile or prematurely senile, or for prognostic reasons chiefly, even in the senile by right of years, that one is most frequently confronted with the greatest difficulty. Hypertension, even a systolic pressure of 200 and over, is not rare in youth. Subjectively, the patient may be well, but more or less cardiac hypertrophy and vascular disease will usually be revealed on careful clinical study. Late in life, vascular change is the rule, tortuous sclerosed radials and temporals, but frequently there is no hypertrophy of the heart, and in none of these types are we apt to meet with edema, except as a very late symptom. Occurring in youth, the examples are apt to be of a family type, what might be appropriately termed a connective tissue type, in which apoplexy or uremia or definite cardiovascular changes play a large part in the immediate ancestral and collateral demise. The history is then of even greater value than either clinical or laboratory findings in estimating the probable extent of disease. Occasionally such cases have a medicolegal import, for with or without preceding mental changes (cerebral arteriosclerosis), uremic coma or convulsions may develop and rapidly prove fatal. Such a case I noted in the service of Dr. A. A. Stevens, when I was pathologist to the Episcopal Hospital. The patient was a youth, aged seventeen years, previously well, who was seized with vomiting without apparent cause, had two or three attacks of seeming syncope, and after his first convulsion, was brought to the hospital. Apart from his rigid arteries, cardiac hypertrophy, vascular hypertension, spare frame, and an appearance of age beyond his admitted years, there was nothing of note. There was absolutely no edema. While conversing with some one in the hospital ward, he suddenly suffered a slight convulsion, rallied for a brief period, seemed to have regained his normal condition, but a few hours later went into another convulsion and died. At the necropsy, I found small, red, granular kidneys, diffuse arterial change, and cardiac hypertrophy. The experience of years leads me to regard these cases as belonging to the same category as the large lunged or hypertrophic emphysematous cases so ably described by Sir William Jenner, viz., the connective tissue type. These, too, suffer fibroses at the expense of the elastic tissue, and various clinical manifestations result in the same family, depending on the distribution of the fibrosis. The presence or absence of albumin is not indicative of the extent of kidney lesion, nor even of its presence, for a so called physiological albuminuria may occur in apparent health. Rarely constant, it may appear only under certain conditions, as after cold bathing, after meals, during the morning or evening hours, or after exercise. These cases are variously termed intermit-

tent, cyclical, or orthostatic albuminuria. Proteins of various kinds may be present, serum albumin or globulin, nucleoalbumin, albumose, peptone, fibrins, or hemoglobin in pathological states. Any or several of these may be present. Albuminuria may be found in disease of any part of the urinary tract from kidney to bladder or when pus is present from any cause, even though the kidneys are healthy. Albuminuria resulting from changes in the kidney structure, temporary or permanent, occurs in cases of active or passive congestion, febrile or toxic states, or in Bright's disease, and in this latter, even in advanced forms of interstitial change it may be absent, or present only in minute quantity, though more or less marked when the predominant change is in the parenchyma.

Of more importance is the value to be attached to the amount of water excreted. Two factors are chiefly concerned here, first, the state of the general circulation including the circulation of the kidney, and, second, the amount of kidney substance present. The rate of flow through the glomeruli, rather than the blood pressure, determines the volume of urine, and when the glomeruli are swollen and diseased and the tubules more or less blocked by degenerated, dehiscent cells, as in the parenchymatous type, the urine volume is diminished, with retention of water in the body tissues, while in the interstitial type, though the glomeruli may be more or less changed and the tubules altered in shape and diminished in number, the permeability of the organ is enhanced in direct proportion to the extent of lesion, and frequent and copious urination is the rule. Abundant experimental evidence of this was furnished by J. R. Bradford, who showed that excision of a portion of one kidney in animals was followed by an increase in urine volume, greater when portions of both kidneys were excised; in proportion to the amount removed, the urine volume increased, as did the metabolic disturbance, shown by an increase in nitrogenous metabolism and by wasting of the musculature. Acute and chronic uremic states may be mimicked in animals from which two thirds or more by weight of kidney substance has been removed.

Even uremic states often fail of recognition, especially when induced by the sclerosed type of kidney. Uremia may occur in all forms of kidney disease, however. As already stated, it may be of sudden and unexpected onset and rapidly prove fatal, or, preceded by a bizarre group of nervous phenomena, hysteroid, or characterized by great irritability, may end more or less abruptly in coma or convulsions and death. These are either granular kidney cases met with from youth to old age, or the same phenomena may occur in ureteral obstruction from calculi. Uremia may occur as a result of a violent acute nephritis, especially seen in certain cases of scarlet fever, or late in the course of a chronic nephritis which has long been known to have existed, perhaps after as much as twenty or thirty years. Operative interference on those with renal insufficiency, often totally unrecognized chiefly because the renal function was not studied prior to operation, may be rapidly followed by fatal uremia. Thus uremia occasionally may be sudden, explosive, or fulminant, or more often acute and not seldom chronic, and the more acute cases manifest symptoms chiefly of nervous type, while the chronic cases may be especially gastrointestinal or both gastrointestinal and nervous. The former symptoms comprise nausea, vomiting, often diarrhea, not rarely incontinence of bladder and bowel, and quite often hiccough. The latter or nervous group of symptoms are headache, muscular cramps and twitchings, irritability, flightiness or actual delirium, pupillary contraction, dyspnea or attacks simulating asthma, prone to occur especially at night or in the early morning hours (ocasionally pulmonary edema may supervene) and as a rule insomnia has existed over a long period. Cheyne-Stokes respiration may occur at intervals or rarely be a constant symptom for weeks, especially in those in whom insomnia has been a pronounced symptom. Sudden death occasionally occurs in this type and the dyspneic type may pass on into a fatal pulmonary edema.

Uremia is classified according to the dominant symptom, as comatose, convulsive, maniacal, respiratory, paralytic, and latent. Of these the comatose is the commonest of all. Quite often it is preceded by a convulsive stage. The apogee of the convulsive type is met with in the eclamptic. Of all of these the most curious are the paralytic and latent varieties. In the former, small, focal brain lesions may be simulated, as aphasia, or paresis of an arm or leg, or more marked monoplegias or hemiplegia may develop suddenly, there is a fatal issue, and at necropsy no gross lesion is found to explain the clinical picture. In latent uremia, either advanced kidney disease exists when one ureter becomes obstructed by a stone, or when both ureters become simultaneously blocked by calculi. With the patient mentally clear, and practically symptom free, except for the more or less complete anuria, life may be prolonged for days and even as much as three weeks. Death may occur without uremic symptoms, but when these do develop, they are of rather violent type and death follows very quickly. In this respect these cases resemble bilateral cystic disease of the kidney, clinically, apart from polyuria and metabolic disturbance, in which no symptoms attract attention to the kidneys (though routine physical examination may reveal bilateral enlargements), until the more or less sudden onset of uremia. This is very different from the majority of cases of nonobstructive uremia.

Having demonstrated in the foregoing series of facts, both from the laboratory and clinical standpoint, the ease with which the presence and extent of kidney disease may escape detection, even up to and including the actual development of uremia, a few illustrative cases will be cited, showing the value of the phenolsulphonephthalein test, both in diagnosis and prognosis. The technic employed was the usual one, that is, the intramuscular injection of one c. c. of a solution containing six mg. of the drug. It is advisable to adopt the rule of giving it in a muscle, for in the edematous cases absorption will be very slow if the injection is merely subcutaneous, and in consequence the end result will be unreliable. It is not essential to determine the moment at which the drug first appears in the urine, but as an arbitrary average of time fifteen

minutes is chosen to represent this period, the urine is first collected at the end of one hour and fifteen minutes, again an hour later, and we have found it advisable to collect a third specimen at the end of the next hour. It is not necessary to catheterize before giving an injection, because the total urine volume at the end of the first hour and fifteen minutes, whatever it may be, is diluted up to one litre, and it is selfevident, therefore, that it does not matter whether the bladder is empty or not at the time of the injection, for the same amount of pigment will be discharged in either event, and the dilution is always up to one litre or a fractional portion.

In instances in which the pigment elimination is so slight as to be practically lost by the usual dilution up to one litre, the voided or catheterized specimen, after being alkalinized with twenty c. c. of a ten per cent. sodium hydrate solution, which is necessary in every instance in order to bring out the color value, the dilution should be made only to 250 or 500 c. c. The color value is then compared with that of a standardized alkaline solution containing six mg. of phenolsulphonephthalein to the litre. Normally the largest amount is eliminated at the end of the first hour and fifteen minutes, the amount varying from thirty to fifty per cent. with fifteen to twenty-five per cent. at the end of the next hour, and merely a trace in the third specimen. Abnormally, this condition is reversed, and the greatest amount is eliminated in the second or even the third hour, and in the uremic or impending uremic, elimination is often too slight to permit of definite reading in any of the specimens.

Among the numerous phthalein tests made in my recent service at the Episcopal Hospital were the following:

Case I. Man, aged thirty-eight years. Father died of tuberculosis; mother insane. Patient remembered none of the usual diseases of childhood. Had gonorrhea at eighteen years. Denied lues. Had been addicted to the use of alcohol for twenty years, especially during the last four or five, often going on debauches lasting several days. Chief complaints were edema of the feet, abdominal pain, and dyspnea. For four days prior to admission had vomited and diarrhea. Voided urine once or twice during the day and about once during the night. On admission, well developed, conjunctiva injected, face puffy and congested. Right pupil a trifle larger than the left; reacted to light. Teeth decayed; some pyorrhea. Tongue, coated, tremulous. Throat, congested. Nothing of note in the lungs. Heart hypertrophied. Edema of the tissues of the trunk, face, legs; free fluid in the peritoneal cavity. Genitals edematous. Prostate enlarged and hard.

Urine. He was admitted to the hospital September 26, 1913, and discharged October 24th, and the urine reports of those days were as follows: On entrance, light. Color, amber. Specific gravity, 1,014. Reaction, acid. Sediment, flocculent; a light cloud of albumin. Sugar, none. Few epithelium. Few leucocytes. Few erythrocytes. Many hyaline and granular casts. On discharge: Color, amber. Specific gravity, 1,092. Reaction, acid. Sediment, flocculent. A cloud of albumin. No sugar. Much epithelium. Many leucocytes. Very few erythrocytes. Uric acid crystals. Many hyaline and granular casts.

Blood pressure: September 27th, systolic, 210; diastolic, 100; right arm. September 30th, systolic, 218; diastolic, 120; right arm. October 8th, systolic, 218; diastolic, 125; right arm.

There was no evidence of a primary lesion or a scar, but his mode of living, together with the presence of an atypical eruption, led to a study of his blood and spinal fluid. Wassermann examinations were made by Dr. C. Y. White, director of the laboratory of the hospital, and myself independently, with the following result: Serum, plus 4, and spinal fluid, negative in dilutions up to 0.8 c. c. were obtained both by Doctor White and myself.

Nonne's test and Noguchi's globulin test of the spinal fluid were negative and it reduced Fehling's solution. Cytological count 30 per c. mm. On September 27th, the phthalein test resulted as follows: End of first hour and fifteen minutes, negative, end of next hour, five per cent. Three days later the patient had a convulsion and was comatose for some hours subsequently. Prompt improvement after sweats and purgation.

Phthalein test, October 3d, first hour and fifteen minutes, 12.5 per cent., end of second hour, 30 per cent. This showed an inversion of the rule, the larger amount having been eliminated during the second hour. October 8th, phthalein test, end of first hour and fifteen minutes, 15 per cent.; end of second hour, 10 per cent. Here we saw a return toward the normal elimination, though the amount was small, yet the greater quantity was put out during the earlier period.

The patient had been getting dessicated thyroid grains xv daily, strychnine grain 1/15, four times a day in addition to sweats. October 15th, phthalein test, first hour and fifteen minutes, 45 per cent.; end of second hour, 18 per cent. The Wassermann of the serum was again 4 plus on October 21, 1913. Symptom free, according to his own statement, looking very well, though having lost flesh, the physical examination remained as it had been so far as cardiac hypertrophy and hypertension were concerned, the urine examination practically the same, yet the functional test foreshadowed the onset of his uremic convulsion and improved coequally with his general improvement. Owing to the serious renal lesion, it was not considered advisable to use salvarsan or neosalvarsan during his stay in the hospital.

Case II. Sophie W., aged sixty-five years. Good family and previous personal history. No illness for years, until the development of that which she spoke of as nervousness, for which she drank a little whiskey at night. Chief complaints were weakness and lassitude, eructations of gas, slight cough, at first constipation, later diarrhea, rapid loss of flesh, occasional nocturnal urination. On admission, extreme emaciation, very restless, mental confusion, pallor, slight cyanosis, history of dyspnea for several weeks, slight edema; pupils reacted well; clean, red tongue. Heart, not enlarged, regular, slight accentuation of the second aortic sound. Long, narrow chest, acute angle, crepitant rales at bases of both lungs; marked visceroptosis; liver slightly enlarged; radials sclerotic; knee jerks absent. Incontinence of urine and feces. Test meal showed an absence of free acid. Delirious for days, with incontinence. Skin harsh and dry.

Phthalein test, September 29, 1913, first, 0 per cent.; second, 15 per cent. October 4th, sweat started. October 9th, phthalein test, first 7.5 per cent.; second 5 per cent. November 12th, much improved, especially mentally. November 14th, no longer incontinent. November 15th, phthalein test, first, 6 per cent.; second, 10 per cent. November 29th, first, 26 per cent.; second, 14 per cent.

The patient was now practically well, having gained a great deal of flesh; mentally, perfectly clear; appetite good. The urine had varied from 1,015 specific gravity, downward to 1,004 specific gravity. November 8th, up to 1,021; at all times a mere trace of albumin, with few erythrocytes and rarely a hyaline cast. No practical change therefore, in the urine, but the phthalein test was parallel with the clinical betterment. Wassermann reaction of blood and spinal fluid negative. Noguchi globulin reaction, slightly positive in spinal fluid. Blood pressure: Systolic, 140; diastolic, 80.

Case III. The patient being uremic at the time the phthalein test was made, the urine, taken by catheter, was negative on two different occasions, at the end of the first, second, and third hours. She only partly recovered consciousness, again went into deep coma, and died.

Case IV. A woman, aged thirty-seven years, who had had evidences of interstitial nephritis for several years, who clinically resembled more the picture of exophthalmic goitre than of Bright's, having nervousness, irritability, tremor, sweating, loss of flesh, and exophthalmos, with increasing pallor, cardiac hypertrophy, and, unlike Graves's disease, a blood pressure for several years of 200 up to 240 systolic, later had nausea and vomiting. A phthalein test was made, and three separate specimens were col-

lected, all of which were negative. She became increasingly drowsy, and died, comatose, two weeks later.

Case V. Aged seventy-five years, having chronic myocardial degeneration, interstitial nephritis, and cardiorenal asthma, with attacks of intense dyspnea and smothering. Nocturnal urination for several years, occasionally a little edema of the feet. Urine 1,013 and 1,010 specific gravity, very faint trace of albumin, an occasional hyaline cast. Blood pressure, 164 systolic, 84 diastolic, with phthalein test as follows: First, 6 per cent.; second, 0 per cent. Second examination: First hour, 12 per cent.; second hour, 4 per cent.

Though the phthalein test showed a diminished output, the normal relation of the first and second hour was further borne out by the clinical improvement.

Case VI. Male, aged seventy-one years. Diagnosis, chronic interstitial nephritis, uremia, and pulmonary edema. Incoherent on admission. First phthalein test: First hour, a trace; second hour, none. Second phthalein test, a week later: First hour, 7 per cent.; second hour, 22 per cent.

Improved for a while, but remained incontinent. Urine examination, hyaline casts, a trace of albumin. Blood pressure: Systolic, 120; diastolic, 75. Death occurred as a result of cardiac failure, five days after second phthalein test.

Case VII. A girl, aged fifteen years. Acute exacerbation of what was regarded as a probable diffuse nephritis. Had measles, mumps, and scarlet fever, the latter at seven or eight years of age. No complications. But for these, well until the present trouble, which began two weeks before admission, with puffiness of the eyelids and some edema of the feet. Subject to sick headaches and vomiting for a long while. Bowels regular. Occasional nocturnal urination. Slight cardiac hypertrophy. Blood pressure: Systolic, 135; diastolic, 88. Doctor Bromley found no gross lesions in the eyes, but the nerve heads were pale, with enlargement of physiological cupping of disc. Retina injected.

Phthalein test: First hour, 20 per cent.; second hour, 10 per cent. Repeated a few days later, after packs had been given, and edema had disappeared: First hour, 7.5 per cent.; second hour, 7.5 per cent. Further improvement clinically, repeated phthalein test ten days later: First hour, 22 per cent.; second hour, 5 per cent.

Urine examination from time of admission, October 11 to October 25, 1913, always about the same, a cloud of albumin with a few hyaline and granular casts and some erythrocytes.

Very many more observations were made, but with the same general result, showing beyond doubt the value of the test within certain limits, and proving the inadequacy of mere examination of the urine and the greater value accruing from careful physical examination together with the phthalein test.

327 South Seventeenth Street.

TROPICAL MALARIA AND ITS CAUSES.

By Charles S. Braddock, Jr., M. D.,
New York,
Late Chief Medical Inspector, Royal Siamese Government.

A clipping from the *Bangkok Times* shows that the most malignant malaria is found in absolutely uninhabited valleys in Siam, which agrees with my observations in Siam and along the Burmese frontier, and confirms my theory that the mosquito, while the only carrier of yellow fever, is not the only carrier of malaria, but only one of the carriers of the disease. If you eliminate the mosquito, with accompanying sanitation, you can absolutely eliminate yellow fever, but with the elimination of the mosquito you can greatly diminish the cases of malaria, but not eliminate it entirely, except where malaria does not exist except as it is carried there by the mosquito. This is true in Ismailia, in Egypt, and in mountain localities, such as the Tyrol, where the mosquito has been carried artificially, but in the true malarial countries where malaria exists in the water and soil, this is not true, as in the deep jungles of Africa, Asia, and America. In the foothills of the Himalayas, where the thermometer drops to 34° F. in the cold season, and where at that season they have no mosquitoes, malaria is so deadly that the country has become, in the course of time, uninhabited over large areas, and the man coming straight there from any part of the world where there is no malaria, and who has not the plasmodium in his blood, will in a few days be stricken with the most malignant form of the disease and die in a few hours with a temperature of 106° F., or in collapse as in cholera. Now in the island of Mauritius in 1868 and 1869 there was a terrible epidemic of pernicious malarial fever, and nearly 70,000 people died. It was soon noticed that in the mountains at an altitude of several thousand feet there were few cases, and all of the deaths were in the plains at or near sea level in the cane growing districts. Now to the best of my knowledge the anopheles mosquito has never been found in the island. A few years ago an investigation was made by French scientists and no anopheles were found on the island, but a few were found on ships in the harbor of St. Louis. The epidemic was coincident with the worst typhoons that had occurred in fifty years, causing terrible destruction to life and property, and leaving the people practically unsheltered for weeks at a time from the tropical rains, as typhoon followed typhoon during the wet season, and destroyed buildings and shelter, washed away roads and whole plantations, causing people to camp in the open, and reproducing the conditions that surrounded our troops in Cuba, where in some regiments before Santiago there were nearly 100 per cent. sick with malarial fever. The men were sleeping on the ground, drinking the stagnant water from the trenches, and exposed to the tropical rain, showing the same physical conditions as in Mauritius, but having the anopheles also. At Guantanamo, only a few miles away, the marines at Camp McCalla having shelter, having board floors to their tents, having the jungle cut away for a long distance for rifle fire, and *drinking distilled water,* had practically no illness (two per cent.) from all causes, also anopheles as at Santiago, and no mosquito protection. Now at Panama they are building redoubts at Gatun to protect the canal from land attack, and will of course clear the jungle for a great distance in all directions for rifle fire, and I venture to predict that, leaving out other matters, the barracks there will be the healthiest place in the Canal Zone. For this is the first thing to do in the tropics to prevent malarial fever; cut away the jungle and let the sun in, not neglecting mosquito conditions.

Now this has a very practical application in the tropics, for if the jungle had been cut away on a strip one quarter of a mile wide all over the route of the Madeira and Mamore railroad in Brazil, and kept cut off at the beginning of each dry season, the terrible death rate of the white employees who started the enterprise would have been greatly lessened, and the enterprise finished long before it was.

Of course the death rate among the men cutting the original jungle would have been great, even if all precautions had been made, for this is always true. Now this is known to people who know nothing of bacteria or germs, but have learned it by bitter experience. Let the sun in and the fever will go out, even if there is no sign of the mosquito. The Siamese know this well and act accordingly. All government dak bungalows have the jungle cut back as far as possible, around them and when any of the royal family start on a trip through the jungle the tropical growth is cut away six months before, so that the sun can get a good chance at the soil. This has been learned by hundreds of years of experience. When the government builds a new town, the town is never occupied till the jungle has been cut away for over one dry season, as they have learned that if they do not do so many will die of malarial fever. The Laos and Karen coolies in the north of Siam, in the foothills of the Himalayas, will drink boiled water or tea on a journey, or if they cannot do this will dig a well on a sandbar and wait patiently for the water to filter through, although they know nothing of bacteria or germs.

Now in Mauritius the malarial fever was at the sea level with the great altitudes healthy. In Siam and Burma exactly the opposite conditions prevail. There is more or less fever in the rice plains near the sea, but it is of a mild type, but as we go to the north and the altitude increases, the disease also increases in virulence, and as the disease grows more deadly the people have found that living near the ground is deadly also, so that they live as high from the ground as possible. The height of the first story from the ground in any locality is a sure indication of the severity of the disease.

Now this does not preclude the mosquito, which is at all elevations, but it means health. In the foothills and valleys of the Himalayas, in Siam and Burma at an elevation of 1,000 to 5,000 feet, is the most deadly region in the world for malaria, bar none, not even the West Coast of Africa, and this region is about 18° to 20° north latitude in Siam, but farther north in Burma. In some valleys it is almost impossible for human beings to live, the testimony of reliable observers being that in the absolutely uninhabited valleys the most malignant fever is encountered by traveling parties, so this *precludes* the conveying of the disease from men to men by an infected mosquito, because there are no persons there previously to infect the mosquito unless it acquires malaria, as I believe, from the water and soil first. But in December, January, and February the thermometer drops in these regions to 34° F., and there are no mosquitoes for months at a time. Frost and sometimes thin ice are found at these times, and the most malignant malarial fever is encountered when there are no mosquitoes to infect any one. I offer the letter of Doctor Trumpp, Chief Surgeon Royal Siamese Army, to prove this, as having occurred in the last Shan Rebellion, in the north of Siam.

BANGKOK, TATIEN, *12th November, 1907.*

Dear Colleague:

Thank you so much for your most interesting paper. I fully agree with you that there is another way of the infection with Malaria perniciosa beside the mosquitoes. They always tell us about mosquitoes, but never where the mosquitoes get it from. In 1901 I went up to Chieugkam (at that time the black point in Laos, and since then given up as garrison), where 80 per cent. of the garrison suffered from Malaria perniciosa, and died like flies. Before I reached Chieugkam I was told about the marvelous smell there, and when I had arrived I could perceive it myself immediately. It was in temporary waves, a mixture of rotten vegetation, flowers, bodies undescribable but not to be forgotten. The place was flooded in the rainy season. Funny to say, very little mosquitoes, but anopheles; in winter time for three months temperature down to 34° F. no mosquitoes at all, plenty of attacks of very bad malaria. Then I was taken myself, and had to return to Bangkok. How to explain Malaria perniciosa without mosquitoes in free tents or open bamboo barracks during a hard northeast monsoon and 34° F.? But that time the flooding had ceased, the soil dried up, and the stench had come again. The natives there aware of the danger of the soil, build their houses about twice to three times higher above the ground as the Siamese do close to Bangkok. I mention this only showing you that I had similar experience and am quite of the same opinion. The authorities will burn us as heretics, but they never have seen a jungle. A theory is a wonderful thing but sometimes it doesn't agree with the practical life and experience. If they attack you, you mention my name and we will both defend this position.

Kindly excuse my dreadful English and mistakes in orthography, but I am a German, not an Anglo-Saxon. don't forget this. Next Sunday the King returns and will be welcomed with wonderful decorations, festivities, fireworks, etc. You know this. I see you sit comfortably in a country with a human climate and enjoy your life. As soon as I have the necessary money scraped together, I will do the same. We don't become fresher and younger in this blooming museum of Malaria, Cholera, Plague, and Dysentery.

Many thanks again for your kindness.

Yours truly,

Dr. TRUMPP, Chief Surgeon, Royal Siamese Army.

The natives know these bad districts and can map them out. The British established a station in the Shan Hills some time since and were warned by the natives of its unhealthfulness, but paid no attention and the men died like flies. This was near Lashio in the Shan States. A new post was established only a few miles away, which has been found perfectly healthy.

Now we find that Koch acknowledged that his malarial mosquito campaign in German Southwest Africa was a total failure, and that he relied wholly on quinine prophylaxis in the fight, and we therefore turn to see what has been done to reduce the malarial sick rate in other parts of the world, in which mosquito destruction does not occur.

Now in the town of Wharton, N. J., malaria has been very common. It is a mining town and the miners sank a longitudinal shaft under the town, and drained all of the wells dry. The people were compelled to drink rain water and the malarial attacks ceased. This is the testimony of one of the prominent physicians of the town, as read in a paper before the New Jersey State Medical Society two years ago.

In Port Swettenham in the Malay peninsula on the Malacca Straits, when the railway was first started, the coolies building the road died in great numbers from malarial fever and were taken every night in trains to Klang, some miles away in the highlands. The jungle was then cut away for a good distance and today a peaceful village exists there. Ditches were also dug to drain the swamps and the sun was let in. The people drink rain water and enjoy fair health, although there are as many

mosquitoes there as before. But letting the sun in and drinking rain water has entirely changed conditions. There has been no mosquito destruction. This is a place where it meant death before to stay overnight.

It is exactly for this reason, I believe, that malarial fever is comparatively mild and does not often occur in the cities of Bangkok and Singapore. The sun has been let in and the people drink rain water. Hundreds of thousands of people live in health, while a few miles away in the jungle pernicious malarial fever exists. There is no limit to the number and variety of mosquitoes at both places. This is true all over the world in malarial countries, on the south coast of New Guinea, on Thursday Island, and the north coast of Australia. It meant almost sure death to penetrate the jungle, but a few years have gone by and the jungle has been cut away, plantations started, and the sun let in; the disease has steadily lessened in proportion as the country is opened up, although there is no mosquito destruction. This is true in the United States as to Ohio, Indiana, and Illinois when first settled. In the dismal swamps of Virginia, in recent years, deep wells and artesian wells have been sunk and malaria lessened by the drinking of this water, instead of the stagnant swamp water. In Mississippi the sinking of artesian wells has also lessened the malarial fever cases there by causing the drinking of artesian water.

Now even the Sakhai, the aborigines who dwell in the deep jungle of the Malay peninsula, will not drink the water from the jungle pools, but travel a long distance to carry water from the streams in bamboo tubes. They have found that by drinking this they will have less fever.

In Zanzibar Europeans can live in the city, but do not dare to live outside. This is also true of Pemba, the Clove Islands off the coast of Zanzibar. Now the anopheles exists in Zanzibar and also in Pemba everywhere, but the white man drinks boiled water or distilled bottled water, and all the mosquito curtains in the world would not save him if he slept on the ground and drank the jungle water. There must be some other cause and this, in my opinion, exists in the soil and water, and the old saying that "there is nothing new under the sun" still holds good.

Now the Italian scientists in the Roman Campagna who studied malarial fever lived in a mosquitoproof house raised from the ground, were well protected from the elements, drank wine and distilled water, and escaped malaria. They only proved that the mosquito carried the disease. If they had slept on the ground, drank the same stagnant water that the poor fever stricken inhabitants drank from the ditches, and had at the same time protected themselves as they did from mosquitos, and then had not contracted the disease, they would have proved with malaria as has been done with yellow fever—that the mosquito was the *only* carrier. They did not do so and so the matter stands today.

The U. S. Marines at Camp McCalla, in Cuba, slept in tents raised from the ground, had the jungle cut away for a long distance, *drank distilled water, and escaped,* as did the Italian scientists, but *without mosquito protection,* while the regiments camped a few miles away at Santiago did not escape, where they slept on the ground, and drank the water of the trenches and were unprotected from the tropical rain.

Near Labuan in British North Borneo there was a district which was very bad for Europeans. A few years ago a great fire took place at the end of a very dry season; the jungle was burned away, with the result that ever since the malarial sick rate has been far less. The sun was let in by the fire. Today there are as many mosquitoes as before.

Now it is noticeable to men in the tropics that malarial fever is far less severe and not so common in the rice country, which is cultivated, as it is in the deep jungle. You will see the cultivators enjoying good health in the rice fields, while a few hundred yards away the tin and ruby miners will be dying by scores of pernicious malarial fever, anopheles in both places. There are certain ranges of hills in Siam that are deadly. In building the Korat railroad there was no trouble until a range of hills was reached, about 1,200 feet in elevation. In building the road eleven miles were through the hills; thousands of coolies died, and thirty white engineers. After the hills were crossed there was no trouble. Why the difference, with anopheles everywhere? I took medical charge of an expedition of 500 men, eleven elephants, and fifty policemen across one of these ranges in the north of Siam. The men were terribly frightened and did not want to go, as the death rate from fever of people crossing had been so great as to stop travel and business. They drank boiled water and with prophylactic doses of quinine, the expedition arrived at its destination without the loss of a single man. They were also made to sleep as high from the ground as possible. They had no mosquito curtains and the jungle was cleared away in the sleeping places. To fight malarial fever, sanitation is as necessary as mosquito prevention, and this means good water and protection from the elements. Everywhere in the tropics as far as possible always use mosquito curtains, as they are absolutely necessary for comfort and health.

If you obey the laws of the jungle you can travel with comparative security in any jungle in the world. Sleep as high from the ground as possible, drink distilled or boiled water, use mosquito curtains, give prophylactic doses of quinine, and always cut away the jungle as far as possible in the camping place. I cannot lay too much stress on cutting the jungle back.

Just in proportion as the jungle is cut away and the sun let in around mines, canals and railroads, cities and towns, so will the malarial rate decrease. Then if the mosquitoes are also destroyed and the people sleep as high from the ground as possible and have a good supply of rain or distilled water for drinking purposes, or artesian well water, with good sanitation, wonderful results can be accomplished.

I personally know a civil engineer in Burma who was with a party in the jungle seven months. They all used mosquito curtains, but he was the only man who insisted on drinking boiled water and was the only man to escape fever.

On the trail from Korat in northern Siam to Nong Kai on the Mekong, on the Indo-Chinese frontier, 400 miles as the crow flies, a trail that has been in use for two thousand years as the main trail from Yunnan, China, and the Laos country to the Gulf of Siam, malarial fever has always, as far as history goes, been notorious for the death rate following it. The Siamese government has cut back the jungle so that the broad trail cut is 500 feet in width the whole distance. Since this has been done, with the jungle cut back around the Dak bungalows, fever has been decreased to a great extent. I have been over the trail and there are millions of mosquitoes, as I can testify. Now even in yellow fever, sanitation alone will do wonders.

When General Butler was in command in New Orleans during the war, with 40,000 nonimmune troops from the north, for the first time in years there were no cases of yellow fever and there were none while he was there. He cleared up the whole city, whitewashed the outhouses, the fences, the gutters, and open sewers, cleared up the French Market, and had thousands of contraband negroes at work all the time, keeping the city clean.

Now as a man who has seen yellow fever in Cuba and malarial fever all over the world, I wish to add my tribute to that noble member of my profession, Colonel Gorgas, for the wonderful work he has done in Panama, setting the pace for the medical men of the world. All honor to him. In time to come his memorial will be the great multitudes who will be alive and happy, who but for his work would be in their graves.

In conclusion, I believe that the mosquito is not the only carrier of malaria, but that, differing from yellow fever, malaria is carried by water and soil, and that the mosquito when not infected by a person suffering from malaria gets it from the water in which it was born.

My observations have been made personally in Cuba and Hayti, when a lieutenant of the line in the United States Navy, and in Siam, French Indo-China Siamese Malaya, Federated Malay States, and along the eastern Burmese frontier, while in the Siamese government service, and also in Ceylon and Egypt on my way home.

165 BROADWAY.

ORAL SEPSIS OF DENTAL ORIGIN.*

Medical and Surgical Aspects.

BY WILLIAM H. HASKIN, M. D., F. A. C. S.,
New York.

On January 17, 1914, the author read before the eastern section of the American Rhinological, Laryngological, and Otological Society one of two papers on Some Gateways of Cryptogenic Infection, taking the Infection of the Alveolar Process as his subject. Owing to time limit, it was impossible to outline more than briefly the many sources of infection and their causes, and he was grateful to have this opportunity to discuss this most important subject still further. Our medical schools practically ignore all mention of the teeth, despite the fact that teeth play a most important part in our whole life.

In 1912, the writer presented a paper before this section on The Relief of the Nasal Obstruction by Orthodontia; A Plea for Early Recognition and Correction of Faulty Maxillary Development. This paper pointed out the tremendous influence that development of the teeth has upon the general system and urged the necessity of proper and sufficient mastication as probably the most necessary factor in securing maxillary development.

The effect of the premature loss of both deciduous and permanent teeth was also described as affecting proper development, but such loss of teeth causes another train of conditions which do not develop until much later. In order to be able to masticate food perfectly, all teeth should be in normal occlusion, the one to the other, so that each of the one hundred and thirty odd planes of the teeth is in proper approximation. This ideal condition is almost never found among civilized people owing, first, to faulty development with consequent irregularities in position; and second, to caries, the latter necessitating fillings, crowns, and bridges with all their evil consequences, including extractions. How many of you have ever carefully examined the occlusion of your patients' teeth, in order to determine whether or not it is possible for them to masticate properly? It will be most interesting to you to examine fillings, crowns, and bridges to see how often any attempt has been made to reproduce the various cusps and clefts which should be present if the food is to be ground or torn up as nature intended that it should be, and the teeth not forced out of position, but we have entirely neglected this most important factor in health and as a result of our neglect the dentists have been allowed full sway and their mechanical ingenuity has produced marvellously disastrous results.

However, "murder will out" and there is now an earnest effort on the part of the leading dental men (men who are thoroughly scientific and who fully understand that the discredit must necessarily reflect upon their profession as a whole) to overcome this great evil. Our profession has been largely to blame for the present state of oral sepsis because of our ignorance as to existing conditions through lack of definite knowledge of the teeth which form the gateway of the body. This is not surprising when we realize that doctors themselves are most negligent of their own mouths and carry most offensive and unsanitary conditions constantly with them. This fact is well known to the dental profession and is a disgrace to our own profession.

Purulent diseases of the jaws always attack first the membrane lining of the teeth sockets, and must start either at the gum margin or at the apex of the root, spreading from an inflamed pulp; unless perhaps the infection is carried through a false opening of the root or pulp chamber by the dentist or by a fracture.

When it occurs at the apex we get apical abscesses, commonly called gumboils or ulcerated teeth. We know the great distress caused by these abscesses when in the acute stage and of the relief that comes when they are opened. How many realize the pathological destruction that takes place?

*Read before the Section in Laryngology and Rhinology of the New York Academy of Medicine, February 25, 1914.

Every apical abscess causes destruction of the alveolus around the apex and almost invariably a perforation of either the lingual or labial plate of bone. This is an actual osteomyelitis and there is more or less general toxemia from the bacterial poisons generated. Generally the acute condition subsides, and as all pain disappears the patient considers his trouble to be over. Very serious conditions, however, sometimes follow as a direct result of this toxic absorption.

Last May the wife of a prominent minister had a pulp extracted and her tooth filled. This was followed by an intense osteomyelitis; the tooth was opened and the inflammation apparently subsided. A few days later she became suddenly prostrated and suffered with severe gastric pains, probably from gastric ulcer. This brought on an exaggerated acute melancholia, from which she has not yet fully recovered. It has been impossible to persuade her to have the tooth examined since then, or to have a radiograph taken, although it is morally certain that a chronic abscess would be found which is constantly feeding poison into her system.

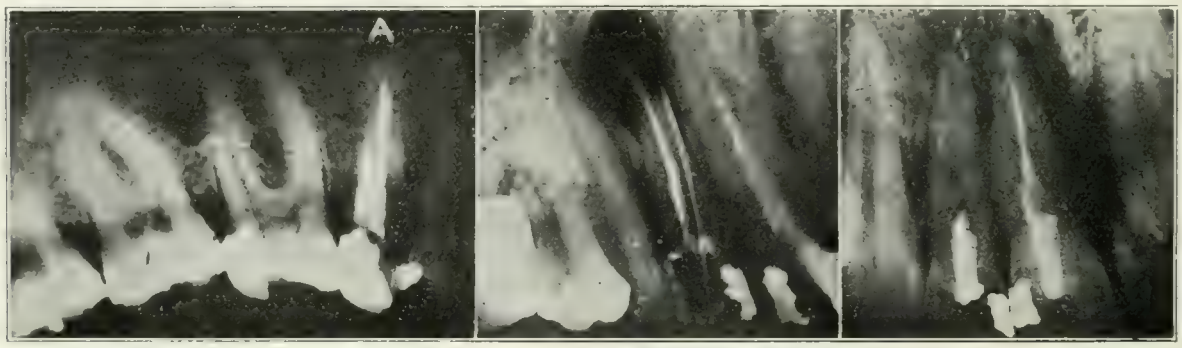


Fig. 1.—*a*, incomplete root filling and blind abscess (A); *b*, acute abscess caused by perforation of root; *c*, pyorrhea and bad root filling.

There is no doubt that many of these acute conditions, when properly handled, heal and leave no sepsis in the jaw. Unfortunately many of them do not heal, although the pain subsides and the patients consider themselves well. Careful examination of the mucous membrane over the apex will often reveal minute fistulous openings through either lingual or labial plate which lead to extensive carious cavities, as can be seen in this specimen (Fig. 6). A radiograph should always be obtained, if possible, to determine whether the root fillings have been completed, for if not it will be useless to open and curette these cavities without also extracting the teeth, which will remain as septic foci unless the root canals are completely filled. In some cases, when the caries is limited to the area around the apex it is wise to amputate this and thus preserve a useful tooth. These fistulous apical abscesses are very common and will often account for offensive breath, which of itself is most distressing. The writer has found many thus afflicted, even among patients who have been sent him by dentists who could find nothing.

Case I. A patient, E. C., aged twenty-six years, was referred to me by Doctor Tepper, April 28, 1911. He gave a history of severe tonsillitis in December, 1910, which was followed by various pains and a swelling in the left angle of the jaw. For the past week another swelling had developed near the median line which was somewhat tender on pressure, but no fistula was found. The radiograph showed an abscess over left lateral incisor which was opened, curetted, and packed. All pains disappeared and the patient was cured.

Case II. Mrs. D. M. B., aged thirty-five years, was referred by Dr. A. F. Bauer, June 12, 1911, suffering constantly with otalgia. The ear was normal. A fistulous tract over the second left upper cuspid was found, from which the secretion was extremely offensive. Operation entirely relieved her.

Case III. Miss J. B., aged twenty-seven years, was referred by Doctor Heyman, December 12, 1912. For about two years she had had indefinite pains in the upper jaw and a very offensive secretion, but could not determine where it came from. Patient was thin and anemic, and her family feared tuberculosis. Doctor Heyman had been unable to locate the trouble in any of her teeth. On very close inspection a most minute fistulous opening was found at the upper labioalveolar junction close to the frenum on the left side. On enlarging this opening through the external plate, a carious cavity was found extending backward, involving the hard palate for about an inch, and extending laterally about three quarters of an inch. The alveolus itself around the teeth was healthy and no teeth were removed. When heard from, about six months later, her general health had improved greatly and all discharge and pain had been relieved.

Case IV. D. W. R., aged forty-three years, was referred by Doctor N. for examination, May 17, 1913. This patient was emaciated, thin, and anemic and had suffered for years with indigestion. A fistula was found over the upper left lateral socket, leading into a large cavity full of most offensive pus and advanced pyorrhea of all remaining teeth. Although he had been under a dentist's constant care, there was nothing to be done but to remove all remaining teeth and bridges which was done after much persuasion, as he did not like to part with his gold brick. He rapidly gained his health.

Case V. H. H., aged fifty-three years, was referred by Doctor Heyman, October 19, 1909, for a swelling in right upper maxilla, extending up along the nose, with an offensive watery discharge from a fistula at the right lateral incisor socket. For years he had suffered from intense pains and all teeth had been extracted. Since discharge appeared pain had been less. On operating, a large hard walled cavity was found, lined with membrane, and it was thought to have been a cyst. Entire relief was obtained and a double denture gave him great comfort.

Case VI. Mr. E. S., aged forty-seven years, was referred by Doctor Tepper, February, 1913. For years had been troubled with teeth both from pyorrhea and from apical abscesses. He was badly emaciated and had had to give up a good position because of "rheumatism" and chronic dyspepsia. The radiograph showed such extensive destruction of both alveoli that he was advised to have all his expensive crowns and bridges removed, together with every root and all remaining teeth. This was done

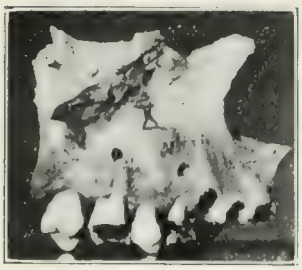


FIG. 2.—Apical abscesses over first molar and first bicuspid, moderately advanced pyorrhea.

by Doctor Tepper, who later fitted a complete double denture, and within six months the man had entirely recovered.

CASE VII. Miss G. F., aged twenty-nine years, was referred by Doctor T., April 23, 1912. For two years she had suffered with her first upper molar. Radiograph showed extensive destruction of the alveolus around his teeth and revealed the remains of the root of a bicuspid which was supposed to have been extracted. Removal of the molar and the bicuspid root and curettement brought complete relief.

CASE VIII. Miss L., aged thirty-two years, was referred by Doctor Mayer, November 26, 1910, for severe pain in the right lower jaw following extraction of a tooth which had carried a bridge cap for ten years. She had had a painful swelling below the jaw for a long time, but had not noticed any discharge, although her breath was very offensive. Examination of the remaining tooth socket revealed a fistula through the thick wall of the jaw which led into the swelling described above. This was operated upon under ether and resulted in complete relief within a short time.

CASE IX. Miss J. C., aged twenty-four years, was referred by Doctor P., December 28, 1912. She had had an abscess supposedly of left upper first bicuspid, and that tooth had been extracted ten days before by a dentist. Swelling, pain, and discharge persisted. Examination revealed decided caries in the socket and a soft mass over the second bicuspid. This was opened and the whole area thoroughly curetted, giving immediate and lasting relief.

All of the foregoing cases were carious with fistulous openings due to infections through the apices, although two also suffered from pyorrhea largely brought about by improper crowns and bridged and crowded teeth. Blind chronic apical abscesses are common and are even more dangerous.

A number of other similar cases were described in an article published in 1908 in the *Annals* of the Rhinological, Laryngological and Otological Society. All the cases were referred by dentists, who had been unable to determine what was the matter. If a doctor discovers carious bone in any other portion of the body, his first thought is to remove it, yet we have hundreds of thousands of these cases that remain neglected by us through lack of knowledge and the sufferers have to depend upon the dentist to do his best. This best unfortunately is frequently the very worst thing possible for the patient.



FIG. 4.—Advanced pyorrhea of upper and lower molars.

The following cases have been most interesting to the writer:

CASE X. Mrs. J. H., aged fifty-seven years, was referred by Doctor Heyman, January 23, 1913. Thirty years ago all upper teeth had been extracted because of intense pain and repeated swellings of the face. She had never been relieved of the pain, which extended chiefly over the right side and was described as being of a gnawing or eating character. The right side of her face was much fuller than the left. Two years ago, the right side of her face became badly swollen and painful, but the abscess broke spontaneously. One year ago another abscess formed which was opened by Doctor Heyman and had discharged an offensive pus ever since. One week ago the fistula closed and was followed by great swelling and intense pain. Doctor Heyman again opened the abscess and brought her to me for consultation. Carious bone was found and operation was performed without delay.

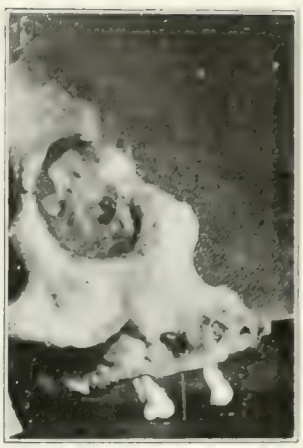
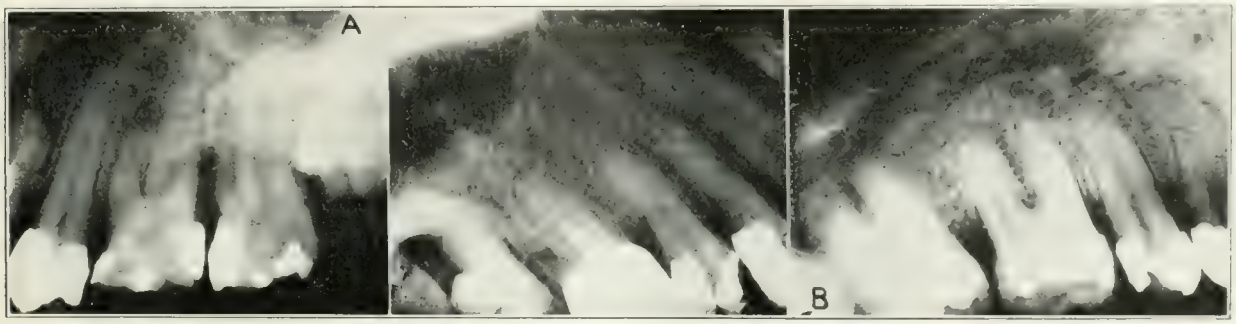


FIG. [illegible] degeneration of the alveolus.



a

FIG. 3.—a, impacted molar and atrophic pocket from bad contact and pulp stones in first and second molar (A); *b*, bad fillings, bad crown, destruction of alveolus around second molar; *c*, impacted lower third molar (B).

Deep in the alveolus the tooth herewith presented was found and extracted. It was evidently an unerupted lateral incisor and lay diagonally across the jaw under the floor of the nose. As the tooth developed it had not been able to force itself down, and in consequence the root developed backward and was bent. The rough surface or carious part of the tooth lay in the bottom of the fistulous tract. This patient was an invalid and was never allowed out alone, but since this operation she has become perfectly well and has had no further pain. Had a radiograph been possible thirty years ago, this tooth would have been discovered and all her suffering could have been avoided.



In the paper referred to above, patient No. 3

related a similar case in a woman fifty-nine years of age, referred to me by Doctor Tepper. In this case the pain had been so intense that insanity was feared, but extraction brought immediate relief.

CASE XI. Miss A. S., aged nineteen years, was brought to me by her mother, March 23, 1913. She had always been morose, irritable, and at times decidedly melancholic. Six months before she had suffered from an immense abscess on the left upper jaw, which undoubtedly arose from her dentist filling the root canal of her deciduous canine, this being still present and no permanent canine having erupted. A radiograph taken at that time showed the presence of this tooth high up and deeply placed in the alveolus, lying back of the central and lateral incisor and extending over to the apex of the bicuspid. Her dentist made light of this and advised against any attempt to remove it. Having in mind the history of the two previous cases, removal was advised and was done under ether. For several weeks her melancholy was increased, but her mother reported, six months later, that her whole nature had undergone a wonderful change for the better and she had become most sociable and an enthusiastic sportswoman.

CASE XII. I was called to see Mrs. W. A., aged forty-nine years, July 17, 1913, and found her suffering with a most intense osteomyelitis of the right upper jaw. The second upper molar had been hurriedly and badly filled as is shown in Fig. 3, the root being only partially filled. Having known this patient for over a year, it was not remarkable to find several serious conditions in her mouth. She had been for years a most confirmed neurasthenic, suffering from stomach and heart and from insomnia. A very offensive breath had been noted at all times, and this acute attack gave an opportunity carefully to examine the alveoli. A fistula was found over the left second bicuspid with most offensive secretions and, owing to bad fillings, there were deep atrophic pockets between several teeth filled with decaying food, but there was practically no actual pyorrhea. The radiograph revealed the rather unusual condition of three impacted third molars which have undoubtedly been a source of many nervous disorders. Under scientific treatment by Doctor Rhein, the left bicuspid and the right molar were put in excellent condition and the patient's health showed great improvement. She has refused operation for removal of the impacted teeth for the present but will probably acquiesce later.

CASE XIII. F. B., aged nine years, presented another unusual condition. When he was examined, a swelling was found on the labial side of the right lower first molar with a fistulous opening. The tooth was apparently perfect and there was no pain, although the probe extended into a deep cavity. The radiograph showed a large walled area enclosing the roots of this tooth, which was probably a cyst. As will be seen, there was no indication of any third molar in this jaw nor any evidence of a second bicuspid. Very unfortunately the first molar was extracted by a dentist in the country, and one can look ahead and think of the long chain of results that will probably follow from lack of development, lack of masticating surfaces, and lack of support for the remaining teeth.

CASE XIV. Mrs. S. E. K., aged fifty-four years, was referred by Doctor Tepper, December 11, 1912, for a growth in the right upper first bicuspid socket. For fifteen years this tooth had been crowned, but about a year ago the tooth had been pushed out entirely. There was no pain nor bleeding. The mass was very hard and about the size of a robin's egg. It was found to be pedunculated and was easily removed, proving to be an osteofibroma with a central osteoma. The patient reported, July 1st, that her health was much improved and she was able to wear an artificial plate with comfort.

To attempt to describe Riggs's disease in full is impossible for lack of space. This disease forms the second starting point for inflammation of the peridental membrane. It can always be found without difficulty if looked for. It always begins with a reddening of the margin of the gum, which becomes tender and bleeds easily owing to inflammation. If not arrested, this inflammation slowly spreads up along the roots of the teeth separating the dental membrane, forming pus pockets which gradually involve the alveolus itself and give rise to the name pyorrhœa alveolaris or pus producing alveolitis. We must bear in mind that whenever pus flows, pyogenic membrane and pus producing bacteria are to be found. The etiology is most extensive and includes overcrowded teeth, not sufficient teeth, bad crowns, bad fillings and bridge work, overeating, and insufficient cleansing. Many people are greatly astonished when told that they do not cleanse their teeth and are apt to become offended unless they are shown how ineffectual their efforts have been and are instructed how to cleanse them properly. Unless cleansed properly, mucous plaques accumulate along the gingival borders of the teeth which become hardened by deposits of lime salts, thus forming the tartar deposits. These may occur on any tooth, but most frequently first deposit on the teeth nearest the orifices of the salivary ducts, i. e., the upper second molars and the lower central incisors.

Overcrowding or lack of support of teeth from extractions is a frequent cause of pyorrhea. These conditions act by causing movements of the malocluded teeth on mastication which sets up inflammation of the peridental membrane. Badly fitted crowns and bridges make it impossible thoroughly to cleanse the teeth, and in addition they rarely allow perfect occlusion and thus set up irritation. Much careful and scientific investigation is being carried on in the study of this disease, which includes the questions of diet and bacteria.

It is impossible here to outline the various theories. The one important thing to know is, that if discovered in time it can be cured by careful instrumentation and proper local applications. Vaccine treatment is being used more and more and with excellent results, but only when combined with proper cleansing. Proper diet will undoubtedly influence the deposit of the lime salts, but will never cure a case without proper cleansing.

It is now recognized beyond doubt that these alveolar pus cases cause many systemic diseases, the chief being rheumatoid arthritis, endocarditis, gastric ulcers and dyspepsia, and kidney diseases. As the diagnosis of these conditions has been made by Osler, Mayo, Sir William Hunter, Kinnicutt, Manges, Billings, Collins, and hosts of others in our own profession it is time that we consider this subject seriously and make it our duty to study the jaws most carefully. The following cases may be interesting:

CASE XV. R. B., aged fifty-one years, a prominent minister, came to me, October 30, 1913, with tonsillitis. Extensive pyorrhea was found, and the left upper second molar was removed with artery forceps, it being attached to the alveolus at the tip of one root only. The tooth spoke for itself. As the patient was going away for a trip, the writer scaled and cleansed his lower central incisors, being ashamed to have him go away with a mouth in such condition. He did not return for five weeks, when he was attacked by a double peritonsillar abscess. The teeth sockets were again found to be pouring out pus, and cultures showed the tonsillar and tooth infections to be the same. He then went to a dentist and was given autogenous vaccines. In six weeks most marked improvement of health had been noted.

CASE XVI. D. B. H., aged fifty-five years, came to me suffering with gout (?) April 17, 1913, and a severe racking cough of several weeks' duration. He was a heavy eater, of sedentary habits, and a hard smoker. His mucous membranes were typically red and thickened. His teeth

showed extensive Riggs's disease. He was referred to a specialist for pyorrhea, his diet was regulated, and autogenous vaccines were given. When last seen, October 11, 1913, he reported that he had not been so well in years; his jaws were in excellent condition and he had not had any cough for months.

CASE XVII. F. W. S., aged sixty years, came to me suffering with severe earache, November 20, 1913. Had suffered for years with poor health, stomach trouble, and malnutrition. He was a friend of twenty years' standing, but this was the first occasion the writer had to examine him. The ear was normal, except for a slight eczema at the external meatus. His mouth was in frightful condition, being filled with outrageous crowns and bridges. Heavy deposits were found on all remaining teeth and on the metal appliances as well. After removing all deposits and treating the gums the otalgia disappeared. He has been advised to have all teeth removed as his alveolar processes are undoubtedly in the condition of these bones that are shown in the illustrations.

The writer urges that more attention be paid to these pyogenic conditions which are causing so much disease. (Figs. 4 and 5.) The slides made from bones in the writer's collection and wet specimens surely show that we have to deal with bone disease, and if this occurred anywhere else there is no question that much stress would be laid upon it. Many articles are appearing on the bacteriology of this disease, and several bacteria have been described as being especially active. Medalia asserts that he has found the pneumococcus in ninety-three per cent. of cases. Dr. Joseph Head, who is one of the most active and scientific of investigators along this line, says that he is unable to attribute to any one germ an etiological role in pyorrhœa alveolaris. When administering a vaccine he prepares an autogenous vaccine containing all the different organisms found in each case. He says that vaccines are often of great value, but only when proper scaling and polishing of every affected root has been done.

40 EAST FORTY-FIRST STREET.

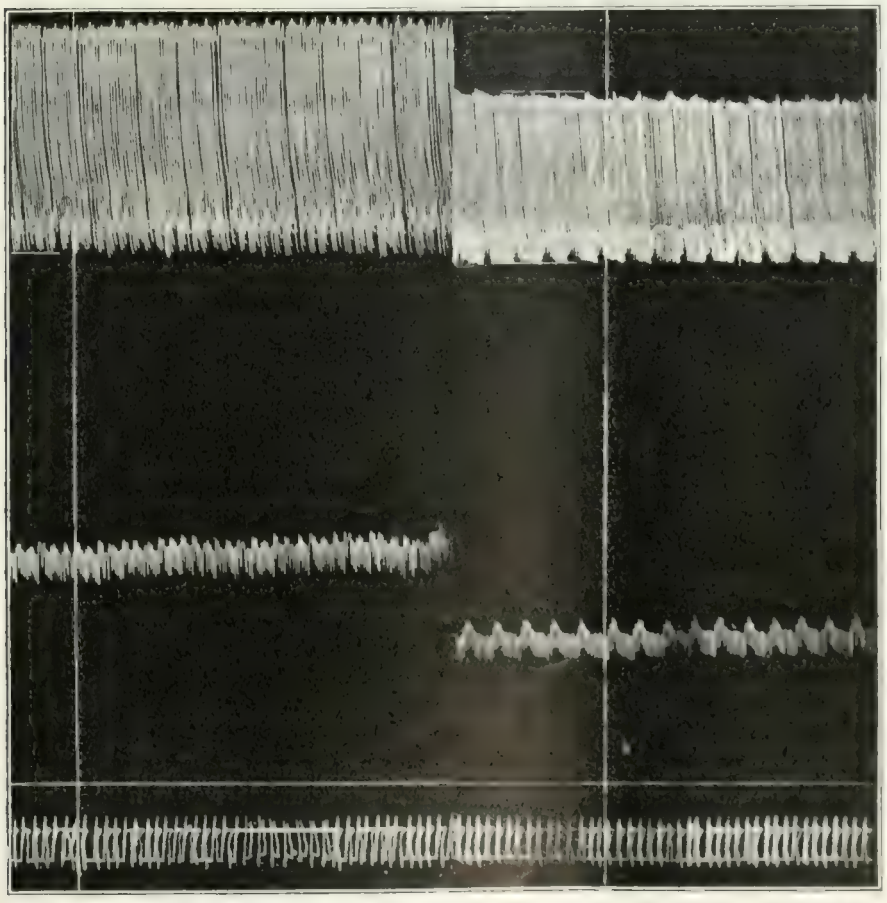


FIG. 1.—Showing the condition of the [illegible]. First half, normal dog. Second half, same dog in moderate shock. Systole increased [illegible] greatly decreased. Force spent. Pressure low.

SHOCK.

BY EUGENE BOISE, M. D.,
Grand Rapids, Mich.

The literature of the condition that we now call shock is practically as old as the literature of surgery, but the descriptions were vague and uncertain till, in 1827, Treves grouped them under one head and called it shock. Its pathology was not understood, nor is it fully understood at the present time.

Erichsen, in 1869, wrote vaguely about it as a "derangement of the harmony of action of all the great organs of the body." But, following him, the various authors gradually narrowed it down to a vasomotor paralysis. For instance, Gay, in 1888, says "experimental physiology has demonstrated that in shock there is a reflex paralysis of the heart and abdominal vessels, through the medium of the vasomotor system"; that there is "a reflex inhibition, probably in the majority of cases general, affecting all the functions of the nervous system, and not limited to the heart and vessels only." This theory is practically like that offered by Meltzer more recently.[1]

Fisher, in 1890, said, "traumatic shock is virtually a vasomotor paralysis, especially of the splanchnic vessels, the vascular disturbance is the primary and chief factor and the other symptoms are caused by the resultant anemia."

Groeningen voiced the theory accepted till lately of vasomotor exhaustion when he said "the apparent vasomotor paralysis is in reality *exhaustion from* overstimulation by traumatic impulses." Crile,[2] in 1899, arrived at the same conclusion, but stated further that "failure of blood pressure is the primary and principal (if not the sole) cause of all the symptoms of shock." While Crile's conclusions differ very little from those of Groeningen and some others who preceded him, the researches and experiments by which those conclusions were

[illegible]

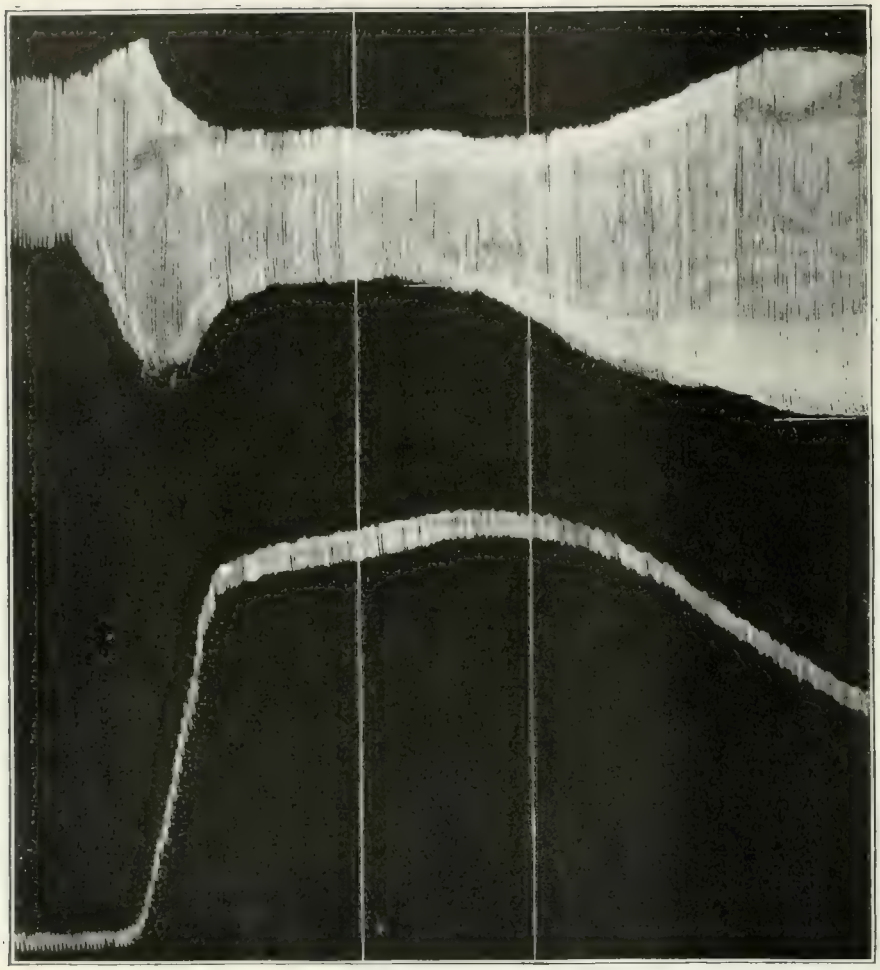


Fig. 2.—Showing action of epinephrine on heart. First half, tonic contraction of veins, causing increased blood supply to and from the heart, with rapid rise of pressure. Second half, tonic contraction of heart. Increased systole and decreased diastole, the same as in shock (Fig. 1).

reached were so elaborate, and apparently so thorough and exhaustive, that the theory of vasomotor paralysis was firmly established as the correct pathology of shock. But gradually doubts as to the correctness of this theory began to apear.

Howell, of Johns Hopkins, writing in 1903,[3] expressed himself as being dissatisfied with the theory of vasomotor paralysis, and advanced the theory that there are two forms of shock, a cardiac and a vascular, but that neither of them is due to an exhaustion of the medullary centres, but that there is an inhibition of the tonus of the vagus and of the vasomotor centre.

W. T. Porter, of Harvard, made a series of thorough experiments to determine definitely whether shock is practically or actually a vasomotor paralysis, and he emphatically says that the vasomotor cells are, in shock, neither depressed, exhausted, nor inhibited. J. D. Malcolm,[4] of London, as the result of his researches and clinical studies, arrived at the same conclusion. Seelig and Lyon,[5] of St. Louis, have proved experimentally that in shock the peripheral vessels are *contracted*, a condition incompatible with vasomotor paralysis. They also show that the vasomotor centre is not only not exhausted, but on the contrary is more active than normal in response to stimulation.

Henderson,[6] of Yale, advances the theory that acapnia is the cause of shock. In laparotomies, for instance, this acapnia is caused by the escape of carbon dioxide from the exposed tissues. He also adopts Malcolm's view that there is an escape of serum from the veins into the tissues, causing oligemia, with consequent lowered venous tonus, and that this necessarily causes lowered blood pressure by reason of the scanty supply of blood to the heart. He makes a very strong and plausible argument.

Gray and Parsons[7] made a series of thorough and interesting experiments as to the nervous responses to afferent stimuli and the changes in blood pressure. They state that their experiments demonstrated that to every afferent nervous impulse there is practically instant efferent response. Normal or ordinary afferent impulses cause normal physiological responses. Exaggerated or violent afferent impulses cause exaggerated responses. The stimulation of the vasomotor centre by surgery results in efferent stimuli to the entire sympathetic system, resulting in, 1, rise in blood pressure from general vasoconstriction; 2, acceleration of the pulse rate; and, 3, diminution in the size of the pulse because of contraction of the arteries.

They also say that their experiments show conclusively that there is no resultant exhaustion of the vasomotor centre, yet they attribute the fall of pressure in shock to fatigue of *pressor* fibres. That is, that in a mixed nerve the pressor fibres become exhausted earlier than the depressor, consequently the normal equilibrium is disturbed and afferent stimuli finally cause depressor effects.

It is universally admitted that the pathology of psychic, traumatic, and surgical shock is practically the same, or, as Crile[8] puts it, "so in shock from injury, in exhaustion from overwork, in exhaustion from fear, and in the collapse from a prolonged surgical operation, the impairment of function is the same."

In fatal cases of psychic shock autopsies show us, in some cases, rupture of the left ventricle of the heart. In others the heart is found contracted, empty, small, and hard, an absolute demonstration that the fatal impulse which caused the death was

[3] Vaughan's *Festschrift*.
[4] *Lancet*.
[5] *Surgical, Gynecological and Obstetrics*, August, 1911.
[6] Henderson: *Acapnia and Shock*, v, p. 398.
Boston Medical Journal, April 27, 1912.
Medical Times, New York, August 3, 1913.

strongly stimulant in its nature, causing instant unyielding cardiac spasm. There was no time for vasomotor exhaustion, nor was there even time for pressor exhaustion and depressor activity. Nor can we, in cases of sudden and severe traumatic shock, well conceive how time for pressor exhaustion, as in these cases the onset of the shock is presumably coincident with the onset of the injury. Therefore we must conclude that whatever may be ultimately accepted as the true pathology of shock, it cannot be vasomotor exhaustion, nor pressor exhaustion with depressor activity.

In 1893[9] I published my first paper on shock. In it I maintained that the pathological condition in shock is a hyperirritation of the entire sympathetic nervous system; and today an analysis of the various symptoms would tend to confirm the correctness of the theory; the cold perspiration induced by strong reflex stimulation of the secretory nerves; the scanty urine caused by the contraction of the arterioles; the relaxation of the sphincters caused by severe stimulation of the ganglia which control peristalsis. But because the innervation of the sphincters is partly from the cerebrospinal system, control over the sphincters is seldom lost. The dusky pallor of the skin and mucous membranes is due to the collection of blood in the capillaries and veins because of the contraction of the arterioles, this contraction being caused by strong stimulation of the vasomotor centre and the augmentor nerves of the heart; the mental hebetude is due to cerebral anemia by reason of contraction of the arterioles. And so all the symptoms of shock can be most plausibly explained by this theory of hyperirritation of the entire sympathetic nervous system. But the stumbling block to its acceptance has been the apparently contradictory fact that invariably in shock the blood pressure is low, when it should apparently be high if this theory is correct. To explain the circulatory conditions, many and strong papers have been written, and, as we have seen, many plausible theories have been advanced. It is being accepted, however, that the arterioles are contracted by reason of strong stimulation of the vasomotor centre. (See papers by Seelig and Lyon, Porter, Malcolm, and others.)

In the paper that I wrote in 1893, and in every paper that I have written since that time, I have stated my belief that the one and only cause of the low blood pressure in shock is strong stimulation of the augmentor nerves of the heart, by reason of which there ensued a condition of cardiac hypertonus, the heart contracting strongly in systole and relaxing very imperfectly in diastole.



FIG. 3.—Showing toxic action of moderate dose (.6 c.c.) of veratrum viride (intravenously) on normal dog.

Others are admitting this condition of the heart, notably Yandell Henderson, who states that he has seen animals die in profound shock from cardiac tetanus, because the heart could receive but little blood and could supply but little to the tissues. But he attributes this scanty supply of blood to the heart to low venous pressure caused by oligemia, due to osmosis of serum from the veins to the tissues. I cannot agree with him, because if there was no cardiac hypertonus, the heart could and would receive all the blood it might need.

Wachenfeld says: "It is undoubtedly true that the blood, when it returns to the right auricle, does so under very low pressure. We may safely say under the remainder of the pressure that has propelled it through heart, arteries, capillaries, and veins." Howell says: "The pressure in the peripheral veins normally is less than in the capillaries, and declines as the blood reaches the large veins. Very close to the chest the pressure is below the pressure of the atmosphere," yet the normal heart receives all the blood that it needs.

But Crile,[10] whose experiments have been many and elaborate, says, in stating his records of autopsies in fatal cases of shock: "The large venous

[9] Transactions American Association

trunks were full, sometimes enormously engorged. The arteries were empty. The veins of the splanchnic area were not more distended than those of the somatic, unless the experiment had included some procedure in the splanchnic region. The left ventricle and the left auricle were empty, or nearly so. The right auricle usually contained some blood, the right ventricle little or none." If Crile was correct in his observations (and there is no reason to doubt that he was), the venopressor mechanism was not weakened in the cases of fatal shock observed by him.

In 1907 I made a series of experiments on rabbits and dogs, by which I endeavored to ascertain the nature of the afferent impulses sent to the nerve centres by injured peripheral nerves, also the nature of the efferent responses. It was also my object to ascertain the effect on the heart of severe and long continued irritation of afferent nerves. These experiments showed conclusively that the afferent impulses were unmistakably stimulant, as were also the efferent responses; that (as was also shown by Gray and Parsons and others) every afferent stimulus caused increased systolic activity, with increased blood pressure, up to a certain point, but that beyond this point there was increased systolic contraction, but *decreased* diastolic relaxation, with consequent *lowering* of blood pressure; that in fatal cases the heart became gradually smaller and finally stopped in systole. It was contracted, hard, and empty. The arteries were only partly filled, but the veins were full, thus corresponding to the condition described by Crile.

I reiterate my belief, therefore, that the cause of the low blood pressure in shock is imperfect filling of the heart and arteries; that the imperfect filling of the heart and arteries is due, not to a weakened venopressor mechanism, but to a tonic contraction of the heart by reason of which it cannot relax sufficiently to receive blood from the engorged veins.

I base this conclusion on the following facts: First, on the charts, as made by the myocardiograph during my series of experiments; second, on the fact that I have seen the heart, under continued stimulation, grow smaller and harder; third, on the evidence of Henderson, who says that rapidly induced acapnia may cause such a severe cardiac hypertonus that death results from cardiac tetanus; fourth, on the contributory evidence of Groedel, Mowitz, Dietelen, and others who state that in the so called collapse of athletes after severe and prolonged exertion they have, with the orthodiagraph, seen the heart grow small and firmly contracted rather than acutely dilated, as has been heretofore believed and taught.

The accompanying charts are part of my records, and, to my mind, show conclusively that the cause of the low blood pressure in shock is intense cardiac spasm. In all the charts the upper broad tracings represent the amplitude of the heart beats. The next lower tracings are of the blood pressure, while the straight line next lower is the zero line, absence of pressure, death. In all of the charts the down strokes represent systole, the up strokes diastole.

The first chart represents the condition of the heart in shock. The first half is from a normal dog, before he has been thrown into a condition of shock; the second half is from the same dog in a condition of moderate shock. Compare the tracings in the second half with those in the first; the blood pressure is much less, and the amplitude of the heart beats is much smaller, but this is entirely at the expense of diastole. Systolic contractions are more forcible and more rapid. Diastole is many millimetres less than normal. The heart relaxes with difficulty. Blood pressure is low *because of cardiac spasm.* The condition of shock into which the animal has been thrown has been brought about by strongly stimulant afferent impulses whose equally strong efferent responses have caused this condition of hypertonus, with the consequent low blood pressure.

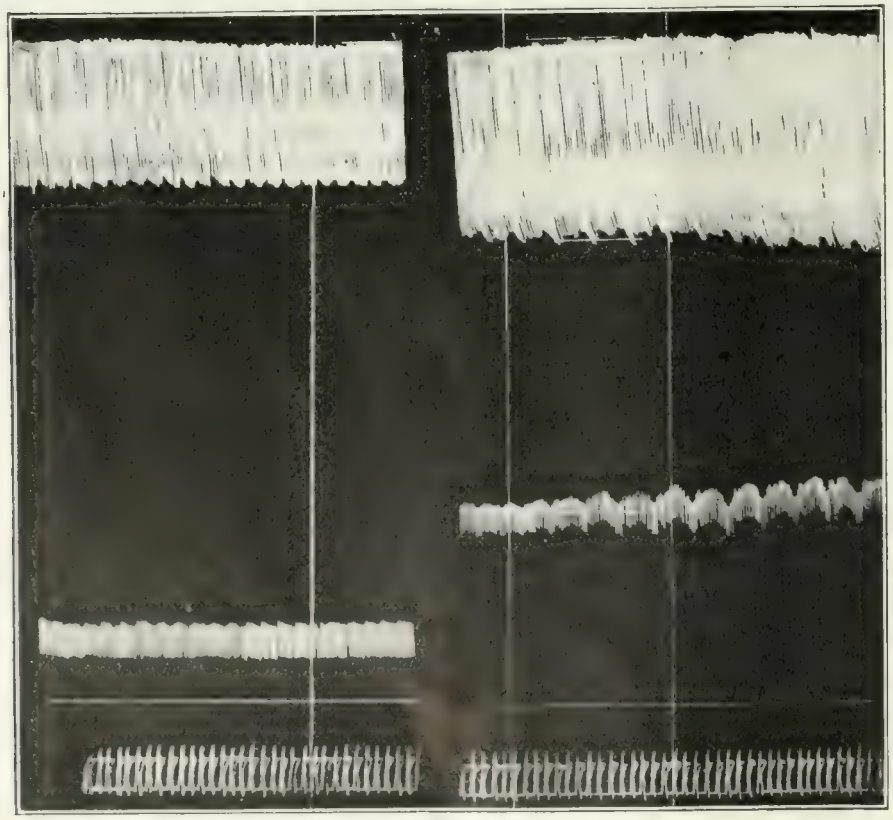


Fig. 4.—Showing action of large dose (4.7 c.c.) of veratrum viride (intravenously) on dog in profound shock. First half, low pressure and diminished amplitude of heart beat. Cardiac spasm. Second half, blood pressure restored to normal after use of veratrum viride. Amplitude increased. Cardiac spasm overcome. Normal output from heart. No toxic effect.

The second chart represents a normal dog which has not been thrown into a condition of shock, but to which has been administered at intervals

intravenously 0.6 c. c. of a hypodermic preparation of veratrum viride. It will be seen that the heart is thrown into violent and irregular contractions, an acutely toxic condition.

The third chart shows the action of a *large* dose of veratrum on a dog in profound shock. The first half of the chart shows this condition of profound shock, the very low blood pressure (just above the zero line) and the diminished amplitude of the heart beats, brought about, as I hold, by the condition of cardiac spasm, which is the principal factor in the pathology of the circulatory conditions of shock. The second half of the chart shows the results of an intravenous injection of 4.7 c. c. of an extract of veratrum viride in divided doses. This is *nearly eight times* the amount given to the normal dog, which was, by this smaller dose, thrown

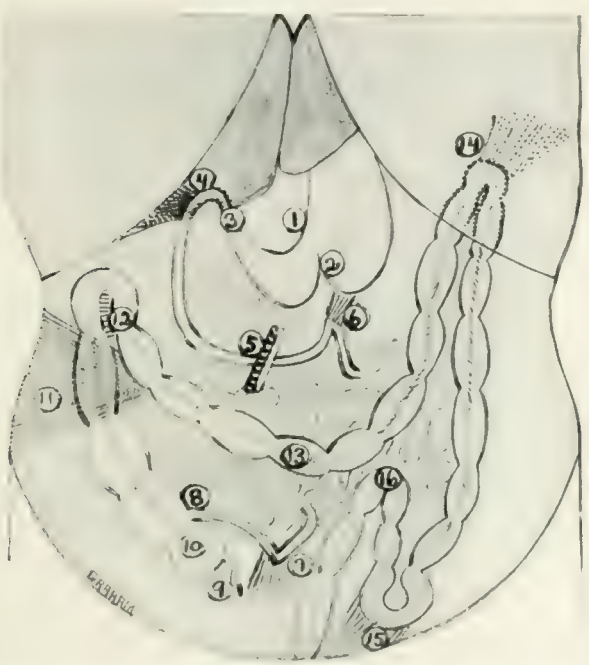


FIG. Diagram, showing causes of gastrointestinal stasis (Graham). 1. Prolapsed stomach. 2. Hourglass stomach. 3. Pyloric obstruction. 4. Adhesions at the duodenum. 5. Mesenteric ileus. 6. Adhesions at duodenojejunal angle. 7. Lane's kink. 8. Incompetent ileocecal valve. 9. Chronic appendicitis. 10. Mobile and dilated cecum. 11. Jackson's membrane. 12. Adhesions at the hepatic flexure of the colon. 13. Prolapsed colon. 14. Adhesions at the splenic flexure of the colon. 15. Adhesions at the sigmoid. 16. Angulation at the rectosigmoid junction.

into a toxic condition, yet the only result of this much larger dose on the profoundly shocked dog is a relaxation of the overstimulated heart, normal blood pressure, and enlarged amplitude of the heart beats, the dog being apparently restored to a normal condition. It would seem that there can be no other adequate explanation of the phenomena of shock; that we may safely accept the theory that in shock there is hyperirritation of the entire nervous system and that the low sympathetic blood pressure and the other circulatory conditions are due to contracted arterioles and cardiac hypertonus. Whether this condition is due to acapnia or to excessively stimulating afferent impulses, or both, I do not know. The indications are to relax the cardiac spasm and fill the peripheral arteries. This must be done before shock can be abolished.

GASTROINTESTINAL STASIS.

By Henry Slack Graham, M. D.,
New York.

Hardly any issue of a medical journal can be taken up of late without finding in it some reference to gastrointestinal stasis. The references which occur in these articles will be more easily understood by a little study of the accompanying diagram which shows many of the factors in the causation of this disease. In addition to those causes of stasis which are capable of being shown in a diagram, may be mentioned, gastric atony, gastric dilatation, cancer or ulcer of the stomach or intestines, stricture of the intestines, spastic or chronic constipation, constipation due to other diseases such as tabes dorsalis, chronic peritonitis, and pressure from without.

474 First Street, Brooklyn.

ALCOHOL ACIDEMIA.*

A Preliminary Report.

By Samuel Stern, M. D.,
Atlantic City.

The objects of the following preliminary report are, first, to supply the data required to understand the significance of the action of alcohol upon the metabolism and nutrition of the body; and, secondly, to indicate the specific therapeutic medication for the relief of the morbid conditions due to overindulgence in alcoholic liquors.

It scarcely needs mention that alcohol is the chief and most constant element of disturbance in the beverages under consideration, the difference in degree depending upon the percentage present. It may be added that while alcohol per se is by the litmus paper test neutral in reaction, alcoholic liquors yield an acid reaction. The alcohol used in spirituous beverages is obtained by fermentation or distillation from grains, vegetables, fruits, etc., and either method, if continued, readily changes ethyl alcohol by oxidation (used in such cases) into higher chemical compounds, the most common being acetic acid or vinegar.

The *United States Dispensatory* states that acetic acid is obtained by oxidation of ethyl alcohol; $C_2H_5OH+O=C_2H_4O_2+H_2O$, thus changing ethyl alcohol from a neutral mixture under favorable conditions into an acetic acid compound of the organic group. Acetic acid, as we know, is normally formed in the stomach, from sugars and alcohols in food. Ethyl alcohol, according to Gould's *Dictionary of Medicine*, is a monobasic acid having the properties of monohydric alcohols and aldehydes, a series of neutral compounds resembling bases, exhibiting gradations corresponding to their increase in molecular weights. Ethyl alcohol is regarded chemically as the type of a series of carbon compounds called alcohols; it is a hydrate of oxide ethyl. The textbooks of physiology and medicine agree that ninety-five per cent. of all alcohol consumed is disposed of chiefly in the body by oxidation,

*Read at the meeting of the American Society for the Study of Alcohol and Other Narcotics, Philadelphia, December [illegible]

and that under normal conditions it is decomposed into carbonic acid and water, and as such eliminated by the lungs, skin, kidneys, and intestinal organs.

Normally the blood is alkaline, sodium carbonate and phosphates being the principal alkalies in the body fluids and tissues. Especially are to be noted the facts that as carbonic acid is liberated by the lungs, the alkalies are liberated in the blood and used to saturate other carbonic acid affinities, while the organism loses a portion of its alkalies for some of the bases, uniting with the urinary acids and being eliminated as salts. The alkalies constitute an integral part of the protoplasm, keeping in solution the albumins with which they are combined in varying modifications, and all alkalies lost are replaced by food, any reserve of alkalies being stored in the blood cells.

Von Noorden holds that the organism has a tendency to maintain its own alkalinity, any reduction being fraught with serious consequences. Now alkalies are lessened or withdrawn by two methods, the lessened ingestion of food containing alkalies; and by the larger quantities of acids in the food. Noteworthy, therefore, is the fact that these are precisely the actions of alcohol in the system, so that von Noorden's warnings are pertinent and suggestive when he says that there are numerous forms or manifestations of self poisoning, the ingestion of alcohol admittedly being one. The acid forms are the gravest of all, as will be readily seen, the especial perversions of metabolism resulting in the excessive production of betaoxybutyric acid, diacetic acid, and acetone, which so decisively cause danger in diabetes and complicate other diseases more or less seriously.

It thus becomes clear that these conditions, combined with other disturbances of metabolism and nutrition, constitute or increase a larger part of the ills of inebriates focused under the general term alcoholism. They suggest specific and scientific methods of therapeutics based upon a logical interpretation of normal and abnormal physiological functions.

A brief review of the perverted physiological relations as they occur in alcoholism, and of the chemical bodies opposed to normal metabolism, may prove of service. As to the blood, Fouget avers that daily intoxicating doses are without effect, but Pouchet says that under small repeated doses of alcohol, the blood gradually undergoes fatty changes, because the emulsified fats entering the blood with the chyle are not consumed as under normal conditions. At the same time the alkalinity of the blood is lowered, the coagulability rises and a process of dehydration goes on—a fact to be well noted, and readily corroborated by other authorities.

One of the dangers or possibilities of lowered alkalinity of the blood and tissues, however, is sulphuric acid poisoning resulting from perverted metabolism. Bunge has shown that this acid is a product of the catabolism of proteids, and that it may accumulate in the system through insufficient alkalies to combine with it and aid in its elimination. Crothers, in Sajous's *Encyclopedia*, directs attention to betaoxybutyric and diacetic acids, and acetone, in the dyspepsia of alcoholism, a fact confirmed by many clinicians. Those familiar with the symptoms of chronic alcoholism will remember the acetone or benzene odor of these patients. As to the formation of these acids, etc., they belong, as is well known, to a secondary alcohol group produced by metabolic subversions. Von Noorden thinks they are due to a peculiar inhibition of oxidative processes, and he believes that oxybutyric acid represents a more advanced degree of oxidation. According to Osler, Dieulafoy, and other authorities, pyrosis due to an increase of hydrochloric acid, with the presence of butyric and lactic acids and other fermentative changes is a common and disturbing element in drinkers. They also speak of the aversion to food, or neglect of proper feeding.

It seems clear, therefore, that alcohol plays a double role; first, the normal physiological reduction of alcohol by oxidation produces a larger quantity of carbonic acid which demands alkalies to effect its elimination; thus the general alkalinity is lowered temporarily or permanently in proportion to the quantity and frequency of drinking, and the failure in quantity and quality of food to replace the alkalies required. Secondly, alcohol lowers alkalinity, and, in addition to its failure to maintain the proper metabolism of proteids, provides an increase of free carbonic acid in the blood to combine with free carbohydrates and hydrocarbons, which are subject to chemical changes normally or abnormally present in the body. Thus alcohol is readily converted into acetic acid, acetone, diacetic acid, lactic and butyric acids, oxybutryric and betabutyric acids in the presence of fermentative and other conditions favorable to chemical conversion. These conditions are present in alcoholics.

TREATMENT.

As to therapy the simple conclusion draws itself: Mild alkalies are demanded. By the aid, for example, of sodium bicarbonate, I have obtained an undoubted and immediate correction of the disturbances of metabolism described. In addition, there is a profound hypnotic effect superior to that of other narcotics or sedatives in its absolute freedom from afterdepression or excitement, phobias, etc., common with other drugs frequently advised.

This hypnotic effect is limited to the early stages of treatment, the first and second days, say, and is probably dependent upon the preceding high acidity or low alkalinity. It thus serves, in a way, to indicate the return to normal conditions. Decided diuresis and diaphoresis are other effects of this treatment, the latter being more pronounced. And elimination and neutralization are as undoubted, in a short period of time; and without hypnotics or opiates, which, I believe, do more harm than good in the treatment of inebriates.

I have, in this way, treated cases of simple alcoholism, alcoholic confusional insanity, delirium tremens, and alcoholic pneumonia, one of Korsakoff's psychosis—all with restoration in the remarkable short time of from two to five days, and an average of three days.

The dose should be large; two drams of the bicarbonate, for instance, in eight ounces of water, every half hour or hour, will be well borne, and may be ordered with perfect safety. The water is needed because of the dehydrating effects of alcohol, and

for its diuretic and diaphoretic action. Without untoward effect, I have, in one unusual case, given 1,320 grains of the bicarbonate in twenty hours, and with clearly marked benefit. It is probable that, when all the abnormal processes are better understood, other sodium and potassium salts may be demanded by the organism to complete the return to normal physiological conditions.

I might add that there is probably a relationship between the narcosis of ether and of chloroform and the facts I have set forth. To these subjects I purpose to return soon.

117 South Virginia Avenue.

UTERUS DUPLEX CUM VAGINA BIPARTITA.

By George Ritter Smith, M. D.,
Mount Vernon, Wash.

Cases of double uterus are not reported with regularity, and I judge the finding of such a condition to be of interest. Anomalies of development in the genital tract are common and cause not a few of the perplexities met with in practice. According to De Lee there is one case recorded of two complete parturient canals in which two vulvæ were present.

My case presents the features of double cervix with separate uterine cavities and partial septum of the vagina occupying the lower third. By reason of the anomaly of development no small difficulty was encountered in the operative procedure undertaken.

Case. Mrs. M., aged thirty-two years, para iv, American, family history negative. *Personal history.* As a young girl, subject to dysmenorrhea, so severe as to require morphine on many occasions. Married at twenty-two years. Abortion about one year later at three months pregnancy. Second pregnancy resulted in premature labor at seven and one half months, and the birth of a girl, now eight years of age and in good health. About this time patient manifested pulmonary tuberculosis and was in poor health for several months. Third pregnancy normal; boy, six years of age, in good health; fourth pregnancy normal; boy, four years of age, in good health; fifth pregnancy normal, precipitate labor; boy, eleven months of age, in good health.

Present history. First saw patient, February 8, 1913, on date of last confinement. Labor being precipitate and third stage normal, no examination was made at the time and condition not discovered. Within a week following the delivery, patient showed acute exacerbation of the old pulmonary tuberculous condition, with temperature 106° F. for several days, cough, pleuritis, retention of urine, meteorism, and delirium; for three weeks the prognosis was grave. Gradual improvement resulted in fair recovery after three months, and at this time the interruption of any subsequent pregnancy was advised.

About October 1, 1913, I was consulted as to possible existing pregnancy. In view of her anemic condition the amenorrhea was not seriously considered until October 15th, by which time the appearance of other signs made the diagnosis of pregnancy tenable.

Considering the fulminant attack of tuberculosis of a few months previously, I decided, in consultation with Doctor Pompe, of Vancouver, Wash., to interrupt the pregnancy. October 16th, with Doctor Pompe assisting with the anesthesia, I dilated the cervix and on insertion of finger failed to find a sac. Curettage was done and we decided that no pregnancy was present. The septate vagina was noted, but as it occupied the lower third only and I was skeptical of pregnancy, I passed the question of double uterus.

Evidence of pregnancy continued until November 19th, when, in consultation with Doctor Cassel, I again dilated the cervix under anesthesia. I inserted a finger up to the left horn and found it empty. Close examination of the irregular cervix revealed a second cervix to the right, obscured by the multiple tears present.

Dilatation and insertion of a finger disclosed a three months' fetus in the right cavity. The right

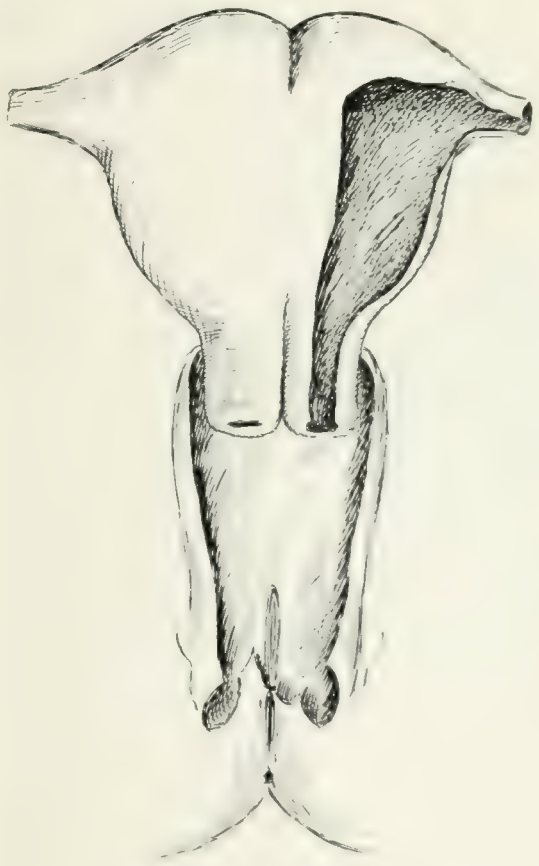


Fig. Double uterus and cervix.

cervix was a virgin cervix, and evidently the five previous pregnancies had all occurred in the left uterine cavity. It will be noted that of the four living children, one is female and three are males. A mild sapremia developed, following delivery of the fetus, and necessitated an intrauterine douche, which presented further difficulty in finding the right cervix. An uneventful recovery followed.

The history of abortion in the first pregnancy at three months, and of premature labor in the second, is in accord with the findings in several recorded cases of anomaly of the parturient tract. There is no history of menstruation having occurred from the empty horn during any of the pregnancies, as in some few cases recorded.

Therapeutic Notes.

Treatment of Acidosis in Diabetes mellitus and Cholera asiatica.—Magnus-Lévy, at a recent meeting of the Berlin Society for Internal Medicine and Pediatrics (*Semaine médicale,* November 26, 1913), pointed out the utility of hypodermic injections of a solution of sodium bicarbonate as a substitute for, or supplementary measure to intravenous injections of this or other alkalies in diabetic acidosis. Sterilization of a solution of sodium bicarbonate by the ordinary means, however, is not practicable, as heating decomposes the bicarbonate with evolution of carbon dioxide, and the resulting solution is very apt to cause necrosis of tissue at the site of injection. The procedure advocated by Magnus-Lévy consists in adding to the bicarbonate solution a small amount of phenolphthalein, and in passing through the (heated) fluid immediately before its hypodermic injection, a stream of carbon dioxide from a tank or Kipp generator. The phenolphthalein indicates by a pink color the least trace of sodium carbonate present through decomposition of the bicarbonate, while the carbon dioxide leads to reconstitution of the bicarbonate, the pink color disappearing when this process is complete. A four per cent. solution of sodium bicarbonate thus prepared was injected subcutaneously in amounts as large as one litre without the least necrosis or inflammation resulting in any instance. The fluid is more irritating than normal saline solution, owing to its hypertonicity.

Rosenthal, at the same meeting, reported results obtained in the treatment of cholera in Bulgaria, confirming the statements of Magnus-Lévy. Subcutaneous use of a five per cent. solution of sodium bicarbonate, sterilized before injection, regularly caused tissue necrosis and infiltration, whereas when powders of the bicarbonate were dissolved in previously sterilized salt solution and the solution then directly injected, little trouble was experienced. The alkaline injections are not of use in the acute stage of cholera, but are of use later, in the so called "choleraic coma," which supervenes during apparent convalescence, and is manifested in a return of cyanosis, coldness of the extremities, positive venous pulse, infrequent and deep breathing, and imperfect articulation. Normal saline injections, so useful in the acute stage, are without effect in this condition, which seems to be essentially an intoxication by acids, Quincke and Hoppe-Seyler having found diminished blood alkalinity and increased urinary acidity in such a case of choleraic coma. By giving alkaline injections, sometimes intravenously and at others subcutaneously, Rosenthal was able to save twelve out of twenty-four of the comatose cases, while before this measure had been employed, the mortality among these patients had been 100 per cent.

Treatment of Otorrhea by Zinc Ionization.—H. Lewis Jones, in his recently issued opusculum on *Ionic Medication,* avers that good results may be obtained in otorrhea by the following method: The meatus, after being cleansed, is filled with a warm solution of zinc sulphate (usually of two per cent. strength), and a positive wire or electrode introduced, previously wrapped with cotton to protect the sides of the meatus from direct contact with the metal. A current of three or four milliampères is then gradually applied and, after the lapse of six minutes, as gradually turned off again.

Treatment of Leprosy.—V. G. Heiser, in a report from the Bureau of Health of the Philippine Islands (*Journal of Tropical Medicine and Hygiene,* December 1, 1913), states that in June, 1913, there were released from San Lazaro Hospital in Manila two persons who, previously afflicted with leprosy, had been pronounced free from the disease after treatment. In both cases, admitted several years before, vaccine treatment had been given at first, but without improvement. Crude chaulmoogra oil was then given by mouth for some months, in doses gradually increased from 15 to 60 and in one case to 300 drops a day. There was some apparent improvement in the second case, but the oil, after a time, was no longer borne well, and hypodermic injections of the following mixture were substituted:

℞ Chaulmoogra oil, }
Camphorated oil, } .....of each ℥ii (60 c. c.);
Resorcinol, ...℥i (4 grams).

Mix, dissolve with the aid of heat on a water bath, and then filter.

In the first case the mixture was given for a month in the dose of 30 minims (2 c. c.) every three days, then for a month in the dose of 80 minims (5 c. c.) every eight days, and next in the dose of 160 minims (10 c. c.) at the last mentioned interval. As this large dose was borne badly, the amount was then reduced again to 80 minims (5 c. c.) which was injected every eight days for three months. At the close of this period all the leprous lesions—limited to the face—had disappeared, and the leprosy bacillus could no longer be found in smears. All treatment was then suspended for a year, during which time the patient remained microscopically negative. Injections of 30 minims (2 c. c.) were then given every ten to thirteen days for nine months, after which the patient was discharged. In the second case, similar injection treatment was followed likewise by disappearance of the bacilli, together with a great improvement in the patient's general appearance. At the time of discharge all macules had disappeared, though there was still some suffusion of the face.

The fact that these cases have remained negative for two years affords ground for the belief that the results may prove more permanent than in cases that have hitherto shown benefit from the use of chaulmoogra oil. To avoid arousing excessive hopes for the present, however, the author points out that in the experience of the bureau one leper has apparently recovered without treatment and that of twenty patients who have already been under the treatment outlined above for over a year, only a small number have been benefited.

Treatment of Anovulvar Vegetations.—Rudaux, in *Quinzaine thérapeutique* for December 10, 1913, calls attention to the fact that the elasticity of the local tissues is impaired through the presence of these vegetations, which consequently predispose to lacerations in labor. Besides, these

growths afford a nidus for bacterial growth, which may be the starting point of puerperal infection or of purulent ophthalmia in the child. It is therefore important to treat these growths as soon as they appear. At first vaginal injections of the following solution are frequently sufficient:

℞ Potassii permanganatis, ...gr. xv (1 gram);
Aquæ bullitæ, ...Oiv (2 litres).
Fiat solutio.

Wet dressings of gauze moistened with the same solution should be simultaneously used. Where the growths fail to disappear, each one should be treated with:

℞ Argenti nitratis, ...grs. xlv (3 grams);
Aquæ, ...℥i (30 grams).
Solve.

Or with:

℞ Chromii trioxidi, ...grs. c (7 grams);
Aquæ, ...℥v (20 grams).
Solve.

After the application the following powder should be dusted on:

℞ Zinci oxidi, .
Acidi tannici, } .....āā ℥iiss (10 grams).
Talci, ...
M et ft. pulvis.

Where the vegetations are observed for the time at the close of pregnancy, they should first be disinfected with wet dressings of potassium permanganate solution or with hydrogen dioxide solution diluted with two parts of water. Then, five or six days later, they should be curetted and removed with scissors, each pedicle being ligated or, where a ligature would not hold, cauterized with the thermocautery. The rather copious hemorrhage which takes place at times should be arrested by applying pressure and some form of astringent powder.

Mistletoe as a Diuretic.—Bonnamour and Naz, in *Lyon médical* for December 28, 1913, report having witnessed the energetic diuretic action of a maceration of fresh mistletoe, both in man and rabbits. The only active variety of the plant proved to be that growing parasitically on the hawthorn; mistletoe obtained from other parts exerted little or no action. In rabbits subcutaneous or intravenous injection of a fresh decoction caused an outflow of urine to the extent of one half litre, and a 350 per cent. increase in the elimination of urea, persisting for several days. Clinically the drug proved most efficient in cases of chronic nephritis with edema or uremic manifestations and in arteriosclerosis. During its administration the urinary output showed a rapid increase, often amounting to double that previously procured by a milk diet. Simultaneously the urinary chlorides increased, and the urea elimination attained the normal or even exceeded it, on the second or third day of treatment. The blood pressure dropped—in one case from 230 to 150 mm. Hg. (Pachon instrument)—the body weight diminished, edema disappeared, and general improvement was noticed. Pleural effusion or ascites, when present, often disappeared with the edema, but the best results were obtained with the drug where tapping or venesection had previously been carried out. Albuminuria was generally reduced—to a certain minimal limit—during the period of increased urinary output. Whenever the drug was discontinued the excretion of urine, with its several constituents, diminished. On the whole, the remedy seemed to the authors to deserve a place equivalent to that of squill as a diuretic. The mode of administration they employed consisted in macerating one to one and one third ounce (30 to 40 grams) of the fresh drug in one quart (litre) of white wine. The resulting preparation, given in doses of four and one half ounces (130 grams) a day, was almost invariably well borne where other preparations of mistletoe had not been readily tolerated. Stress is laid on the use of a fresh preparation, experiments having shown that after a few days the diuretic property of the drug is impaired and the depressant effect on the blood pressure is replaced by one of circulatory stimulation and bulbospinal excitation.

Uses of Passive Hyperemia in Otology.—E. Botella, in *Revue hebdomadaire de laryngologie*, etc., for December 20, 1913, is stated to have obtained good results in acute otitis media, with or without mastoid involvement, as well as in chronic otitis media, by the application of the Bier passive hyperemia principle. No costly special apparatus was found necessary, the only instrumentation used being a series of glass tubes, bent and olive shaped at one extremity, and of varying calibre. The olivary extremity of each tube was covered with thin rubber tissue, to facilitate accurate adaptation to the meatus. To the other end of the tube was attached a strong aspirating rubber bulb. To avoid prolapse of the walls of the external canal the rounded extremity of the tube must be deeply introduced. In two cases of otitis media, the use of the apparatus was followed by recovery. In two cases of caries of the attic the same result was obtained, while in four other cases of this condition there was marked improvement. The suction procedure may be employed as a test treatment in adhesive otitis, and is also useful whenever external pressure on the tympanum and ossicles is to be overcome. The apparatus should be applied for ten to twelve minutes at a time, and removed when blood begins to appear. The negative pressure should be established and discontinued only gradually, to avoid producing giddiness.

Heliotherapy and Seashore Treatment in Tuberculous Peritonitis.—Gaubert, at a recent meeting of the Association française de pédiatrie (*Paris médical*, October 18, 1913), presented conclusions he had reached from observation and treatment of twenty-one cases of tuberculous peritonitis on the southern coast of France. While the disease sometimes undergoes spontaneous resolution under hygienic and dietetic treatment alone, the solar cure, or heliotherapy, regularly brings about cessation of the subjective manifestations in a rather brief period and disappearance of the exudate after a longer interval. Seashore treatment will yield approximately the same results, especially during the period of convalescence. It is of advantage to combine the two methods whenever possible. On the whole, heliotherapy and treatment at the shore, singly or combined, appear to the author to be the procedures of choice.

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EDITORS
CHARLES E. DE M. SAJOUS, M.D., LL.D.
CLAUDE L. WHEELER, A.B., M.D.

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DEFECTS IN DISPENSARY ADMINISTRATION.

In most hospitals in New York, the dispensary adjunct has always been a kind of poor relation or neglected stepchild, ill provided with necessary equipment, entirely ignored when appointments are made to the hospital service, and regarded usually with superior tolerance as a feeder for their wards or with contemptuous indifference by a medical board upon which the outpatient staff has no representation. This is a curious anomaly when it is considered to how large an extent the reputation of a city hospital with the public depends upon the personnel and ability of its dispensary staff. Hospital managers should know that this extraordinary inconsistency, in not a few cases, is entirely satisfactory to their attending physicians and surgeons, who do not object very strongly to having their own importance magnified by the glaring contrast between the splendor of the hospital and the meanness of the dispensary. The latter often bears about the same relation to the former that a bread line or soup kitchen does to a first class hotel. No very good reason has ever been adduced, however, why honest, careful, scientific work among outpatients should not be considered as dignified and as worthy of recognition and encouragement as service in the wards.

That dispensary conditions are not satisfactory to the workers in them is indicated by the increasing difficulty in filling vacancies. In the dispensary of one well known institution a number of important specialties are no longer represented. As ambulant genitourinary, neurological, and gynecological patients are not admitted to the wards, we have the spectacle of a hospital amply endowed and affiliated with a university, which is no longer discharging its obligations nor fulfilling the trust imposed upon it by its generous founders and subscribers. The embarrassments of this particular institution are entitled to no sympathy from physicians, as they are largely due to a singularly stupid and ungenerous policy which has resulted in numerous resignations from its staff. Heads of departments, many of whom are well known specialists who have given fifteen or twenty years or more of loyal, efficient service, were recently reduced to the rank of clinical *assistants* to men, their juniors, who admittedly had no special knowledge or qualifications. Among the victims of this ludicrously inept "reorganization" were a number of men who held good positions on the attending and consulting staffs of other institutions. Naturally nothing remained for them but to resign and the vacancies thus created have in most instances not yet been filled.

At another dispensary men who are giving every year many thousands of dollars in services are charged tolls if they are detained by the business of the institution and desire to telephone to their offices. It is rare indeed that the laboratory facilities or use of the Röntgen apparatus of the hospital are extended to the dispensary staff. The dispensary physician is exposed to the risks of strike malpractice suits, which he must defend at his own cost. The hospital corporation is protected by its charter and has declined to assume the burden of defending its unpaid staff. The dispensary doctor is beginning to ask why he is unpaid, and why he should render arduous and valuable services with little recognition and no privileges or emoluments as the servant of a wealthy corporation which pays its lawyers, chaplains, and architects, its superintendents, nurses, and clerks. "The laborer is worthy of his hire."

OCULAR COMPRESSION IN DIAGNOSIS AND THERAPEUTICS.

Although compression of the eyeballs has been, of late, the subject of numerous articles, all have referred to the phenomenon as one of mainly physiological interest. More recently, however, the slowing of the pulse and diminution of the intensity of the heart beats, which in some instances reached complete arrest and general collapse, the

production of respiratory disorders, such as cessation of the thoracic excursions and inspiration or spasmodic expiration, suppression of reflexes, and also disturbances such as albuminuria, glycosuria and polyuria, nausea, a tendency to fall forward, failure of the knees, and fainting, have claimed the attention of clinicians. In the light of present knowledge, several bulbar centres must be implicated in the process, the peripheral excitation being received, doubtless, through the sensory terminals of the fifth pair. It has been hoped, therefore, that compression of the eyeballs might prove of diagnostic and therapeutic value.

As to diagnosis, tentative tests have shown that in exophthalmic goitre, the "oculocardiac reflex," as the phenomenon has been rather prematurely termed, was markedly exaggerated in most cases, since marked slowing of the heart beat could be obtained, as noted by Sainton and also by Lesieur, Vernet, and Petzetakis (*Lyon médical,* April 5, 1914). In senile and alcoholic tremors practically no reaction was obtained; the reflex was also abolished in fourteen cases of Parkinson's disease. In general paralysis the results varied with the stage reached, very marked response having occurred in four out of six cases examined. This also proved true in multiple sclerosis.

As to therapeutics, the readiness with which morbid phenomena could be awakened by compression of the eyeballs led Loeper and Weill (*Bulletins et mémoires de la Société médicale des hôpitaux,* April 9, 1914) to ascertain recently whether the procedure could not be resorted to as a remedial measure. The results obtained were such as to afford encouragement. In subjects who suffered from vertigo, tinnitus, pharyngeal and pharyngolaryngeal spasm, these morbid phenomena could be arrested for a time. Respiratory neuroses of an asthmatic type could sometimes be made to cease for a prolonged period. The most striking results, however, were obtained in a condition which occasionally causes considerable anxiety—more or less incoercible hiccough. In this condition bilateral compression of the eyeballs brings about instantaneous arrest of the symptom. Persistent yawning, as humiliating at times as it is uncontrollable, may also be mastered by the simple measure of compressing one's eyeballs. This applies also to spasmodic sneezing, an expression of central hyperesthesia doubtless, since, as in a case witnessed by the writer, it may be brought on by trifling emotions, excitement, etc., irrespective of any physical irritation of the nasal mucosa. Though tried only in comparatively benign disorders, compression might ultimately be found useful for the control of some of the more severe forms of spasm, those of tetany, tetanus, puerperal eclampsia, etc., which so often thwart all remedial efforts. The so called "oculocardiac reflex" is at least worthy of additional investigation.

SOME ASPECTS OF CRIME.

In our issue for February 21st last we gave a review of an interesting work on crime, which, however, to our mind, presented little more than the conventional views of the subject. We find it impossible, after a careful study of the theories of Lombroso and his more scientific successors, to yield assent to the proposition that there is a definite criminal class. Already disbelief is strong in the significance of Lombroso's stigmata, and probably there are not moral characteristics universal among "criminals." There is no more a criminal class than there is a poor class or a rich class or a class of moderate means with fixed and definite characters. Society is not thus divided into strata or layers, but the various kinds of men are woven together from top to bottom of the social fabric, like the colored threads in a piece of woollen dry-goods. From top to bottom will be found threads of all colors, good people, bad people, and average people who make up the great majority. There are criminal types in royal and noble families and there are noble and well nigh unspotted characters among the lowliest. The possessor of a deformed ear or an asymmetrical face does not necessarily join the "ranks" of crime; very ugly and asymmetrical folk will be found in the church and among the aristocracy, living in penury and resisting temptation, if indeed there is temptation. There are people from off whose breastplate temptation falls with blunted barb, there are others, weak and selfindulgent, who yield to every passing thought, who become obsessed by a predatory impulse and know no peace till satisfaction is obtained by possession or achievement. The difference between the millionaire, longing for a railroad and finally getting it at the cost of ruin to thousands of small investors, and the petty thief manœuvring for a pocketbook and adroitly purloining it, is one of degree only and not of kind. Writers on crime seem to be oblivious of magnificent peculation and forget altogether the predatory nature, even the existence, of the big thief; wholesale acquisition has a different mien from small acquirement. The watering of stock is a form of larceny; cornering the food market is a detestable crime; have all the bulls of the Chicago exchange overmarked zygomata?

The fact that the data of the criminologists are gathered from criminals *who are caught* invalidates them absolutely. The generalizations, if of value

at all, apply only to those who have not the wit to evade exposure and capture, and therefore take no account of the most precious of criminal types, the successful thief, the millionaire of speedy fortune.

We have considered only the thief so far, as the commonest type of criminal. Omitting the pyromaniac and similar types, as probable lunatics, take the murderer. The accidental murder, by a burglar, for example, what is it but evidence of a lack of common human caution, an inability to estimate chances, and so merely a symptom of minor intelligence? The carefully planned murder, on the other hand, may be racial, a mere folk custom. It is part of the creed and education of a certain class of Sicilian; it forms part of his moral code; to him it is not a crime, although forgiveness would be. Does the Sicilian killer bear Nature's brand? The murder of the New York streets, the so called gangster or gunman murder, is due in all probability to drug crazed brains, minds so dulled with a combination of narcotics as to demand noise, blood, and rapid movement for the stimulus a sober man can get from a glass of wine or a visit to the "movies." These gangs are recruited from all kinds of uneducated citizens; if they are to be classified, it is as multidrug consumers.

Despite his anthropometric and other objective studies, the criminologist is still too much addicted to introspection. To him personally crime is unthinkable and he can attribute it only to an abnormal brain. It is he who is usually abnormal in lacking the almost universal predatory instinct, an exaggeration of which is the mainspring of crime. We cannot agree to a broad classification of humanity into two great groups, honest and criminal; everybody is potentially a criminal, needing only sufficient magnitude or a particular kind of reward and sufficient guarantee against detection. It is difficult, but not impossible, for a king to be a criminal; it is difficult, but not impossible, for a pauper to be honest. We commend to the attention of any criminologist who disagrees with us, an earnest and profound study of trade ethics regarding weights and measures, discounts, bargain sales, adulteration, sophistication, substitution, bankruptcy, and other phenomena of business; when he has mastered these matters, let him undertake to differentiate Robin Hood, for example, from an every day corner grocer.

THE RELIEF OF PRURITUS ANI.

Physicians who have had their patience exhausted by repeated failure to relieve the maddening symptom of pruritus ani may be glad to hear of the experience of Dr. J. Cropper, of Chepstow, England, who communicates to the *British Medical Journal* for May 2, 1914, the good news that he has found two trustworthy remedies for the condition. After having tried in vain to heal the tiny circumanal cracks which are apparently the cause of the itching, with conium ointment, the ointment of galls and opium of the British Pharmacopœia, boric acid and starch powder, carbolic acid, mercury bichloride, zinc sulphate, and three well known proprietary preparations, Doctor Cropper found that the British tincture of iodine did the work. This is not irritating, it appears, to the mucous membranes, and slight pain, if it occurs, is quickly over; it should be used about three times a week with a little care so as not to excoriate the skin. Even better, however, is the compound tincture of benzoin; whether it acts merely as a mild styptic and antiseptic or has a mechanical action, giving rest to the parts, its effect is described as little less than marvelous. Within two minutes the alcohol evaporates and all temptation to scratch is over. Doctor Cropper has found that samples of Friar's balsam vary in appearance from light to dark brown; the dark ointment is the best. Where the water is hard, the balsam should be used before bathing, as prolonged hot baths in hard water are particularly injurious in cases of pruritus ani. It is not necessary either to cauterize or excise small fissures, as the balsam will cause them to close up; as to large fissures, remarks Doctor Cropper, they are another matter.

A FATAL TOOTH EXTRACTION.

A death that could not have been foreseen and so guarded against, is mentioned in the *Dublin Journal of Medical Science for April,* 1914, It was that of a young fire insurance clerk of London, who was placed under nitrous oxide anesthesia for the extraction of some teeth. After one had been removed, the subject showed signs of distress and the operation was not continued; artificial respiration was tried, but without avail, and he succumbed in a few minutes. The pathologist of St. Mary's Hospital, who made the post mortem examination, stated that the administration of the gas had nothing to do with the death. There was tuberculous disease of the upper cervical vertebræ and base of the skull, and a portion of the fourth vertebra had been fractured; it was so diseased that the slightest jerk would have caused dislocation of the neck. A coroner's jury returned a verdict of death by misadventure.

ESTIMATION AND SIGNIFICANCE OF AMINOACIDS IN DIABETES.

P. J. Cammidge (*Lancet,* November 8, 1913) suggests that the quantitative estimation of the aminoacids in the urine can be made by determining the ammonia according to the Folin method, and also by the Malfatti process, on different samples of the same urine. As the former test gives ammonia nitrogen only and the latter both ammonia and aminoacid nitrogen, a subtraction of the results of the Folin from those of the Malfatti tests will give the figure for the aminoacids. The presence of aminoacids in the urine is known to be

associated with severe metabolic disturbances and is referable to an inability of the tissues of the body to destroy them, or to their excessive production through the destruction of the tissue proteins. Glycosuria is generally regarded as being a symptom of a disorder of metabolism. In the form of glycosuria known as diabetes, the power of metabolizing aminoacids is diminished and they appear in the urine, increasing in amount as the disturbance grows more severe. In order to get a complete picture of the severity of the diabetes, estimations should be made of the sugar, aminoacids, and acetone bodies, and their relations to diet should be determined. Such estimation should be made repeatedly during the treatment of any case, and the regulation of the diet should be based upon their results.

THE DIAGNOSIS OF CANCER BY THE ABDERHALDEN METHOD.

B. A. Wolter (*Roussky Vratch*, August 10, 1913) applied the Abderhalden test to thirty-two blood serums, seventeen from patients with cancer, six from perfectly healthy individuals, and nine from persons with different affections. The method is essentially the same as that employed for the detection of pregnancy, except that in case of cancer a small piece of cancer tissue is employed for dialysis. Two of the serums from cancer patients gave a positive reaction with the addition of cancer tissue. These are therefore excluded from the general results. In connection with these two cases, the author notes that in both there was involvement of abdominal organs accompanied by hemorrhagic ascites. The other fifteen serums from cancer patients gave a positive reaction, giving one hundred per cent. of correct results. The serums of six cancer patients were also tested with placental tissue, and positive results were obtained with five. Of the fifteen serums from noncancer patients, a positive result was obtained in only one case, that of a perfectly healthy woman. The author regards the method as extremely valuable, particularly in cases where pregnancy can be excluded.

News Items.

The Gouverneur Dispensary.—Plans have been filed for the erection of a four story building on the northeast corner of Gouverneur Slip and Front Street, New York, which will be known as the Gouverneur Dispensary. It is for the outdoor patients of Gouverneur Hospital.

Connecticut Valley Medical Association.—At the annual meeting of this society, held in Bellows Falls, Vt., the following officers were elected: President, Dr. A. I. Miller, of Brattleboro, Vt.; vice-president, Dr. J. E. Toye, of Charlestown, N. H.; secretary and treasurer, Dr. Ira H. Prouty, of Bellows Falls.

Flatbush Medical Society.—At the annual meeting of this society, held at Brighton Beach on Friday evening, May 8th, the following officers were elected: President, Dr. W. D. Ludlum; vice-president, Dr. Edward Thompson; secretary, Dr. Stanley Thomas; treasurer, Dr. George A. Merrill. Fifty were present at the dinner which took place at the close of the business meeting. Dr. David Lloyd acted as toastmaster.

American Pediatric Society.—The twenty-sixth annual meeting of this society will be held in Stockbridge, Mass., on Tuesday, Wednesday, and Thursday, May 26th, 27th, and 28th, under the presidency of Dr. Samuel McClintock Hamill, of Philadelphia, with headquarters at the Red Lion Inn. A particularly attractive programme has been prepared, consisting of thirty-seven papers by men eminent in the field of pediatrics. Complete programmes may be obtained from the secretary, Dr. Samuel S. Adams, 1801 Connecticut Avenue, Washington, D. C.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, May 18th, Philadelphia Clinical Association, Medical Society of the Woman's Hospital, and the Episcopal Hospital Clinical Society; Tuesday, May 19th, West Branch of the County Society, and the Philadelphia Laryngological Society; Wednesday, May 20th, Section in Otology and Laryngology of the College of Physicians; Thursday, May 21st, Northeast Branch of the County Society; Friday, May 22d, Northern Medical Association and the South Branch of the County Society.

New Site for Beth Israel Hospital.—This institution has purchased a large plot of land at the corner of Livingston Place and East Seventeenth Street, New York, facing Stuyvesant Square, as a site for a new hospital building, which is to be from twelve to fifteen stories in height. The building, in addition to the land, will represent an investment of about $1,000,000. There will be accommodations for five hundred patients. The present hospital at Cherry and Jefferson Streets will not be closed when the new hospital is completed, but will be maintained for the benefit of people living in that vicinity.

More Isolation Wards Needed.—The Sanitary Code requires every public hospital and dispensary in New York to provide and maintain a suitable room or rooms for the temporary isolation of persons suffering from infectious diseases. A survey recently completed by the Department of Health shows that notwithstanding the clear letter and the eminently reasonable character of this section of the code, a considerable number of institutions have failed to make the required provision. The department is bound to enforce this feature of the code and appeals to the managers of institutions, as well as to the medical staff of such institutions, to cooperate by making earnest efforts promptly to meet the requirements.

Women's Medical Association of New York.—The annual meeting of this association will be held at the Academy of Medicine on Wednesday evening, May 20th, at 8:15 o'clock, under the presidency of Dr. Annette E. Lamphear. There will be an executive session followed by the presentation of patients and the exhibition of specimens. The president's address will be on the Faucial Tonsil and the Mouth as Portals of Systemic Infection. Dr. Rosalie Slaughter Morton will read a paper on Medical and Surgical Work in South America. Dr. S. Radcliffe and Dr. Ethel Brown are vice-presidents of the society; Dr. Esther L. Jefferis is corresponding secretary, Dr. Margaret Sullivan, recording secretary, and Dr. M. J. Peebles, treasurer.

Personal.—Dr. Richard H. Harte has been appointed director of Public Health and Charities of Philadelphia, succeeding Dr. Joseph S. Neff, who resigned recently on account of ill health.

Dr. George Ben Johnston, of Richmond, Va., head of the surgical department of the Medical College of Virginia, has been appointed by Governor Stuart a member for life of the board of visitors of that institution.

Dr. T. W. Ayres, of Anniston, Ala., who is now in charge of a hospital and dispensary at Hwang-Hion, North China, has had conferred upon him the "Decoration of the Sixth Order of Chia Hoa," by the president of the Chinese republic, as an expression of appreciation of the services rendered the Chinese people by Doctor Ayres.

Dr. Achilles Rose, of New York, having been duly nominated by Doctor Menier, of Decazeville, was unanimously elected a titular member of the Paris society, *Les Médecins humanistes*, at their recent meeting on April 25th. Doctor Rose will be glad to present for membership the names of other American physicians who are interested in the objects of the society, as set forth in the JOURNAL for March 21st.

Association of the Medical Reserve Corps of the United States Army.—The annual dinner of the Illinois division of this organization was held in the Hotel Sherman, Chicago, recently. Dr. Junius C. Hoag, retiring president, presided at the dinner, and among the speakers were Colonel William Stephenson, U. S. A.; Colonel J. A. Harvey, medical corps, U. S. A.; Dr. George B. Young, Captain C. Billingslee, medical corps, U. S. A., and Major P. J. H. Farrell. The officers chosen for 1914 were: President, Dr. William L. Baum; vice-president, Dr. William H. Wilder; secretary and treasurer, Dr. John A. Hornsby; council, Dr. Louis E. Schmidt and Dr. Frank P. Lynch.

The Solly Tuberculosis Society, of Colorado Springs.—On January 24, 1914, the physicians of Colorado Springs, particularly those interested in the care and treatment of tuberculosis, met at luncheon and formed a society for the advancement of scientific treatment and the prevention of tuberculosis, named the Solly Tuberculosis Society in honor of the late Dr. S. Edwin Solly, of that city. At the regular monthly meetings of the society some particular phase in the treatment of tuberculosis is presented in the form of a symposium covering all the latest writings in various modern languages. The first regular meeting of the society was held February 17, 1914. Dr. Joseph J. Mahoney is secretary-treasurer of the society.

Louisiana State Medical Society.—The thirty-fifth annual meeting of this society was held in New Orleans on Tuesday, Wednesday, and Thursday, April 21st, 22d, and 23d, under the presidency of Dr. Fred J. Mayer, of Opelousas., Dr. George S. Bel was elected president; Dr. J. Ashton Blanchard, of Shreveport, first vice-president; Dr. D. J. McCann, of Atkins, La., second vice-president; Dr. E. M. Mahler, third vice-president; Dr. L. R. De Buys was reelected secretary-treasurer. Council by congressional districts: First, Dr. W. H. Knolle; second, Dr. Homer Dupuy; third, Dr. L. J. Menville; fourth, Dr. H. H. Smith; fifth, Dr. O. W. Cosby; sixth, Dr. J. W. Lee; seventh, Dr. C. A. Gardiner; eighth, Dr. E. Lee Henry. Lake Charles was selected for the next annual meeting.

Jurisdiction Over Food Stores in Tenement Houses.—Numerous instances occur in which insanitary conditions are found in stores selling food stuffs in tenement houses. Inquiry having been made as to whether such matters come under the supervision of the Department of Health or the Tenement House Department, we give here a statement regarding the jurisdiction of these departments. The Department of Health assumes jurisdiction over the store and its appurtenances and issues orders and notices requiring the insanitary conditions to be remedied or abated. Where the correction of an insanitary condition involves an alteration in the permanent construction of a building, the matter is referred to the Tenement House Department. The proprietor of a store where food stuffs are sold, is responsible for the sanitary condition of the store and its appurtenances, while the owner of the building is responsible for the structural changes and alterations which involve change.

The Campaign Against Cancer.—The Prevention and Control of Cancer was discussed at a public meeting held in St. Louis on Friday evening, May 1st, under the auspices of the American Society for the Control of Cancer. The Hon. Charles Nagel, formerly Secretary of Commerce, presided, and his introductory remarks dealt with the importance of educating the public in regard to this disease. The first address was given by Frederick L. Hoffman, LL. D., whose subject was The Menace of Cancer. He was followed by Dr. William F. Rodman, of Philadelphia, who discussed the prevention of cancer by the correction or removal of irritated parts, the control of cancer by early recognition and treatment, and the value of radium compared with surgery.

Dr. Leo Loeb, vice-president of the International Association for Cancer Research, explained the importance of cancer investigation and research, and Curtis E. Lakeman, executive secretary of the American Society for the Control of Cancer, described the purpose and plans of the organization.

This meeting was one of a series which the society is arranging in all parts of the country. Similar educational meetings have been held in Chicago, Pittsburgh, Portland, Maine, and in New York and others are to be arranged soon in Boston, New Orleans, and other cities.

Pennsylvania Society for the Prevention of Tuberculosis.—The officers elected at the annual meeting were Charles J. Rhoads, president; vice-presidents, Dr. Joseph S. Neff, Dr. William Duffield Robinson, Dr. William Charles White; secretary, Dr. Ward Brinton, 1427 Spruce Street; treasurer, Mr. F. Algernon Evans; among the directors for three years, Dr. James M. Anders and Dr. Elmer H. Funk; member of the advisory council, Dr. Thomas McCrae.

Consulting Staff of Hartford's New Isolation Hospital.—The board of health commissioners have named the consulting physicians and surgeons for the new isolation hospital at Hartford, Conn., which will be ready for occupancy about July 1st. Dr. E. K. Root will be chief consulting physician and the staff will be completed by Dr. I. W. Kingsbury and Dr. E. T. Turbert. The consulting surgeons are Dr. Charles E. Taft and Dr. George N. Bell, who will be assisted by Dr. C. Brewster Brainard and Dr. Paul Swett. Dr. W. E. McClellan will be consulting aurist and Dr. Charles H. Borden, opthalmologist, rhinologist, and laryngologist.

Le Fevre Memorial for New York University.—Chancellor Elmer E. Brown, of New York University, announced on May 12th, after a meeting of the executive committee of the council, the donation to the university of a trust fund of $10,000 by Mrs. Helen H. Le Fevre, widow of the former dean of the New York University and Bellevue Hospital Medical College. This trust fund is to be known as the Dr. Egbert Le Fevre Deanship Fund, and the terms provide that the income be applied toward the salary of the person who may from time to time accept the office of Dean of the Medical College of the University. Although it is not definitely so stated, the income of the fund may be added to the dean's salary.

Mrs. Le Fevre, in making the benefaction, said that she hoped that the gift would prove of material benefit to the institution in which her husband was so much interested and to which he gave so large a part of his time during the best years of his life, and that she wished in some way to assist in perpetuating his memory and in carrying on the good work.

Exempt Positions Vacant in the Health Department.—The attention of physicians is called to the fact that a vacancy in the position of hospital physician in the Bureau of Infectious Diseases will occur on June 1, 1914. This position will require at least three hours' time daily, the duties being the inspection and supervision of the tuberculosis clinics and branch offices in all boroughs of the city. Preference will be given to candidates who are especially qualified in the diagnosis of pulmonary tuberculosis. The compensation is $1,200 per annum and the appointee will be required to conform to all the rules and regulations of the Department of Health, governing its employees.

Two vacancies also exist in the position of attending physician to the tuberculosis clinics in the Borough of Manhattan. The positions require a minimum attendance of eight hours a week. The physicians attached to this service receive a compensation of $600 per annum and are required to conform to all the rules and regulations of the department.

Candidates for these positions will make application in writing to Dr. John S. Billings, Director, Bureau of Infectious Diseases, 149 Centre Street, New York, and will include in their applications a statement concerning their special qualifications for the position.

Columbia Hospital for Women, Washington, D. C.—At the annual meeting of the board of directors of Columbia Hospital for Women and Lying-in Asylum recently, Dr. Harvey W. Wiley was elected president, succeeding Col. Richard Randolph McMahon, who had been president since 1907 and who declined reelection. E. S. Parker was reelected vice-president; Enoch L. White, secretary; Major John D. McChesney, treasurer, and Dr. J. O. Skinner, major and surgeon, United States Army, retired, medical superintendent.

The following were elected members of the medical board: Dr. J. Wesley Bovée, Dr. William M. Spriggs, Dr. Sterling Ruffin, Dr. Isaac S. Stone, and Dr. W. Sinclair Bowen. Dr. G. Brown Miller and Dr. J. Thomas Kelley, Jr., were elected associates in gynecology and Dr. J. Lewis Riggles and Dr. Thomas E. Neill, associates in obstetrics. Dr. Huron W. Lawson was elected associate visiting physician.

Pith of Progressive Literature.

DERMATOLOGISCHE WOCHENSCHRIFT.

April 25, 1914.

Treatment of Gonorrhea in Women.—Johan Almkvist uses a jelly composed of tragacanth three mg., concentrated spirits 2.5 mg., distilled water 100 mg., to which is added one per cent. albargin, with which to distend the mucous membrane of the inflamed parts. In gonorrhea of the uterus, a special syringe is necessary, but this is not needed in gonorrhea of the urethra or rectum, although the manner in which the remedy is used is practically the same. To treat the uterus, a vaginal speculum is introduced, and the vaginal portion of the cervix cleansed thoroughly with hydrogen dioxide. Albargin jelly is then injected through the os uteri with special syringe until the mucous membrane is well distended. Such an injection he does not believe to be dangerous if proper attention is paid to complications that may be present; the external os is very carefully cleansed beforehand. He believes that he has obtained good results, even in old and obstinate cases.

WIENER KLINISCHE WOCHENSCHRIFT.

February 12, 1914.

Pseudoleucemic Symptoms Following Tick Bite.—Walter Haberfeld and Relli Axter-Haberfeld report a pseudoleucemic symptom complex after tick bite. This affected natives as well as foreigners, who had been bitten by the Brazilian tick. The affection, best classified as a leucemic lymphadenosis, characterized by swelling of the lymph glands and lymphocytosis, seemed to occur only during drought, and was observed in several individuals. The symptoms appeared two to three days after a bite; after two to three weeks it was noticed that lymphocytosis diminished from sixty to forty per cent., and then lasted for some time. In one year, it seemed, the blood differential count returned to normal. Individuals after being bitten, were not immune, each successive tick bite being followed by reappearance of the symptoms.

Mobilization of the Ankylosed Elbow Joint.—D. Pupovae reports a case of ankylosis of the elbow joint occurring after rheumatism; it was operated in several times, finally with a satisfactory result. The best method is the Kirschner operation. A posterior vertical incision suffices for inspection and resection of the anterior and posterior capsules of the joint. It is important that the lateral ligaments be spared, and the joints resected as little as possible. A wabbly joint is the result if these precautions are not observed. That portion of the fascia lata required to cover the lower end of the humerus is excised in myrtle leaf shape from the fascia lata of the thigh. It is then sutured by means of perforations in the bone, with silk sutures, and is made to cover the entire lower end of the humerus. No splints are required, only an ordinary bandage being used. Careful passive movements later are all that is necessary.

Specific Treatment of Gonorrhea and Its Complications.—E. Fischl reports his results with arthigon in the treatment of "closed" forms of gonorrhea, viz., epididymitis and arthritis. Cases of prostatitis are occasionally benefited. Urethritis is not influenced at all. A rise in temperature of 1.5° C. can be considered diagnostic in many cases after the intravenous injection of 0.1 c. c. in men, and of half this dose in women. It proves in these cases the presence of an active lesion.

Chemotherapy of Luetic Keratitis.—P. von Szily has treated over fifty cases of syphilitic keratitis with salvarsan, and in severe cases of bilateral affection of the cornea, has seen remarkable results. Salvarsan is given twice a week in doses of 0.6 gram., and neosalvarsan in doses of 0.9 gram, until complete cure of the lesion results. It requires often four to ten or even fifteen to twenty infusions to accomplish the desired object. He considers on the ground of these results that keratitis is an active inflammatory proliferative lesion of syphilis and not a degenerative metaluetic affection.

The Weak Child.—B. Sperk maintains that the constitutional weakness of children manifests itself in a variety of ways. The most pronounced form is that of the so called habitus asthenicus, which even in infancy shows itself in the large sized cranium and comparatively small oval face, in the prominence of the abdomen with tendency to hernia. Older children show a long narrow thorax, markedly shallow, narrow shoulder blades and gracile osseous system, scanty musculature, and panniculus adiposus. Noticeable pallor is very often present, with tendency to deformities and weakness of the digestive apparatus. Pallor is only seeming, and the suspicion of incipient tuberculosis finds no substantiation despite repeated x ray examinations. The asthenia is, however, very often combined with disturbance of the nervous system, manifesting itself as neurasthenia, nervous irritability, and vasomotor derangement. Children of weak constitution require medical care and supervision. It is important that they should be guarded from external stimuli to which their nervous systems are exposed.

Sedobrol in Epilepsy.—J. Donath insists that sedobrol fulfils the necessary dechlorination, and replacement of the organism with bromine salts. It is sold in bouillon cubes and can be prepared like soup. It consists of 1.1. gram of sodium bromide, and 0.1 gram of sodium chloride with plant extractives.

Apical Tuberculosis in Infancy.—E. Sluka has observed during six years of röntgenological examination of children, only three pronounced cases of apical tuberculosis. Often the entire upper lobe is involved; the entire course of the disease is acute, and generally ends fatally in a very short time. As a rule, these children suspected of having an apical involvement are found to suffer from general anemia, emaciation, and weakness with fever and tendency to bronchial catarrh. In these cases x ray findings show a hilus or a bronchial gland tuberculosis. In other cases, false diagnosis is often made owing to impaired resonance due to an accessory cervical rib.

Intravenous Application of Arthigon in Gonorrhea in Women.—O. Leszlenyi and J. Winternitz assert that a rise of 1.5° C. in women after the intravenous administration of arthigon indicates only in selected cases the presence of gonorrhea. Temperature, rising less than 1.5° C., is of no diagnostic value. Doses of arthigon less than one c. c. are ineffective. Arthigon is of no value in the treatment of affections of the urethra, vagina and cervix. Only in the closed forms of gonorrhea, as tubal disease or involvement of the parametrium, are these vaccines useful, and then only in the relief of subjective symptoms.

February 20, 1914.

Infantile Scurvy.—Wilhelm Wernstedt discusses scurvy in infants, its causation and therapy. He maintains that the disease has for its basic factor a hemorrhagic diathesis, as in the adult form. Its chief symptoms are marked pallor, excessive tenderness, especially of the lower extremities, swelling of the lower limbs, and the change of the gingival mucous membrane. Another symptom, which appears occasionally is prominence of one or both eyeballs with edema of the corresponding upper eyelid. Hemorrhages may be limited to the skin or other parts of the body. In all cases, artificial feeding, with proprietary foods, almost always preceded the disease. The therapy is limited to modification of the diet. Raw milk, with fruit juices, given in abundance with occasional variation in the form of fresh meat extract, suffice, with absolute rest, to effect a cure.

Formation of Specific Precipitins in Cultures in Vitro.—P. Przygode has been able to demonstrate, in cultures of the spleen which had been exposed to the action of horse serum, specific precipitins against spleen. If a rabbit is injected with horse serum, the spleen fixes this protein within forty-eight hours.

Pathogenicity of the Capsulated Bacilli.—D. Natonek reports a case of a metal worker, aged eighteen years, who died suddenly without any previous trouble. Autopsy disclosed a suppurative tonsillitis and a septicemia, the causal agent of which was a capsulated bacillus resembling that of the bacillus pneumoniæ. In this case, the sudden death was undeniably due to a lymphatic constitution.

Humoral Origin of Cancer and Its Influence on Therapy.—A. Theilhaber considers that in addition to local causes of cancer, some modification of the tissue fluids also plays a definite role. In the origin of cancer, a defective function of the blood forming organs, especially spleen, lymph glands, and thymus is to be considered. Among the most important local causes are deficiency of cells and anemia of the connective tissue. Atrophy of blood forming organs and diminished number of lymphocytes heighten the local predisposition. The treatment of cancer, in addition to local measures, should embrace stimulation of the hematopoietic organs, which is best attained by diathermia, injections of thymus, uterus or spleen extract. Occasionally it may be found necessary to expose the germinal organs to the x ray.

FOLIA UROLOGICA.

February, 1914.

Pyelography.—E. von Hofmann reports the case of a young girl, aged fifteen years, with hydronephrosis of the left kidney. Through a 4 F. ureter catheter a five per cent. solution of collargol was injected into the kidney pelvis by the gravity method. The author does not say how much collargol was used. The patient at the time had no pain in the affected kidney. Half an hour after examination, she had an attack of severe pain in her kidney region which was controlled by morphine. She died four days later of peritonitis. Autopsy showed that the hydronephrotic sac filled with collargol had ruptured. The collargol had found its way through the foramen of Winslow, into the whole peritoneal cavity. Examination of the kidney showed collargol within the canaliculi. Tubules had been ruptured and there was necrosis of the surrounding tissue. No attempt was made to operate. In still another case 120 c. c. of a four per cent. solution of collargol was injected into the kidney pelvis by means of a gravity irrigator held at a height of thirty cm. The patient complained of no pain in the kidney region until twenty minutes after the examination, when he was seized with severe pain referable to the left kidney. He had attacks of vomiting and pain in the kidney region. This patient also died of general peritonitis. The author believes that collargol is frequently squeezed into the canaliculi; by rupture or diffusion it gets into the surrounding tissue and causes necrosis. He considers pyelography a dangerous method.

Albuminuria in Acute and Chronic Suppuration.—V. Marcozzi says that albuminuria is of fairly constant occurrence in patients who have acute or chronic suppuration. If an abscess is deep and under considerable pressure, albuminuria is more likely to occur. If the abscess is drained, the albuminuria disappears. The albuminuria curve follows closely the fever curve, and so gives an important indication as to the absorption of toxins. In some cases the test fails.

March, 1914.

Unilateral Congenital Atrophy of the Kidney.—A. Bevacqua reports the case of a soldier, aged twenty-two years, who died of general tuberculosis. He never had any symptoms referable to the urinary tract, but the autopsy showed the right kidney much atrophied and the size of a chestnut. One part consisted of large and small cysts, the other part, the kidney proper, showed kidney tissue, series of tubules of different sizes with blind endings, lined with cuboid and cylindrical epithelial cells. They did not have the structure of the tubules of a normal kidney. In many sections there were no Malpighian corpuscles, but in some places there were changed corpuscles between tortuous tubules. There was no trace of kidney pelvis, calices or renal portion of the ureter. The ureter was somewhat smaller than the normal, and well developed in the lower two thirds; the upper third was a mere fibrous string. Suprarenal glands, testicles, seminal vesicles, and prostate were normal. The

opposite kidney was enormously atrophied and tuberculous in places. The case is very rare and, because of separation of the kidney and ureter, was probably mechanical in origin.

PARIS MEDICAL.

April 11, 1914.

Tuberculous Tracheobronchial Adenopathy in the Adult.—León Bernard asserts that physical signs elicited in tracheobronchial adenopathy in children, viz., paravertebral dullness and bronchial breathing, d'Espine's sign, are rather frequently met with in adults. X ray examinations show that the glandular involvement in adults is never more than a minor one. The presence of paravertebral bronchial breathing in adults does not warrant a diagnosis of tuberculous disease of the tracheobronchial lymphatics.

Section of Vessels in Lowering the Colon after Excision of the Rectum.—A. Schwartz and P. Cruet assert that in strictly rectal cancers, when the gut is severed at the junction of the sigmoid and rectum, if the sigmoid is sufficiently long, vascular ligation above Sudeck's point through an abdominal incision will insure proper blood supply and descent of the rectosigmoid junction. In cancers higher up, i. e., of the rectosigmoid junction, additional section of the sigmoid arteries has been resorted to. The authors believe with Cuneo, that it may be preferable in such cases simply to ligate the inferior mesenteric artery at its origin. This permits lowering *en masse* the descending colon, and seems to insure, better than ligation of the superior hemorrhoidal and sigmoid vessels, a blood supply to the lowered portion of gut, through the left superior colic artery.

Danger of Peptone Injections in Hemophilia.—P. Lereboullet and E. Vaucher describe a hemophilic boy aged seven years, in whom twelve injections of three to five c. c. of a one to twenty solution of Witte's peptone, were at first well borne; the last injection, under the skin of the abdomen, was followed by abdominal pain, rapid pulse, vomiting, severe hematuria, and distention of the abdomen with blood. Transfusion of blood was among the therapeutic measures used, but six hours later hemorrhage began from the transfusion wound, and it was found impossible to arrest this bleeding permanently, the patient succumbing to loss of blood nine days after, in spite of very active treatment. Widespread ecchymoses appeared in the hours preceding death. The injections of peptone had been made in series of three, given triweekly, with intervals of a week. Between the eleventh and the last fatal injection, ten days had elapsed.

PRESSE MÉDICALE.

April —, 1914.

Associated Tuberculosis and Cancer.—N. Lapeyre reports the case of a woman, aged forty-six years, upon whose hand 'in five months' time, a large cancerous ulceration grew at the site of a burn she had at the age of three. Amputation at the lower third of the forearm was done; enlarged epitrochlear and axillary lymph nodes simultaneously were removed. Histologically the growth showed characteristics of epithelioma with the addition of tubercles and giant cells. No tubercle bacilli were demonstrable. Epithelial proliferations seemed to have invaded the tuberculous formations as a secondary process, in the least diseased lymph nodes, tubercles were present without a trace of cancerous metastasis. It seems clear that at times tuberculosis may favor cancerous proliferation.

April 15, 1914.

An Adjustable Support for the Parturient Woman.—A. Schwaab describes a metallic adjustable body support to be placed on the patient's bed upon which she is to lie during parturition. Between lateral rods of the frame is placed an enameled pan to receive the fluid at rupture of the membranes. The back, upon which the upper portion of the patient's body rests, can be fixed at any desired angle. Handles at the sides, opposite the patient's buttocks, serve for traction with the arms during the pains, and supports for the limbs in the obstetrical position may also be attached. Where a prolonged labor is expected, the patient is placed in a semisitting posture, with the feet on flat foot rests. Later, when the child's head is against the perineum, an almost horizontal posture is assumed, and if necessary, leg supports are substituted for foot rests, allowing the easy performance of obstetrical procedures.

BRITISH MEDICAL JOURNAL.

April 25, 1914.

Artificial Pneumothorax.—H. Morriston Davies discusses the therapeutic value of nitrogen displacement of the lung in pulmonary tuberculosis and believes this to be considerable if the case is properly chosen and the treatment properly conducted. The early acute lesion responds better than the chronic fibrous one, and there is greater likelihood of finding a free pleural space in the former than in the latter. But all well defined or suspected cases of pulmonary tuberculosis, with very few exceptions, may be suitable for this form of treatment. To determine its suitability, it is necessary to prove that sanitarium or general measures have not checked the disease in a period of three months; this is best done by taking a radiograph of the lungs at the first visit, and comparing these findings with those shown by a subsequent plate. This course should not be followed in cases of pulmonary hemorrhage; here immediate resort to pneumothorax is the most efficient means of controlling the bleeding. Presence of a tuberculous lesion in the other lung is no necessary contraindication of the pneumothorax treatment. The proper method of making a pneumothorax is to administer a dose of morphine some time before the puncture, and to anesthetize the track of the needle thoroughly, preventing all danger of pleural reflex. The first injection should consist of 100 c. c. of oxygen gas followed by an equal amount of nitrogen, thus reducing the initial reaction to a minimum, so that the temperature usually falls after two or three days. Two days after, 350 c. c. of nitrogen are injected, and so long as there is no reaction, injections can be made at intervals of two days, giving 500 c. c. and then 750 c. c. and

repeating this amount until the pressure during inspiration stays below plus one mm. of mercury. The author believes that displacement of the lung should be maintained for eighteen months. This method has been tried in the treatment of bronchiectasis and putrid bronchitis with no good results, except the forcible emptying of the accumulated fluid from the lungs.

Pituitrin in Labor.—P. A. Hendley records his experience with pituitrin in sixty cases of labor and believes that if used with caution, especially where there is any obstruction to labor, it is valuable in several conditions. It acts very satisfactorily in shortening the long first stage, especially where there is dry labor. It seems very efficient in overcoming shock and collapse of chloroform anesthesia. It also seems to quiet the excitement of many nervous patients. It seems not only to prevent post partum retention of urine, but to promote diuresis. It is of value in controlling post partum hemorrhage. When the os admits one or two fingers, the first dose of pituitrin should be injected intramuscularly, giving 0.75 to one c. c. If delivery does not occur within fifty minutes, a second dose should be given, and this may be repeated if necessary. If post partum hemorrhage comes on, still another injection may be given to control it.

Erythema nodosum and Tuberculosis.—J. Odery Symes presents six cases of this form of erythema with no distinct evidence of its association with tuberculosis. The rash may be the manifestation of some general intoxication and merely accompany tuberculosis; it may be due to actual invasion of the skin by the tubercle bacillus, and it may be a prodromal symptom of an acute tuberculous septicemia. Erythema is not necessarily related to tuberculosis; these six cases were the only ones out of a series of twenty, in which a relation could be demonstrated.

LANCET.

April 25, 1914.

Intestinal Toxemia.—D. Chalmers Watson divides clinical conditions of intestinal toxemia into three classes, neurasthenic, rheumatoid arthritis, and dyspeptic. The pathological basis of toxemia is not merely the presence of stasis from kinks, adhesions, etc.; there must also be catarrh of the large intestine, and in severe cases, catarrh of the lower end of the small intestine, and dilatation of the bowel, particularly the colon and cecum. Of indications of intestinal toxemia, aside from changes in the reaction of the stools, bismuth meals, etc., the most valuable are given by the urine. The urine may be greatly diminished; cellular elements are present in marked excess; calcium oxalate is often abundant; bacteria in the urine or their multiplication in it at an unusual rate indicates a toxic condition; but the presence of indican is not of any great significance. Watson believes that diseases due to intestinal toxemia "are essentially medical conditions, capable of being cured by appropriate treatment if thoroughly carried out in the earlier stages; the question of surgical treatment should therefore seldom arise." In many advanced cases, prolonged medical treatment will be unavailing and appropriate surgical treatment is required. Before any operation the patient should be given a long course of medical treatment, with minute attention to detail; only when medical measures have failed should operation be undertaken.

Drainage Tube in Abdominal Surgery.—Joseph E. Adams believes that use of the drainage tube within the peritoneal cavity should be greatly restricted, owing to inherent defects and dangers. As the result of animal experiments he finds that rubber tubes are quickly covered with fibrin, apertures and lumen are promptly closed; they soon become plugs instead of drains. If there is considerable infection, such fibrin plugs either do not form or are promptly liquefied, but even so the tube does not effectively drain away anything more than a small amount of fluid. Dangers of the use of tubes are two: First, of aerial infection of the peritoneum by pathogenic organisms. It is not so infrequent as supposed, but Adams demonstrated its occurrence in animals; second, by the great danger of pressure of the tube leading to local reaction in the wall of the intestine with escape of infective bacteria, and perhaps with the production of fistula or ulcer, the occurrence of which he has demonstrated in noninfected animals. The one abdominal condition in which the drainage tube may be of genuine value is the case of a completely walled off abscess, for here the intestine is protected, the wall of fibrin prevents the spread of infection, and there is little or no tendency of the tube to close. Contrary to common views, Adams believes that the fascial layers and tissues of the abdominal wall outside of the peritoneum are much less resistant to infection than is the peritoneum, and he urges drainage of the superficial wound after closure of the peritoneum.

The Monkey as a Reservoir of Yellow Fever.—Andrew Balfour relates several experiences which lead him to suggest that the wild monkey may be a possible reservoir of yellow fever. In Trinidad, natives of certain regions believe that they can foretell an epidemic of yellow fever by the numbers of dead wild monkeys, a belief not confirmed by skilled observers. In other regions of the tropics, the disease has broken out without the possibility of any connection with human sources of infection; this has been observed in camps along districts inhabited by large numbers of wild monkeys. Balfour has made several efforts to catch some of the monkeys, both sick and well, and to examine their blood for Seidelin's Paraplasma flavigenum, but so far he has failed.

Vaccination against Hay Fever.—John Freeman has continued the work initiated by Noon, using pollen from Phleum pratense for inoculation, and reports the results of three years' work. During this period he has inoculated eighty-four patients, who have between them experienced 113 hay fever seasons after or under treatment. In thirty-four seasons, or about thirty per cent., the hay fever was completely cured, or was so far improved as to have been wholly insignificant. It was greatly diminished in thirty-nine seasons, or 34.5 per cent. It was diminished, but only slightly, in

twenty-seven seasons, or about twenty-four per cent. And in 11.5 per cent., or thirteen seasons, it was not improved, and two patients reported that they were worse. Some patients had other conditions, such as nasal deformities, etc., which aggravated hay fever; others failed to receive a sufficient number of injections, and still others had hay fever which was due to other forms of pollen. Hence the collective statistics are not as good as the results of suitable cases actually indicate. The author cites two most severe cases, both of which were completely cured. His best results were obtained when inoculations were begun early in the spring, and carried on to the production of full immunity by the beginning of the pollen season. From his own series, the author has evidence that, when complete immunity has been induced, it may last until the next season.

PRACTITIONER.

April, 1914.

Chronic Splenic Anemia and Banti's Disease.—H. D. Rolleston restricts the name Banti's disease to cases of hepatic cirrhosis following chronic splenic anemia, though the two diseases are often confounded. Chronic splenic anemia presents the following characteristics: Chronic splenomegaly which cannot be correlated with any recognized cause; absence of enlargement of the lymphatic glands; chlorotic anemia with a low color index; absence of leucocytosis, and usually the presence of leucopenia: liability to copious gastrointestinal hemorrhages from time to time; a prolonged course without any tendency to spontaneous cure, though splenectomy, if successful, is usually curative. Banti's disease is divided into three stages: 1. The preascitic, characterized by splenomegaly, without enlargement of the lymphatic glands, or much alteration in the general health. There may or may not be anemia, and at all events the splenomegaly precedes the anemia. This stage usually lasts three to five years, but may be longer, as the splenomegaly is generally considerable when the patient first comes under observation. 2. The intermediate or transitional stage shows definite though moderate anemia, leucopenia with relative increase of the mononuclear leucocytes, and a low color index. The skin is pale, at times slightly icteric, and the liver is somewhat enlarged. The urine is scanty and high colored. The general health is impaired, and gastrointestinal disturbance, especially diarrhea and sometimes piles, appear. This stage lasts from twelve to eighteen months. 3. In this stage, which may rightly be called Banti's disease, ascites appears, the liver is cirrhotic and gets smaller, the general health fails, the patient wastes, gastrointestinal and other hemorrhages occur; the picture of ordinary cirrhosis. This stage is often short, a few months to a year. Splenectomy gives the only chance of recovery, but it is attended with a much higher mortality than in splenic anemia.

Ectopia of the Bladder.—Arthur Edmunds suggests: 1. Plastic operations designed merely to reconstruct the bladder are unsatisfactory, since at the very best, they afford only partial relief; transplantation of the ureters is preferable. 2. Transplantation of the base of the bladder is better than separate transplantation of the ureters because it is easier to perform, and on theoretical grounds, is less likely to lead to an ascending infection. 3. This is done better by an intraperitoneal than by an extraperitoneal route, inasmuch as it is possible to perform the operation with less interference with the vascular supply of the bladder stump, and to use a mobile portion of the bowel. 4. As most of these patients die of pelvic cellulitis, the wound should be left freely open. A hernia may be developed, but this can be dealt with later by an aseptic operation, or may be controlled efficiently with an apparatus.

Nephroptosis; Movable Kidney; Floating Kidney; Dropped Kidney.—K. M. Pardhy says that nephroptosis may cause serious vascular and ureteral obstruction and interference with the normal function of the kidney, which when often repeated, causes varying degrees of dilatation of the calices or pelvis, flattening of pyramids, hydronephrosis, loss of kidney substance, and cystic degeneration. This may lead to autointoxication, causing among other things destruction, or impaired function of the cerebral cells and mental disorders. It is possible that the local effects, backache, colitis, constipation, flatulence, etc., contribute toward bringing on mental disorders, but it is evident that this is a very small factor. Nephropexy is the proper and rational procedure, and the only contraindications are those against any major operation. To be of full benefit it must be performed properly and efficiently. Fixation of the kidneys anyhow or anywhere will often result in more harm than good. In all patients suffering from mental disorders a thorough examination should be made to find whether the patient has a movable kidney. Even if the operation does not cure, the patient is not made worse; he is at all events physically more sound than before. The patient should be watched and taken care of for a long period. Palliative treatment by mechanical appliance should be resorted to only when a major operation is contraindicated.

Autotherapy in the Prevention and Cure of Purulent Infections.—Charles H. Duncan advances some ideas concerning autotherapy which certainly deserve attention, whether they are correct or not. He formulates the surgical rule: "If the exudate or a dilution of the exudate from any fresh wound is filtered with a Berkefeld filter, and the filtrate injected hypodermically at proper intervals, purulent infection will tend to be aborted," with its corollary "If the discharge from an extraalimentary or extrapulmonary fresh wound (the most common class of wounds with which we have to deal) is placed in the mouth at proper intervals, purulent infection will tend to be aborted." His technic is to cleanse the wound with normal salt solution only and dress it daily with sterile gauze. At each dressing catch all the oozing from the wound that is possible, using the stained gauze immediately over the wound, and the drain if there is one. Add only enough distilled water to bring it to an ounce of fluid. The gauze and the water are placed in a bottle and well shaken. It is then allowed to stand for from twelve to twenty-four hours, when it is filtered through a Berkefeld filter, and from one to

four c. c. of the filtrate injected hypodermically. This is to be done daily till the danger of infection is passed. Another way is to dress the wound twice daily, and at each dressing to cut out about four square inches of the stained gauze immediately over the wound, place it in a four ounce bottle of water, shake well, and give the decanted fluid to the patient to drink. This method he recommends highly. "In the last analysis it appears that a patient may abort infection by simply chewing his own bloody dressings twice daily." It is also suggested that the patient may be given a couple of drops of his pus on a lump of sugar, or that he may lick the wound. (See also this JOURNAL for December 14 and 21, 1912.)

CANADIAN MEDICAL ASSOCIATION JOURNAL.

April, 1914.

Suprapubic Prostatectomy.—Angus McLean maintains that, for the ordinary prostatectomy, suprapubic operation is the method of choice. It has a low mortality, controls the flow of urine, and has all the advantages of the perineal method, except, perhaps, that it requires a little longer time for closure of the urinary fistula. Its success depends first, upon preliminary treatment with copious ingestion of fluids, urinary antiseptics, and in some cases bladder drainage either by catheter or a preliminary cystotomy; second, upon rapid execution of the operation itself with ample provision for free drainage; third, upon nonmeddlesome aftertreatment, which simply means internal administration of a large amount of fluids, early sitting position, and the administration of alkalies, if indicated to control urinary acidity.

Present Position of Venesection.—Robert D. Rudolf concludes that in many cases, venesection is the most powerful method of treatment at our command and, if used with great discretion, seems to be free from any bad effects. It is often indicated in acute or chronic heart failure with marked cyanosis; acute toxemia, as acute uremia; acute infections, such as pneumonia and typhoid fever; chronic toxemias, especially those with high blood pressure. It may also be occasionally used in cases where we wish to increase the coagulability of the blood, as in deep hemorrhages and in aneurysm.

Gastroenterostomy; Experimental and Clinical.—F. A. C. Scrimger, E. W. Archibald, and A. H. Pirie summarize their observations as follows: 1, Anastomosis in the cardiac portion, with the pylorus open, will, as has been observed by others, allow most of the food to go by the pylorus. It will afford no protection to an ulcer in that situation. More than this, in dogs at least, most of the food leaving by the pylorus, reenters the stomach through the anastomosis, and the animals will not do well; they vomit and grow thin. 2, The addition of the exclusion of the pylorus will protect an ulcer, but will not greatly improve things otherwise. The stomach will still fail to empty; the animals will vomit and grow thin. 3, The placing of the stoma in the pyloric portion improves matters enormously. Here food will pass out by the stoma chiefly, though partly also by the pylorus, if open. If an ulcer is present it can be efficiently protected by excluding the pylorus. In both cases the animals do well. 4, That if an ulcer is found proximal to the pylorus anywhere in the pyloric portion, it can still be protected by laying a fascial ligature around the stomach between it and the anastomosis; further, that in animals at least, an anastomosis placed in relatively the same position as that necessarily used in the human being, if a short loop operation is done, is much more efficient when the fascial ligature is applied immediately distal to the stoma than when placed at the pylorus. The cardiac portion of the stomach is practically without peristaltic activity; its function is to maintain by tonic contractions a constant low pressure. The pyloric portion is strongly peristaltic. The low pressure in the cardiac portion is insufficient to force food out of the stoma so long as there is an easier path into the pyloric antrum. The high pressure in the pyloric end will force the food rapidly through any opening that is available.

BOSTON MEDICAL AND SURGICAL JOURNAL.

April 23, 1914.

Treatment of Mental Disorder in General Hospitals.—Philip Coombs Knapp, from his experience in the Boston City Hospital, declares that a general hospital, even without a special ward, a hydrotherapeutic plant, and other aid, can receive and treat doubtful and pronounced cases of mental disorder, with little restraint and without great risk. It is possible to treat some acute cases until recovery ensues; the reception and treatment of such a patient is a benefit to him and his friends. It gives an opportunity to study his case, to decide its proper disposal; above all, it may prevent the stigma which actual commitment inflicts. The mental patient has also a claim upon the benefits of a public hospital. To be sure such cases mean extra trouble, more nurses, more anxiety for the staff and administration, but these burdens are outweighed by the benefit to the community. In a general hospital there must be a special service, a visiting neurologist, familiar with mental diseases and their treatment, who must have control of such patients and their treatment without interference, who must alone be responsible for the treatment, stay in hospital, restraint, and commitment.

April 30, 1914.

Demonstration of Gallstones by the Röntgen Ray.—Arial W. George and Isaac Gerber state that demonstration of gallstones by the Röntgen ray already warrants its more general use in diagnosis. It is advisable to examine the gallbladder region for stones prior to every bismuth examination of the alimentary tract. Gallstones can be demonstrated in nearly every case of gallbladder disease of long standing where stones are really present. The chief sources of error are renal calculi, calcified mesenteric glands, and costochondral ossification, all of which can be differentiated by proper technic.

Intracranial Hemorrhage in the Newborn.—Robert M. Green says that intracranial hemorrhage may occur in the newborn either from the trauma of operative or normal labor, or in association with hemorrhagia neonatorum. It does not often present the typical clinical picture of increased intracranial pressure. Diagnosis depends

on early recognition of refusal to nurse, pallor and slight facial edema, which may be confirmed by more classic signs. Diagnosis may be positively established, and some therapeutic relief afforded, by lumbar puncture, when the hemorrhage is infratentorial, or by cranial puncture, when the hemorrhage is over the cerebral convexity. If these measures fail to give relief, operative decompression by craniotomy is indicated. The majority of intracranial hemorrhages in the newborn are subdural, but intraventricular hemorrhages may also occur. The source of bleeding may be from laceration of the tentorium, of the choroid plexus, of the longitudinal sinus, or of the pial vessels. In cases associated with hemorrhagic disease, preliminary transfusion may be indicated before craniotomy. The gravity of the prognosis demands an enlightened prophylaxis by avoiding all unnecessary occasions for fetal trauma.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

May 2, 1914.

Antityphoid Vaccination in the Army during 1913.—Major F. F. Russell states that favorable results previously obtained had shown that much was to be expected from antityphoid vaccination, but the records for 1913 far surpassed expectation. In the entire army, of over ninety thousand men, only three cases of typhoid, with no fatalities, occurred. The question of harmful effects may be definitely answered; no such effects have been produced. As to the effect on tuberculosis, it is found that the case rate for tuberculosis of all kinds shows a decrease of over 4.51 per 1,000 for the decennial period ending 1911 to 3.49 for the year 1912.

Drainage versus Immediate Suture of the Common Duct.—G. W. Crile finds that drainage of the common duct has three dangers; much bile is lost, cicatricial contraction occasionally occurs, bile may escape into and infect the peritoneal cavity beyond the field of operation. If drainage after common duct operations could be safely dispensed with, the mortality and morbidity would be reduced. He advises the immediate closure of the duct. This will probably result favorably, for the operation is rarely performed at the time of complete occlusion of the duct. Should there be complete occlusion, extraction of the stone may leave an occluded common duct; but even in that case, if the gallbladder can be utilized for drainage, the best procedure is to close the common duct at once, and let the gallbladder serve as a drain until the lumen of the duct is again opened.

Man, the Principal Etiological Factor in the Perpetuation of Malaria, with Special Reference to the Endemicity of the Disease in the Temperate Zone.—G. E. Henson refers to the possibilities of a campaign against sexual forms of the plasmodia in man. The success of such a campaign in this country, it seems to him, is assured, and depends entirely upon the education of the medical profession and the laity in certain fundamental principles concerning the detection of gamete carriers; the formation of gametes in the circulation of man; the transfer of these forms from one host to another, and evolution of the parasite in man and the mosquito; significance of an early diagnosis and the rational treatment of all malarial infections. The sexual forms originate in the asexual cycle; these forms do not make their appearance until after the asexual cycle has been active for several days; proper treatment, instituted early in the disease, in practically every instance not only cures the patient, but prevents the formation of gametes. In practically every instance quinine, if properly administered, will cure the disease.

Cultivation of Tissue Cells in Vitro and Its Practical Application.—H. F. Smyth states that to obtain uniformly successful growths, great care must be exercised in the technic. The plasma for the purpose may be autogenous (from the same animal as the tissue) for adult tissues, or homologous (from an animal of the same species), or even heterogenous (from different species), or mixed, for embryonal cultures. Personally, he has worked only with adult and embryonal chicken tissues in chicken plasma and serum agar. He has obtained growth from chicken kidney, liver, and heart (connective tissue cells only from the last), and from embryonal heart, liver, spleen, kidney, brain, cord, eye, skin, lung, and intestine. Fragments of embryonal intestine, planted in plasma, will continue peristaltic contractions for from twenty-four to forty-eight hours, and he has known heart tissue to pulsate as long as eleven days after planting; though he has never seen pulsation in new growth from heart cultures.

Extraperitoneal Cæsarean Section.—S. J. Druskin reports a successful case of this operation and describes the technic of the procedure. The advantages claimed for it are lessened bleeding; nonexposure of peritoneum; lessened danger of postoperative hernia, and, most important of all, the fact that the operation can be performed at a time when it would no longer be safe to do the classic operation.

MEDICAL RECORD.

May 2, 1914.

Complement Fixation Tests.—C. C. Sutter says that for complete understanding of the Wassermann and allied reactions we require to know what deviation of complement means. We must also have a general knowledge of antibodies and their relation to immunity, agglutination, precipitation, cytolysis, bacteriolysis, and other phenomena. The results depend, in great measure, on the absolutely perfect standardization of the reagents used; these are subject to variation in the hands of different serologists. The tests should be made only by experts in properly equipped laboratories. Under such conditions the results will be satisfactory, but the interpretation of the reaction must always remain with the clinician. The laboratory report deals only with the result—that there was complement fixation with the serum used in the test—and it should rest with the clinician to correlate this result with the clinical condition present.

Intensive Treatment of Syphilis of the Nervous System with Neosalvarsan, Intravenously, and with Mercury by Inunction.—J. W. Stephen-

son reports fifteen cases, two thirds of which were tabes or tabetoparesis, and reaches the following conclusions: In exudative tabes and other active syphilitic involvement of the combined cerebrospinal system, the serological condition is markedly influenced, if not rendered negative. In a small minority of the cases of tabes, the Wassermann reaction has remained positive (Wassermann fast tabes, Kaplan). In general paresis we can only say that the pleocytosis can be influenced. The number of cases is too small for definite conclusions, but in one case not included in the series of fifteen which was recognized in its incipiency, the results were such that, in the opinion of the author, even this serious affection, if detected early, is not impregnable. In exudative tabes and other active syphilitic involvement of the combined cerebrospinal system we can give a decidedly hopeful prognosis. In general paresis, we must bear in mind the remissions which occur so frequently; so that in two of the cases, in which slight improvement was reported, definite conclusions must be reserved until further time has elapsed. In the one early case referred to, the patient has been for the past thirteen months a normal man.

Treatment of Pulmonary Tuberculosis; Artificial Pneumothorax.—J. S. Ford finds that the results of this form of treatment in carefully selected cases have been brilliant. The field, however, at best is limited; it will never be much broader than at present. Diminution of expectoration, of tubercle bacilli in the sputum, quick fall of temperature to normal, or nearly so, and hemorrhage arrested are noted. Symptomatic cures are obtained in from twenty to thirty per cent. of the cases. It can now be safely said that after the compression has been discontinued, the lung so treated does resume its normal functions to a greater or less extent, depending upon the amount of disease present at the beginning of treatment. In a lung with cavity formation and a great deal of disease scattered through it, very little in the way of function can be expected when it is allowed to expand again.

Lacerated Cervix uteri and Reflex Irritation.—I. W. Ballard states that many women do not regain their usual strength after childbirth, sometimes passing entire days in a nervous, irritable state. Their symptoms show exacerbations at intervals; in addition they are tormented by a greatly increased frequency of urination, with distress after the micturition. They nearly always complain of digestive disturbances. Examination reveals a pathological condition of the cervix—either an extremely sensitive laceration or a hard, contracting scar. An irritated, tightly constricted sphincter and also hemorrhoids almost invariably are found. Intestinal stasis is treated by colonic irrigation with large quantities of warm normal salt solution; as much of the serous congestion of the cervix as possible is reduced by daily boroglycerin tampons. The uterus is then dilated and curetted; if it is large, soft, and freely bleeding, a narrow packing of sterile gauze is inserted to be removed after twenty-four or thirty-six hours. Finally, and most important, the cervix is amputated.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

April, 1914.

Abdominal Cæsarean Section in the Treatment of Eclampsia.—Peterson, reviewing cases between 1900 and 1912, notes the superiority of operative to spontaneous delivery in eclampsia. Decreased mortality was due to improvements in technic. The best results are obtained, Peterson believes, when the operation is performed within one to three hours after the first convulsion. Good results cannot be obtained if the emptying of the uterus is delayed until the mother is so profoundly intoxicated that recovery is impossible. It should be clearly understood that delay is dangerous and that the uterus must be emptied by the method best adapted to the case. Only thus will marked improvement be seen in the mortality of ante partum eclampsia. As long as we compromise, by treating the patient medicinally, after she has had a convulsion and is still undelivered, emptying the uterus only as a last resort, just so long will the mortality be high. Early interference also tends to decrease the infant mortality.

Serum Diagnosis of Pregnancy by the Dialyzation (Abderhalden) Method.—Jellinghaus and Gose describe in much detail the technic of the Abderhalden test, and the materials needed. They state that, although the theory of "defensive ferments" may be correct, the actual method has not proved infallible in their hands. Their results with serums from pregnant women have been correct, but such has not been the case in the nonpregnant. The assertion that the serum of eclamptic patients contains less ferment than that of normal pregnant women, and therefore gives a weaker Abderhalden reaction, is doubtful, for the difference is based entirely upon the intensity of the color. Inasmuch as the authors cannot obtain uniform results, they feel that they cannot recommend the method for diagnostic purposes.

Aqueous Solutions of Iodine in the Treatment of Gonorrhea in Women.—Hartz recommends the use of iodine on account of its ability to penetrate the subepithelial structures and deeper glands. It is also a stimulant, a counterirritant, and an alterative. The aqueous solution (Liquor iodi compositus) is used because of the pain caused by alcoholic tincture. From a study of twenty-five cases, the author concludes that this treatment offers a more rapid, more thorough, and a more permanent improvement than other methods. The gonococci disappear early from the secretions, intrapelvic extension is far less frequent, and there is little pain The entire course of treatment is comparatively short and causes but little trouble to either patient or physician. In acute and subacute cases, where vaginitis or vulvitis was present, the patient was directed to use one teaspoonful of the solution to two quarts of warm water as a douche twice daily. In the chronic and mildly inflammatory cases, the strength was gradually raised from one to two teaspoonfuls, or until the patient began to experience a burning or smarting sensation indicating the limit of increase.

Infantile Scurvy.—Miller calls attention to the fact that scurvy, though comparatively frequent, not uncommonly goes unrecognized, particularly incipient cases. The most common mistake is to diagnose the condition as rheumatism, a rare disease at the ages when scurvy occurs, from the sixth or eighth month to the twentieth. When rheumatic symptoms appear in an infant, scurvy should be thought of and evidences of its existence, particularly hemorrhages, should be sought. According to Miller, the first sign is pain or tenderness on handling; the infant cries when it is lifted or bathed, or when its stockings or diapers are changed. It should also be remembered that scurvy occurs more frequently among the well-to-do than among the poor, probably because the latter permit their babies, even at a very tender age, to eat all kinds of food. Proprietary foods, alone or mixed with fresh or boiled milk; dried or condensed milks; and boiled, sterilized, pasteurized and peptonized milk or milk formulæ have all, at times, appeared to be the cause of scurvy.

JOURNAL OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

April, 1914.

Indian Operation for Cataract.—Flavel B. Tiffany gives some notes on the cataract operation as practised in India by Major McPherson, Lieutenant Colonel Smith, and Lieutenant Colonel Maynard. In view of the diversity of opinion in this country concerning Smith's operation for the intracapsular removal of cataract the experience of Colonel Maynard may be worth quoting. He operated for some time in conjunction with Colonel Smith and now uses the operation in about thirty per cent. of his cases, which amount to twenty-five and thirty a day. He thinks the intracapsular method well adapted to hypermature cataracts, which are common among the Indians and often present themselves as soon as the incision is made. It is not adapted to European or American cases; if he was practising in Europe, he certainly would not use it in private practice, as he feels that it involves too great danger of loss of vitreous humor and subsequent deterioration of the globe.

LONG ISLAND MEDICAL JOURNAL.

April, 1914.

Autogenous Vaccine in Chronic Rheumatism.—Horace Greeley reports sixteen cases in all of which he isolated a very long chained streptococcus from the fauces. In several of these he also isolated the same organism from the blood or the urine, confirming the belief that the organism was the probable cause of the ailment. In his cases the first smears from the fauces, "showed great numbers of epithelial cells almost covered with whorls of large and most vigorous streptococci, and practically no polymorphonuclear leucocytes." After a week of treatment the organisms were found to be less numerous and of shorter chains, and a few leucocytes were present. These changes continued until "great numbers of such leucocytes were found and the remaining organisms had entirely lost their chain formation; appearing in singles or doubles, with a marked development of capsule, the latter rivaling the heaviest armor ever displayed by the pneumococcus." He began with doses of vaccine containing not less than 100 million organisms and increased in some cases up to 15,000 million at a dose. In only one case was there any severe local reaction, and in one there was a severe focal reaction lasting about five days. With one exception there was very slight constitutional reaction, never showing more than two degrees of rise in temperature. In all sixteen cases the treatment was successful in controlling the symptoms, and in only one was there any recurrence, this lasting for only two days and being very mild.

Exposé of Quacks in New York.—B. S. Barringer shows that over $100,000 a year is spent in advertisements by these men in only sixteen of the metropolitan papers. He cites the nature of the advertisements, almost all guaranteeing cure before payment, and shows that every patient interviewed who had been to any of these venereal quacks had been compelled to pay in advance, and usually were charged sums far greater than advertised. Many fraudulent methods are pointed out, including the treatment of patients for long periods for diseases from which they are not suffering. Barringer's paper is most enlightening and gives strong evidence upon which to base laws to prevent such practices.

NEW YORK STATE JOURNAL OF MEDICINE.

April, 1914.

Relation of Ileocecal Valve to "Lane's Kink."—William Francis Campbell relates a case in which he relieved an ordinary "Lane's kink" in the usual manner about three years ago and recently found that the same condition had recurred. On the strength of recent writings by röntgenologists about the frequency of incompetency of the ileocecal valve, the author thought that this might be the causative factor of the kink. As a result of observations on the cadaver he noted that in those in which the valve was incompetent, "there was atrophy of the valvular segments, retraction, and a sort of disinvagination of the ileal segment. In every instance of Lane's kink we found an incompetent valve; and this, after all, is the most rational explanation of its pathology, for the fluid waste backing up from the cecum into the ileum, will influence most markedly the portion of gut nearest the source, i. e., the terminal portion of the ileum. This distended portion of gut will sag down because of its own weight, and a long continued fecal stasis will be followed by a mild infection of the peritoneal covering, producing pseudomembranes or adhesions which ankylose and finally anchor the intestine in a permanent kink. If our hypothesis is correct, the present treatment of Lane's kink is futile. There must be a restoration of the function of the ileocecal valve or the kink will return as in the case already cited."

Blood Pressure in Pulmonary Tuberculosis.—Louis Shalet's experiences in over a thousand cases runs counter to the accepted notions with regard to the presence of reduced blood pressure in this disease. His findings are based upon observations in cases of the first two stages (Turban), in which the systolic pressure varied but little from the aver-

age normal of 125 mm. Hg. He mentions the unpublished observations of Edlin, who finds that the diastolic blood pressure in similar cases is not lowered, except when there are definite signs that the patient is not doing well. Shalet concludes by saying that in the blood pressure there is nothing characteristic of tuberculosis, either at the clinical onset, or during the course of the disease, that could be used in either diagnosis or prognosis.

Treatment of Fibroids by Deep Röntgenotherapy.—J. J. Levy holds this to be a harmless method with the exception of the fact that it also results in sterility, an occurrence of minor importance compared with the serious results of fibroids and the dangers of the usual operative treatment of these tumors. It has the advantage of being applicable in cases of serious heart or kidney lesions. The treatment usually requires one to three months, depending on the age of the woman and the activity of her ovaries; if carried out properly cure usually results, but in cases in which the fibroid is submucous and pedunculated, or is undergoing malignant degeneration it should give way to operation. The treatment must be carried out thoroughly, with carefully measured doses, and the soft rays must be filtered out, leaving only the hard and penetrating rays to act, thus avoiding burns. Seventy-five per cent. of fibroids can be treated successfully.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Annual Meeting, January 19, 1914.

The President, Dr. Reynold Webb Wilcox, in the Chair.

Osteitis deformans.—Dr. J. H. Branth stated that this affection was first described by Sir James Paget, in 1877 (*Medico-Chirurgical Transactions*, LX). Nothing was known as to its etiology. Syphilis, rheumatism, gout, scrofula, or tuberculosis could not be said to be a factor in its development. Cancer, late in life, had been observed in some cases. Paget described its pathology as follows: The bones enlarged and softened, and those bearing weight yielded and became unnaturally curved and misshapen. The normal osseous tissue was replaced by a finely porous substance. The long bones increased enormously in diameter, chiefly the femur, tibia, fibula, and clavicle. The bones forming the vault of the skull also enlarged; so that the patient was often forced to have a larger size of hat. There was cyphosis, a stiffness in the long tendons of the thigh muscles and the joint ligaments; the movements of the limbs were curtailed, and there were pain in the spine and insomnia. The present patient, a man of fifty years, in whom the disease was first noted some eight years ago, showed the typical signs and could walk only with the aid of crutches. In this case there was also nystagmus, though it had almost entirely disappeared under treatment, such as x rays to head and lumbar region and the application of the high frequency, high tension current. At first he had intended to administer hypophysis extract also, but since a favorable turn had seemed to have set in under electrical treatment alone, this would be continued for the present. This case was perhaps the more interesting from the fact that the symptomatology was so complete. The disease was not fatal; the patients dying from old age or some intercurrent affection.

An Inflating Gastroscope and Duodenoscope for Inspection of the Organs through the Gastric (Gastroenterostomy) Incision, by Dr. Robert Coleman Kemp and Dr. Albert Vander Veer, Jr. —See this Journal for February 7th, p. 258). The use of the instrument was demonstrated on the body of a dog recently killed.

Dr. E. E. Smith said that a prominent feature regarding this apparatus was its originality. There were two phases of the invention which had impressed him, the first was its adaptability to the purposes for which it was designed, and the second was its great practical value. As regards the sterilization of the instrument, eighty per cent. alcohol was a more efficient aseptic agent than the stronger ninety-five per cent., just as heat in the presence of moisture was more efficient than dry heat. In regard to the instrument's fulfilling its purpose, it was as yet too early to say definitely. It was perhaps a question what the importance was of an ulcer of such a character that it escaped detection by other means. From recent investigations it seemed probable that before a great while they would be able to make an early diagnosis of carcinoma from the blood, and then if by this means the site of the malignant process could be determined in the beginning, it would certainly be a great point gained. The outlook seemed very promising.

Dr. William F. Healy said that if, after opening the abdomen, they found exogastric signs, they did not need any further information, they knew that they had a lesion which could be treated surgically. He was sure, however, that every surgeon of experience had had cases in which the symptoms pointed to some lesion of the stomach, yet the gross inspection revealed none. What were they to do in such a case? They might examine all the organs and peritoneum carefully, and finding nothing abnormal, perhaps take out the appendix and close the abdominal incision; hoping that there was nothing wrong about the stomach. Here, therefore, they might make an incision into the stomach and explore its interior by means of this instrument; and thus be in a position to say positively whether gastric lesion was present. He thought that, in most cases, it would be necessary to make an anterior incision, as it seemed to him that it would be very difficult to make use of a posterior incision. It would appear, therefore, that the field of the inflating gastroscope was somewhat limited, though in certain cases it was likely to prove of great service. He would like to inquire why the diameter of the instrument could not be made smaller. He did not believe it could be used at all in posterior gastroenterostomy, and therefore that the anterior incision for it should be as small as possible. As to the technic in employing the gastroscope, it was much more difficult to use such an instrument in the open abdomen than the cystoscope in the bladder. There

were certain things which could not be sterilized. Thus, the wires would have to be covered with towels, and it would be necessary to have some one to look exclusively after such matters.

Dr. SINCLAIR TOUSEY had found the history of the symptomatology of the greatest service in arriving at a correct diagnosis. After all, the x ray did not show them the stomach or the intestine, but simply the size, shape, and position of a bismuth meal or a bismuth enema, a certain time after its administration. Some few departures from the normal appearance were pathognomonic and susceptible of but one interpretation, and from the radiogram in such a case the history and symptoms could be deduced with accuracy. But there were many instances in which two or more conditions would produce a similar x ray appearance, and in which the symptoms and history, and sometimes an exploratory operation, were necessary to a diagnosis. He was, however, far from belittling the x ray, and time after time he had seen it reveal a condition which had not been suspected, and lead to a cure in an otherwise hopeless case.

Dr. ROBERT T. MORRIS said that this instrument of precision offered to the surgeon another aid to diagnosis. One of the conditions in which it would prove distinctly useful was bloody sponge ulcer, which once in a while was mistaken for round ulcer, and which was not benefited by gastroenterostomy. Another condition was multiple ulcers, and it would be a great advantage to know just where these were. Still another was indurated ulcer. In this lesion they could not always tell where the active crater was situated, and the gastroscope would at once determine this. When an active ulcer was found they should not wait to ascertain whether we had to deal with cancer or not, but should take it out promptly. Again, linear ulcers near the pylorus had always been a source of much difficulty in diagnosis, and here also the instrument would prove of great service. An important field of its usefulness would be the exact location of foreign bodies, such as coins, in the stomach; thus rendering their extraction a simple matter. As to the anterior incision, some German surgeons now thought it best to make this first. Altogether, gastric work would no doubt be greatly facilitated by this instrument.

Dr. ANTHONY BASSLER thought that Doctor Kemp deserved great credit for his invention. He had a dim recollection, however, that a year or two ago he had read somewhere that some one, whose name he could not recall, had made an examination of the interior of the stomach by means of an endoscope. The question which had come up in his mind was whether, in cases where gastroenterostomy was done, it would be wise to risk the possible loosening of the clamp which might attend the introduction of the gastroscope. He would like to know whether, even with perfect technic, there would not be great danger of giving rise to sepsis. After the suturing, also, there would remain the danger of leakage upon the proximal peritoneal surface. Still further, might not the inflation itself of the stomach or duodenum be attended with some danger?

Dr. EDWARD WALLACE LEE said that Doctor Bassler had exaggerated the danger of septic conditions. The peritoneum was really very tolerant. He had known of perforation of the stomach with emptying out of the entire gastric contents, yet it had been possible to clean up the peritoneal cavity without untoward results.

Doctor KEMP said that it was a perfectly easy matter to have the instrument of smaller diameter. The reason why he had had it made of the present size was because with a smaller diameter so good a light could not be obtained. The larger instrument is preferable. The gastroscope was as yet in the experimental stage. As to sterilization, with due precautions, there was little risk of sepsis, but he saw no objection to Doctor Healy's suggestion that there should be a special person to look after the technic. In gastric operations at which he had been present, at which proper preliminary precautions had been taken, he had never seen a single drop of material escape from the stomach. This was a matter which depended entirely upon the preparation of the patient beforehand, and especially the use of thorough lavage with aspiration just before operation. He agreed that the locating of multiple ulcers was very important; the position of the patient was also of great importance. The proper position was the reverse of the Trendelenburg. He did not think there was any danger of postoperative dilatation. The inflation of the stomach was done rather rapidly, the entire period of examination consuming a very brief time, and cathartics were given on the table or immediately after the patient had been put to bed. As to Doctor Bassler's having seen a previous attempt to inspect the interior of the stomach through a gastric incision, this was no doubt the one to which reference had been made in the paper. Rovsing and Gallant had used a cystoscope for this purpose, and their procedures were the only things of the kind he had been able to find in all medical literature. With the instrument and with the proper technic the surgeon could secure valuable information in some cases. For removal of a foreign body, the method was ideal.

Tuberculosis Following Typhoid Fever.—Dr. CHARLES E. WOODRUFF, lieutenant colonel, medical corps U. S. Army (retired), said that it had long been known that tuberculosis sometimes followed typhoid, but the discussions had been largely confined to the cases in which the interval between the two was very short, and there had always been some doubt as to the diagnosis. About 1883, Landouzy, of Paris, described what he called typhobacillose, which he considered to be a tuberculous septicemia, in which the symptoms were typhoidal, though there was neither diarrhea nor rose spots. These patients sometimes recovered, though generally tuberculosis developed after an interval of days, weeks, or even years. It was probably safe to say that at least some of the cases of alleged typhoid, and many malarias in the previous histories of consumptives, were nothing more than fever from a temporary activation of the tuberculous lesions, though none had discussed the possibility that tuberculosis could modify the typhoid processes so profoundly as to prevent the characteristic lesions; the patient suffering from a real typhoidal septicemia which left no discoverable lesions.

The long interval which might elapse between the

beginning of tuberculous activity and the onset of symptoms generally prevented the discovery of the activating cause. The matter had assumed great importance since the recent discovery that every child was born free of tuberculosis, but soon acquired it, and that in every one the lesions became active sooner or later; these facts were now established. It was probable that all civilized people were tuberculous and undergoing constant autovaccination, causing an effective immunity. Phthisiographers the world over seemed to be coming to the opinion that no one was ever infected in adult life, and that if incipient tuberculosis developed in an individual, it was because something had interfered with the manufacture of his antibodies. Hence, the new viewpoint was that such infections as measles, whooping cough, and typhoid fever did not render them susceptible to tuberculous invasion, but reduced their resistance to the bacilli already intrenched in the system. The earlier in life they received infection, the more likely it was to cause the tuberculosis to spread; tubercles being found in the majority of children dying of any disease. Not only tuberculous glands, but tubercles elsewhere could be found post mortem in every child over six years old, if they looked for them. As they grew older, and acquired full immunity, the fewer became actively tuberculous after the other infections, and probably the only persons who became actively tuberculous after typhoid were those who had partially lost their immunity through some other causes. It seemed that typhoid would cause general tuberculosis in all those whose lesions were active, and that it would activate a certain proportion of quiescent cases, in which symptoms developed after a period varying with their original resistance. At present, active tuberculosis was far less common than formerly, and there must be fewer cases of tuberculosis following typhoid, either directly or remotely. The three diseases which seemed to be most frequently followed by tuberculosis of the lungs—measles, whooping cough, and typhoid—were all complicated with bronchitis.

When one was losing immunity to tuberculosis through overwork, lack of nutrition or fresh air, or from any other cause, there came a time when his latent lesions were just able to spread; the system being so delicately balanced that a straw would affect it one way or the other. Le Tulle, of Paris, had found that all serums and vaccines would cause incipient cases to grow rapidly worse, and had particularly noticed this in the case of diphtheria and tetanus antitoxins. Certain observers here and abroad had found that antityphoid vaccine brought out latent or chronic disease, particularly tuberculosis, and Combe, of Paris, stated that the vaccine acted like tuberculin. There was ample justification for suspecting that a fever which attacked a person in perfect health, which cleared up in a few weeks, and which later was followed by tuberculosis, was some nontuberculous infection such as typhoid or malaria; while a fever which attacked a person in poor health, and the course of which was typhoidal, though atypical, was probably a mere fever incidental to incipient tuberculosis. Consumptives seemed to have had more typhoid fever than the rest of the population. Other facts, taken together, showed a relation between typhoid and tuberculosis, though each by itself was of little value; for instance, the mortality curve of tuberculosis, which rose rapidly from childhood, reached its maximum before thirty and declined after thirty-four, while the maximum in the curve of typhoid was reached at fifteen and declined after twenty-five. The curve of tuberculosis seemed to follow that of typhoid after an interval of about nine years, and the average length of life after tuberculosis became active was said to be seven years. This might mean, therefore, that typhoid, mostly contracted before twenty-five or thirty years, had been partly responsible for raising the maximum mortality from tuberculosis nine years later. Again, it was significant of the relation of typhoid to tuberculosis that males predominated in the deaths from both causes. Furthermore, where typhoid fever was prevalent there should be more tuberculosis than in places free from typhoid, and variations in the typhoid death rate should be followed by similar variations in the tuberculosis deaths. In a place where tuberculosis was common typhoid should have more effect in increasing the death rate from tuberculosis than in places having little tuberculosis. As far as could be estimated from information available, it seemed that for every five lives saved from typhoid death, there would be a reduction of two or three in the tuberculosis deaths. In England there had been a reduction of 22 or 23 and in Germany about 35, or more, though in France, where infections were still high, there was little reduction in tuberculosis, and in Italy only about 4. In the United States it was about 35. These differences could be accounted for by the coincident reduction by modern sanitation and therapy of the numerous factors causing active tuberculosis. Karl Pearson, the eminent statistician, warned against drawing conclusions from parallel curves, as it not infrequently happened that there were two independent causes at work, one for each set of facts, and wholly unrelated; but in view of the evidence that typhoid was frequently followed by tuberculosis, there could not be any reasonable doubt that the reduction of typhoid was responsible for a good share of the modern reduction of tuberculosis. Where the other infections were high, as in France, tuberculosis was still common, but where public health measures were effective the drop in tuberculosis was amazing. As a rule, the higher the typhoid rate, the nearer did the two classes of deaths approximate. As time progressed, typhoid ceased to be a cause of tuberculosis activity.

In the United States Army the dependence of tuberculosis upon typhoid was seen after 1890, when, as in civil life, bacterial diagnosis became more common; but after typhoid vaccines were widely used, tuberculosis ceased to decline with the typhoid. The health authorities of both New York and Pennsylvania had reported that in recent years in their respective States both typhoid and tuberculosis had markedly declined, and at about the same rate. The Spanish war had added to the deaths in many cities in 1898-9, and the disasters of this war and the campaign against the Boers stirred up the world to inaugurate an antityphoid crusade which showed

immediate results. There was no exception to the rule that a decrease of typhoid was accompanied by a decrease of tuberculosis. Prendergast, of Brooklyn, had used typhoid vaccine in four cases of diabetes, because he had seen it stated that in diabetics sugar disappeared from the urine during typhoid fever. Two of his patients promptly became consumptive, and one of these died (probably from gangrene) nine days after a dose of 50,000,000 which was given eight days after tubercle bacilli had been found in the sputum. In practical therapy it would be wise to treat typhoid patients as though they were tuberculous; indeed, at all events, they did better if liberally fed and kept in cool or cold air.

Dr. Robert Coleman Kemp said that the contention that a large proportion of the human race had at some time been infected with tuberculosis he believed to be true. Evidence of such previous infection, in many instances apparently healed, had been found on autopsy in a large proportion of cases, although no apparent symptoms were elicited during life. It had been reported abroad that on autopsy from five to ten per cent. of all cases showed evidence of an old gastric ulcer, yet without symptoms having been described during life. Tuberculosis was many times more frequent than gastric ulcer; prolonged chronic ulcer of the stomach might have tuberculosis as a sequel; lowered resistance would be a factor in the causation of this. Diseases with pulmonary complications, such as measles, etc., were known to predispose to tuberculosis, and this might be true of typhoid fever; posttyphoid colitis, often ulcerative, might be a source of considerable difficulty, and might continue for some months. There seemed to be no reason why the tubercle bacillus might not enter by this route, as well as by the lungs; particularly in cases developing within a few months after typhoid. The similarity between the typhoid and tuberculosis curves was interesting and significant. He had been especially struck with the fact that, although the proportion of cases of typhoid rapidly diminished after antityphoid vaccination, there was rather an increase in those of tuberculosis. Serums and vaccines would at times activate some preexisting process. In certain asthmatic conditions, for example, the use of diphtheria antitoxin might even produce dangerous symptoms. Several years ago he had treated a young man affected with lymphatic enlargements, believed to be of pseudoleucemic nature, and these ultimately disappeared. Within the past few weeks he had contracted diphtheria, and had been given 15,000 units of antitoxin. The diphtheria rapidly cleared up, but, immediately following the antitoxin, there had been a recurrence of the enlarged glands. He believed antityphoid vaccines to be useful, but thought those to be vaccinated should always first be carefully examined. The vaccine might in some instances activate a latent tuberculosis. Although antityphoid vaccination was an excellent procedure, and should be employed more frequently, it seemed absurd that its advocates should state that deleterious effects were impossible; the longer they studied serums and vaccines, the more they learned to the contrary. Regarding high caloric feeding in typhoid and tuberculosis, he believed it to be overdone. A typhoid patient should be given from 2,000 to 3,000 calories, or a little more if no tympanites resulted and the food was digested; but no individual with diseased kidneys, with derangement of all the digestive organs (stomach, intestines, pancreas, and liver), and with a temperature of 103° F., or more, could digest twice the amount of food which he would in health.

Dr. Francis A. Prendergast said that Colonel Woodruff had laid too much stress on typhoid as a cause of tuberculosis, and in many places his figures failed to support his theory. The subjects of tuberculosis might be divided into three classes: Those who have recovered from tuberculosis; those who had died; and those who had in part recovered and were on the "ragged edge," only waiting for something to reduce their vitality and give their latent disease a chance to flare up. This last class was much the largest. Colonel Woodruff had not given enough credit to the worldwide campaign waged against typhoid and tuberculosis during the last few years. Better hygiene and sanitation each played its part in reducing the prevalence of both diseases. Members of the army and navy, while being sons of Mars, were much given also to the worship of Bacchus and Venus, and these practices were prone to reduce vitality and to give latent tuberculosis its chance to light up and grow. Miliary tuberculosis, according to Osler, was often diagnosticated as typhoid fever, and many cases were put down as tuberculosis following typhoid; whereas the tuberculosis was present from the beginning, and no typhoid had ever existed. Osler again and again warned against this pitfall in diagnosis. In 1911 he had brought to the attention of the profession a new skin reaction test for the detection of the presence of typhoid fever, and this test might help in a differential diagnosis, as it would not operate in any of the diseases giving a positive Widal reaction, e. g., severe anemia, cancer cachexia, sepsis, miliary tuberculosis. In the few days at his disposal he had gone over his hospital records for 1910; there had been sixty-five cases of typhoid, and of the patients, five died and sixty were discharged as recovered. None of the patients had shown evidence of tuberculosis during their illness, and none had returned to the hospital suffering from that disease. This was scarcely a fair test, however, as some might have become tuberculous and sought treatment elsewhere. As a cross check, he had looked over the histories of some cases of pulmonary tuberculosis, but failed to find any patients who had had a previous typhoid. In the two cases of diabetes cited in the paper in which he (Doctor Prendergast) had used small doses of typhoid vaccine, in an attempt to control the sugar output, the tuberculosis, he felt sure, did not develop from the use of the vaccine. (See this Journal for January 17, 1914, p. 143.) In almost any textbook the statement would be found that tuberculosis was very common in diabetic subjects, and these were only additional instances of lowered resistance lighting up a latent tuberculosis. Typhoid vaccine was contraindicated in all acute diseases, alcoholism, and most chronic diseases; he had never

seen any bad results from its employment in normal subjects. He was glad to approve Colonel Woodruff's treatment of typhoid: Rest in bed; fresh air; high feeding. The diet which he was accustomed to use yielded about 2,900 calories. In the light of their present knowledge, an exclusive milk diet should be condemned.

Major F. F. Russell, Medical Corps, U. S. Army, said that as to antityphoid vaccination in the army, this was now the beginning of the sixth year in which it had been employed. During the past three years, in which the number of troops varied between 75,000 and 90,000, it had been compulsory, and if the contention that such vaccination activated tuberculosis was true, there should have been some increase in the amount of tuberculosis. As a matter of fact, however, for the past five years there had been a steady decrease in the disease, and not an increase. It did not follow, therefore, that antityphoid vaccination would light up tuberculosis, and he was convinced that in healthy young men there was no danger whatever of its activating the disease. The rule was strictly observed in the army to vaccinate only the healthy. The records published in the annual reports of the surgeon general of the army were a complete refutation of the theory set forth by Doctor Woodruff so far as it concerned antityphoid vaccination.

Election of Officers.—The election of officers resulted as follows: President, Dr. Thomas S. Southworth; treasurer, Dr. Isaac Hartshorne; chairman for the Borough of Manhattan, Dr. Thomas Darlington; chairman for the Borough of Queens, Dr. L. Howard Moss; member of the council, Dr. Frank Herbert Daniels.

(*To be continued.*)

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Infections of the Hand. A Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand, and Forearm. By Allen B. Kanavel, M. D., Assistant Professor of Surgery, Northwestern University Medical School, Attending Surgeon, Wesley and Cook County Hospitals, Chicago. Second Edition, thoroughly Revised. Illustrated with 147 Engravings. Philadelphia, New York: Lea & Febiger, 1914. Pp. xv-463.

To the general surgeon, familiar through daily contact with infections of the hand and cognizant of their extreme importance as regards function of the extremity and even the life of the patient, the publication of a book devoted to this subject is not only justifiable, but becomes a boon to the practitioner both medical and surgical. This is particularly true if, as in this case, the subject matter is based both upon experimental and anatomical investigations as well as upon practical experience in a large number of cases. In order not to confuse the reader, especially the busy practitioner, the author has wisely separated the experiments and anatomy from the diagnosis and treatment, so that the work becomes most useful as a guide for the physician's procedure in any concrete case. The author has done his work well and the book deserves a place in every practitioner's library. It will be found an accurate guide in every form of acute infection and, if closely adhered to, will save many a hand which, with unscientific and routine treatment, might be sacrificed.

Practical Physiological Chemistry. By Sydney W. Cole, M. A., Trinity College, Cambridge, Demonstrator of Physiology, Cambridge University. Third Edition. Cambridge: W. Heffer & Sons, Ltd., 1913. Pp. xi—230. (Price, 7s. 6 d.)

At best, the study of physiological chemistry is arduous, to such a degree, in fact, that the student often becomes discouraged. One has but to examine the average textbook on the subject to ascertain the reason, the physiological chemist writes for trained men, too often overlooking the fact that his terminology is practically a foreign language to the novice. Doctor Cole obviates this feature and in plain and concise terms guides the student step by step through the many experiments that thorough training demands. It is one of the most satisfactory books of its kind.

Hæmocytes and Hæmic Infections. A Handbook for Students and Practitioners. By Frederick W. E. Burnham, M. D., C. M. With Two Hundred and Twenty-six Photomicrograms by the Author. First Edition. New York: E. B. Treat & Co., 1913. Pp. 462. (Price, $6.)

This work will be hailed with marked satisfaction by all students of hematology. While, as the author states, the greater part of the subject is yet to be told, what there is available is not always presented in a readable and acceptable form. The plates are not colored, as is usually the case, but consist of photomicrograms of hemocytes, blood parasites, etc., taken at so great a magnification—three thousand diameters—that their morphological details and the changes undergone in the various blood diseases can readily be discerned. This has entailed a very great reduction in the number of cells brought within the field of the vision, but this is compensated for, in some instances, by an increase in the size of the photomicrograms, some of which are as much as six inches in diameter. The parasites are thus strikingly shown, microfilaria, for instance, appearing as large as garter snakes. Each disease is well described, while the specific action of the main drugs used is given in many instances.

Dental Electro-Therapeutics. By Ernest Sturridge, L. D. S. Eng., D. D. S., Fellow of the Royal Society of Medicine, Member of the British Dental Association, etc. Illustrated with 154 engravings. Philadelphia and New York: Lea & Febiger, 1914. Pp. ix-318.

As the author states in the preface, this work is a concise and condensed treatise on electrotherapeutics and the book has much to recommend it. The illustrations are good and most of the operations which are described in its pages are so well illustrated that even a novice should be able to carry out the directions of the text. The chapter on pyorrhea is particularly good, and if other dentists could have anything like the success which the author asserts he has met with, the treatment would certainly be used in many more cases than it is today. Altogether, the work is well compiled and should make a handy and useful volume for practitioners of dentistry, especially those not well informed on electrotherapeutics. The chapter on electrophysics is excellently written and should be of interest to the average dentist who neglects almost entirely this valuable aid to his professional calling.

Thérapeutic clinique des maladies de l'estomac et des symptômes associés. Par. L. Pron. Paris: A. Maloine, 1913. Pp. 274. (Price, 6 fr.)

Gastric diseases constitute a complex problem for the majority of physicians, while the rational treatment of most individual disorders of the stomach is difficult if lasting results are to be obtained. In the present work the author studies these various disorders from the standpoint of the practitioner, explains why remedies often used empirically are valueless, and indicates those upon which reliance may be placed. The various symptoms are analyzed in their relations to the pathological condition present, such phenomena as pain, constipation, and insomnia receiving special attention; the treatment of each symptom is also described at length. As is often the case with books published on the continent of Europe, this work does not contain an index and is poorly constructed. In general, however, it will prove helpful to all physicians who desire to amplify their knowledge of gastric diseases, provided they can read French.

The Elements of Bandaging and the Treatment of Fractures and Dislocations. By WILLIAM RANKIN, M. A., M. B., Ch. B., Dispensary Surgeon, Western Infirmary, Glasgow, Extra Honorary Assistant Surgeon, R. H. S. C., Glasgow. With sixty-eight Original Illustrations. London: (Oxford University Press), Henry Frowde, and Hodder & Stoughton, 1913. Pp. x-116. (Price $1.50.) (American Branch, New York.)

This short volume represents notes based on demonstrations given to students who are preparing for a practical examination in the subjects treated. It contains chiefly practical details, many of which are not found in the usual textbooks, and will be found useful to the student for whom it is essentially written. Its didactic form will impress the fundamental principles and modes of procedure upon his mind. It is convenient in size, well printed, and has numerous illustrations both x ray and diagrammatic.

Studies from the Department of Pathology of the College of Physicians and Surgeons, Columbia University, N. Y. Volume XIII. 1913. Reprints.

This volume consists of forty-two reprints representing the work done in the Department of Pathology during the collegiate year 1912-13. The subjects covered are almost as numerous as the articles themselves. Much space is devoted to tumor investigations, both experimental and other. The paper by Levin on the Significance of the Precancerous Stage is particularly interesting, but there is much of importance by Lambert and Hanes, their contributions concerning the cultivation of tissues *in vitro* being especially good. The greater part of the remaining articles is by MacCallum, Pappenheimer, and Oppenheimer.

Coxa Vara, Its Pathology and Treatment. By R. C. ELMSLIE, M. S., F. R. C. S., Orthopaedic Surgeon to St. Bartholomew's Hospital, London. London: Henry Frowde (Oxford University Press), Hodder & Stoughton, 1913. Pp. 35. (Price, 60 cents.)

This short monograph of thirty-five pages is based on the author's experience with coxa vara in orthopedic surgery. It is without introduction and without bibliography and little reference is made to the work of the many orthopedic specialists who have added to our knowledge of this obscure subject. The views expressed by the author are sound and conform to those of the accepted authorities on the subject. The numerous x ray pictures are excellent and convincing. The diagrams and photographs, all of which are original, add much to the elucidation of the text.

Interclinical Notes.

The *Outlook* for May 9th has a severe criticism of Judge Bregy, of Philadelphia, and his decision in the antivivisection case, commenting particularly on his interpretation of the word "wantonly" wherein he disagrees with the Century Dictionary, Bouvier's Dictionary, and a previous decision of the Supreme Court of Pennsylvania. In this issue also is an instructive article by H. Addington Bruce, on Hysteria in Every Day Life, which will serve to make plain to the public the singular effects of combined shock and suggestion.

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Current Opinion for May covers the usual wide range of that magazine. There is a description of Ferrari's opera, *L'Amore medico,* which is Molière's *L'Amour médecin* done into Italian and music, and interesting to us from its title at least; an account of Roux's recent comments on diluted bacterial poisons; a review of Delage's Theories of Evolution; playful comment on the love affairs of spiders; a summary of Dr. Louis Robinson's views on dancing; reference to Robert Kennedy's operations to repair injured nerves; observations on the advisability of instruction of the young in sex matters; and, beside these more or less medical topics, a condensed history of the past month from almost every imaginable viewpoint.

* * *

The *Outlook* for May 2d comments on the freedom with which irresponsible individuals are permitted to roam about in our country; men of the type of those who assassinated three Presidents and attempted to kill two New York mayors. The people, says the *Outlook,* "owe to their public servants the best possible protection against such possible assaults. Certainly the best possible protection is not now provided. The assailant of Mayor Mitchel was an irresponsible man whose low level of intelligence rendered him a danger to the community. The assailants of other American public men have been likewise of low mentality. Yet we allow such irresponsible, or semiresponsible, human beings to go about unregistered, unrestrained, and unsupervised until they commit some such crime. A community owes it to itself as well as to its mental defectives, to establish some system of keeping track of them, and, when necessary, of segregating them where they cannot only be kept from doing harm, but can be given such training as they are capable of receiving."

* * *

Facts do not develop in the artistic way that fiction does in the hands of an accomplished writer, but the stories in the *Wide World Magazine* for May, 1914, do not lack interest on that account. The reader will certainly not want for excitement after following up the real adventures chronicled here by the actual participators in the South Seas, in the Great Lakes, in Inca Land, in the ice world of the Dauphiny, among the cliff dwellers of King Island. Trial by Ordeal, a tale of the Kalah jungle, shows that some of the Eastern people have detective ability that most of us have considered to be merely legendary.

* * *

Young's Magazine for May, 1914, modestly presents a bill of fare well up to the average of more pretentious periodicals. The Heart of a Woman, by Dale Drummond, is a strong argument for the better instruction of young women concerning their principal function before they enter upon the duties and responsibilities of married life. Mr. Reginald Wright Kauffman's The Master Hand, however, is inexcusably crude in its search for sensation; we hope that Doctor Armstead, upon his late arrival, had Mr. Bryce committed to an asylum.

* * *

The riches are pressed down and running over in the May *Red Book.* Our eminent colleague, Dr. Rupert Hughes, completes his now celebrated serial, What Will People Say? He has reverted to his student's vocabulary to the extent of referring to his heroine by the most unpleasant term of cadaver, a word not often applied, we think, to beautiful young society women, even when defunct. This has been a powerful and entertaining story. Very much in our line is The Sleep Maker, by Arthur B. Reeve, the fictional criminologist, whose wife, we have read lately, was so carried away by his stories that she has become an antinarcotic crusader. This issue is so crowded with good things that we have not space to refer to them all.

* * *

In an interesting article on Adrienne Lecouvreur in *Ainslee's* for May, 1914, Albert Payson Terhune says of François Marie Arouet taking the sobriquet of Voltaire, that the latter was "a name to which he had no right whatever." Apart from the supposition that Voltaire is an anagram of Arouet l. j. (*le jeune*), which may be said to have conferred a special right, the distinguished author had the same privilege as any one else to choose a name for himself. An individual may take any given name he fancies, while changing the surname does not involve any formidable legal procedure.

* * *

There is a doctor in The Fire Burned, by Eleanor Ferris in the May *Ainslee's,* but he is treated in the most undignified way; he is dragged into the story to make a fourth at bridge, and is not considered worthy of a name.

* * *

We were about to enter upon Fate Plays Some Massé Shots, by Frank Blighton, in the May month end number of the *Popular Magazine,* when we came across the ghastly word "overly." We have such a horror of this unnecessary barbarism and its fellow "illy," although the latter was used by Bulwer Lytton, that we are thinking of consulting a neurologist to learn if our prejudice has any pathological basis.

* * *

"Dear old Doctor Gibson," medical superintendent of the Argus Insurance Company, plays a small part in the exciting story, Missing, by Clarence L. Cullen, in the April *Young's Magazine.* He helps to introduce life insurance into Guatemala, no small feat according to the author of the story.

Meetings of Local Medical Societies.

MONDAY, *May 18th.*—New York Academy of Medicine (Section in Ophthalmology); Yorkville Medical Society; Medical Association of the Greater City of New York; Elmira Clinical Society.

TUESDAY, *May 19th.*—New York Academy of Medicine (Section in Medicine); Tompkins County Medical Society; Medical Society of the County of Monroe; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Tri-Professional Medical Society of New York; Medical Society of the County of Kings; Binghamton Academy of Medicine; Syracuse Academy of Medicine; Ogdensburgh Medical Association; Oswego Academy of Medicine; Medical Society of the County of Westchester.

WEDNESDAY, *May 20th.*—New York Academy of Medicine (Section in Genitourinary Diseases); Alumni Association of City Hospital, New York; Schenectady Academy of Medicine; Women's Medical Association of New York City (New York Academy of Medicine) (annual); Medicolegal Society, New York; Buffalo Medical Club; Northwestern Medical and Surgical Society of New York.

THURSDAY, *May 21st.*—New York Academy of Medicine (stated meeting); Auburn City Medical Society; Geneva Medical Society; German Medical Society, Brooklyn; Æsculapian Club of Buffalo; New York Celtic Medical Society.

FRIDAY, *May 22d.*—New York Society of German Physicians (annual); New York Clinical Society; Manhattan Medical Society; Brooklyn Society of Internal Medicine; Italian Medical Society of New York; Audubon Medical Society, New York.

SATURDAY, *May 23d.*—New York Medical and Surgical Society; West End Medical Society; Lenox Medical and Surgical Society (annual).

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending May 6, 1914:

Bailey, C. A., Acting Assistant Surgeon. Directed to proceed via Washington, D. C., to Quebec, Canada, for duty in the medical examination of immigrants. **Brooks,** S. D., Senior Surgeon. Leave of absence for six days from April 18, 1914, amended to read six days' leave of absence from April 20, 1914. **Carmichael,** D. A., Senior Surgeon. Granted fourteen days' leave of absence from May 27, 1914. **Carter,** H. R., Senior Surgeon. Directed to proceed to the Bureau, Washington, D. C., April 28, 1914, for conference relative to quarantine matters; also directed to proceed to Mobile, Ala., and such other places in the Southern States as may be necessary to assume charge and direct malarial investigations. **Gwyn,** M. K., Surgeon. Granted one month's leave of absence from April 14, 1914, on account of sickness. **Leake,** J. P., Passed Assistant Surgeon. Directed to proceed via Ecoles, W. Va., in company with the director of the Bureau of Mines to investigate mine explosives at that place. On completion of this duty directed to proceed to Bowling Green and other places in Kentucky for investigations of smallpox. **Mullan,** E. H., Passed Assistant Surgeon. Reassigned to duty at the Immigration Station, Ellis Island, N. Y., effective May 20, 1914, in accordance with paragraph 168, Service Regulations. **Olesen,** Robert, Passed Assistant Surgeon. Granted seven days' leave of absence from April 26, 1914, on account of sickness. **Schereschewsky,** J. W., Surgeon. Detailed to represent the Service at the annual meeting of the National Association for the Study and Prevention of Tuberculosis, to be held in Washington, D. C., May 7 to 9, 1914. **Schug,** F. J., Acting Assistant Surgeon. Directed to proceed to Seattle, Wash., for instruction by Surgeon B. J. Lloyd in the diagnosis of trachoma. **Sprague,** E. K., Surgeon. Detailed to attend the meeting of the American Association for Promoting Hygiene and Public Baths at Newark, N. J., May 13, 1914; granted six days' leave of absence on account of sickness. **Spratt,** R. D., Passed Assistant Surgeon. Directed to proceed to Rochester, Pa., for the reexamination of an alien to observe results of a Grattage operation.

Births, Marriages, and Deaths.

Born.

Hill.—In Philadelphia, on Saturday, April 5th, to Dr. and Mrs. Howard Kennedy Hill, a daughter. **Sabin.**—In Burlintgon, Vt., on Tuesday, April 28th, to Dr. and Mrs. George M. Sabin, a son.

Married.

Adams—Janvrin.—In New York, on Tuesday, May 5th, Dr. Phineas H. Adams and Miss Marguerite La Wall Janvrin. **Ainley—Turford.**—In Trenton, N. J., on Friday, April 24th, Dr. Frank C. Ainley, of Los Angeles, Cal., and Miss Anna Charlotte Turford. **Currie—Drayton.**—In Philadelphia, on Tuesday, April 14th, Dr. Thomas Ridley Currie and Miss Anna Drayton. **Hanna—Shelly.**—In Philadelphia, on Thursday, April 30th, Dr. J. Marvin Hanna and Miss Evelyn Shelly. **How—Bodine.**—In Philadelphia, on Tuesday, May 12th, Dr. Harold Waldron How and Miss Louise Warden Bodine. **Kemp—Minhinette.**—In Barnesville, Ga., on Monday, April 27th, Dr. A. P. Kemp and Miss Mary Minhinette. **Krebs—Rubert.**—In Easton, Pa., on Tuesday, April 28th, Dr. Stanley A. Krebs, of Palmerton, and Miss Mildred C. Rubert. **Lange—Zibetti.**—In West Hoboken, N. J., on Wednesday, April 29th, Dr. Louis Lange and Miss Frances Zibetti. **McVay—McDuff.**—In Pawtucket, Conn., on Monday, April 27th, Dr. Francis W. McVay and Miss Bertha Evelyn McDuff. **Pierce—Wright.**—In Durham, N. C., on Wednesday, April 29th, Dr. Sterling B. Pierce, of Weldon, and Miss Lila Wright. **Rainsford—Morgan.**—In New York, on Saturday, May 2d, Dr. Laurence F. Rainsford and Miss Helen Morgan. **Rockwood—May.**—In Brilliant, Ohio, on Wednesday, April 22d, Dr. Harry Langdon Rockwood and Miss Lou Catherine May.

Died.

Brobst.—In Allentown, Pa., on Monday, May 4th, Dr. John A. Brobst, aged sixty-two years. **Campbell.**—In Newtown, Pa., on Tusday, May 5th, Dr. George W. Campbell, aged fifty-five years. **Colston.**—In Dover, Del., on Sunday, April 19th, Dr. Henry S. Colston, aged eighty-nine years. **Gleason.**—In Providence, R. I., on Monday, April 27th, Dr. William Francis Gleason, aged fifty-four years. **Gray.**—In Landisville, Pa., on Saturday, May 2d, Dr. Samuel G. Gray, aged seventy-eight years. **Hamil.**—In Goshen, Ala., on Saturday, April 25th, Dr. I. W. Hamil, aged sixty years. **Hawley.**—In Penn Yan, N. Y., on Sunday, April 26th, Dr. William H. Hawley, aged eighty-nine years. **Lampen.**—In Philadelphia, on Thursday, April 30th, Dr. Louis Peale Lampen, aged fifty-four years. **Loring.**—In Munroe, Utah, on Saturday, April 25th, Dr. George B. Loring, aged fifty years. **MacConnell.**—In Roxbury, Mass., on Friday, May 1st, Dr. John MacConnell, aged seventy-five years. **McFayden.**—In Detroit, Mich., on Wednesday, April 22d, Dr. Daniel McFayden, aged forty-six years. **McKeon.**—In Long Island City, N. Y., on Sunday, May 3d, Dr. Patrick J. McKeon, aged fifty-three years. **Mason.**—In New York, on Thursday, May 7th, Dr. William G. Mason, aged forty-seven years. **Meddaugh.**—In Williamsport, Pa., on Tuesday, May 5th, Dr. Frederick W. Meddaugh, aged twenty-nine years. **Minnich.**—In Dallastown, Pa., on Friday, May 1st, Dr. W. H. Minnich, aged forty-nine years. **Parker.**—In Santa Monica, Cal., on Wednesday, March 18th, Dr. W. H. Parker, aged fifty-seven years. **Wainwright.**—In Englewood, N. J., on Wednesday, May 6th, Dr. Charles S. Wainwright, aged fifty-six years. **Weber.**—In New York on Thursday, May 7th, Dr. William Edmund Weber, aged forty-six years.

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Original Communications.

THE TREATMENT OF THE INSANE IN THE TROPICS.

Impressions of a Traveler.

BY FRANK WOODBURY, M. D.,

Philadelphia,

Secretary to the Committee on Lunacy of Pennsylvania

In order to prevent any misunderstanding, I think it proper to explain at the outset of my remarks, that the few observations upon which they are based, are not to be considered as being of an official character, as my visits were made incidentally, and in fact as an afterthought, during travels to the West Indies in 1907, 1910, 1911, and 1913. The observations and notes are very desultory indeed, and make no pretensions to scientific or literary value, nor are they presented as the result of careful study of the conditions. They are simply verbal snapshots of institutions for the care of the insane in the West Indies and the Canal Zone, and as such may have a passing interest to members of the Philadelphia Psychiatric Society.

Some of the hospitals were visited twice, but the duration of the visit was not long on either occasion. The amount of information gained was entirely due to the kindness of the physicians in answering questions. I have notes of such brief visits to the institutions on the Islands of Cuba, Jamaica, Bermuda, Porto Rico, Barbados, and Trinidad, and also at Ancon on the Isthmus of Panama.

I shall endeavor to summarize a few of the impressions made upon my mind by these visits:

1. *Character of Patients.*—The social status of a great majority of the patients compared with those seen in northern hospitals appeared to be low. The actual necessities of life, as everyone knows, are few in the continuous summer temperature of the tropics. In the matter of clothing, for instance, a straw hat, cotton shirt, and trousers, with no shoes, constituted the prevailing outfit. In Cuba, some men wore only a piece of muslin around them, and quite a number were naked and unashamed. The women's costume was frequently limited to a single garment of dark colored cotton material.

The inmates in numbers were overwhelmingly colored or black. Very few white patients were seen. There were more men than women in Cuba, Trinidad, and Bermuda, and the Panama Canal Zone, but the reverse was the case in Jamaica and Porto Rico. The proportion of private cases was very small, less than one per cent.

2. *Forms of Insanity.*—The prevailing forms of insanity are mild; violent cases are rare. In Cuba, dementia præcox and constitutional inferiority or evident imbecility, manic depressive, recurrent, degenerative, and involutional types were common. About one third of the male cases were in the excited wards, but many of these were imbeciles and epileptics. Of the latter there were 130 men and ninety women, 220 in a population of 2,200, or just ten per cent. Very few were of distinct alcoholic or toxic character. Most of the patients were of mild type, and no mechanical forms of restraint are required. In Jamaica, among 1,089 patients, there were no cases of pure melancholia. Cyclic cases, manic depressive and occasionally agitated melancholia are moderately frequent. Suicidal psychoses are almost unknown. In Jamaica also about ten per cent. of the patients have epilepsy. There are very few idiots, but some high grade imbeciles. The prevailing character of the insanity is chronic mania with delusions, dementia præcox, and senile and terminal dementias.

In Bermuda, a large proportion of the cases were of mild type, i. e., chronic forms of insanity or dementia. A considerable number were epileptics and others were feebleminded from birth. There is very little venereal disease in the colony, and such cases are rarely found in the hospital. In the hospital at Georgetown, Barbados, senile dementia is common, and there are many epileptics. Melancholia is rare among the blacks, who are more subject to excited, agitated, or delusional forms. Tuberculosis is common and the cases are isolated. Insane lepers are kept in a separate institution at a lazaretto.

3. *Causes.*—Heredity is considered the principal cause. Alcohol is not regarded as having much direct influence, as the natives are too poor to drink to excess. Misery, poverty, and poor sanitation are the chief causes. In Porto Rico the anemia caused by the hookworm is present in from forty to sixty per cent. of the cases. Very few cases, to my surprise, were attributed to sunstroke, or the effect of tropical heat. In some of the small islands intermarriage was considered a cause of importance in developing imbecility and dementia.

No well defined typically characteristic case of pellagra was seen, but pellagra was the doubtful diagnosis of about a dozen cases. In these, the mental symptoms were of a chronic character of mild dementia type, in middle aged or senile persons, and suggestive of a toxic origin. The skin lesions on forearms and legs were not well developed. No cases were found at Cuba, Bermuda, or Porto Rico.

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It was pronounced very rare at Ancon, Panama. On the other hand, the physicians of Jamaica considered pellagra as a rather frequent cause of insanity, but could show only four or five doubtful instances in a population of over 1,000. At Georgetown, Barbadoes, it was rare and usually fatal. As to the origin of pellagra, the belief was common that it was caused by a special toxic principle, which was usually introduced into the human system in damaged corn meal. Its introduction through bites of insects had not been observed.

Doctor Manning, the superintendent at Georgetown, was of the opinion that the word, psilosis, was a more appropriate name for the disease than pellagra. He would not assert that the disease usually named psilosis (or sprue) is identical with pellagra, though it might be related to it. But on the foundation of etymology, he considered psilosis a better term, as "ψιλός means bare," he writes, "and the mucous membranes of the patients' lips, coats of intestine, and even the epidermis, strip off and leave gangrenous patches behind. There is always a characteristic, most offensive, evil smelling discharge from the bowels, caused by the stripping off of the intestinal mucous and serous coats, and often the stomach is involved. There are certain discolored patches about the skin, principally over the elbows, knees, knuckles, and ankles. Most of our medical men call the disease pellagra, but these spots or patches are not true pigmentation any more than a freckle is a true pigmentation." Doctor Manning had prepared a report on the disease for the British Government, but the edition was exhausted, and unfortunately I have been unable to secure a copy of this original and valuable report. In Jamaica, it was the opinion of the medical staff that there is a seasonal increase in the cases of pellagra, in the spring months of each year. Debilitated persons are most liable to the disease, and in such ill fed, anemic subjects it is usually fatal. It is confined almost exclusively to the poor, who live under very unhygienic conditions. In acutely progressive cases, in broken down subjects, no treatment seems to avail in arresting the disease, which goes on to a fatal termination. In the slower forms, where the disease is more chronic, some arsenical preparations are useful, notably salvarsan. But the most important treatment is to build up the bodily powers by good nourishing food, baths, and fresh air, which is often successful in overcoming the disease.

As we approach the equator the dread of leprosy and the fear of contagion are observed progressively to diminish. There is no hysterical horror of this disease in the tropics, such as we have in the United States. In the island of Trinidad, the English Government has erected a large institution for the care of lepers, situated in the suburbs of Port of Spain. On my first visit to the island, in 1907, I found the gates invitingly open and I went in and talked with some of the patients, who showed the typical mutilitating effect of the disease. To my surprise I was told that they were not restrained, but were at liberty to go into town and visit the shops at their pleasure. On my recent visit this year, I found that the rules now required the gates to be closed and the patients are kept within the spacious enclosure. A few insane lepers were found in the hospital for the insane at St. Ann's. The lepers were allowed to associate freely with the other patients, but the clothing of lepers and of patients with skin diseases is washed separately from that of the remaining patients. No lepers were seen in the other hospitals visited.

On account of the open air life and other excellent sanitary conditions, there are very few cases of tuberculosis. Cases of pulmonary tuberculosis are generally isolated, but in some hospitals are treated in the general infirmary. Cases of tuberculosis are said to be becoming more common among the congested poor districts of San Juan, Porto Rico, but most of the insane come from the country and are free from this disease.

The almost entire absence of restraint in all of the institutions visited is noteworthy, and in Cuba mechanical restraint was said to be illegal. There were no padded cells found. The rooms for seclusion usually had open fronts of iron bars, an arrangement which permits patients to see what is going on around them and to talk to others, yet they are prevented from doing harm. The hospital at Bermuda had special exercise courts for the excited patients, where they could exercise without mingling with the others.

THERAPEUTICS.

In Porto Rico it is believed that beneficial impressions may be effected by light. The walls and electric bulbs are colored red for the depressed wards, and purple or blue in the excited wards. This recalls the interest aroused a generation ago by General Pleasanton, of Philadelphia, as to the effect of colored light, and is probably one of its remote results. The abundant fresh air and other hygienic influences are the most potent influences in producing recovery in the tropics as in the temperate zone. Fresh air is most beneficial when combined with outdoor employment. Special therapeutics for certain cases, such as thymol in uncinariasis, arsenic in pellagra, and quinine in malaria, are matters of routine. The attendants are very kind to the patients, and humor them as much as possible.

It is the practice generally in the West Indian hospitals to have many of the attendants live outside the hospital grounds and go home every night. Many other employees are nonresident. Very few white nurses are seen; the attendants are mostly mulatto; many are black. The head nurses are usually white and are better educated and trained than the others.

The cost of the food varies from fifty cents a day at Ancon, to fifteen cents at Port of Spain, Trinidad. The food was abundant and well cooked, but limited to comparatively few articles. In Cuba, a daily ration of hot rum and water, or grog, was given to the patients, and in Porto Rico, milk punch was given every afternoon to supplement the dietary. The equipment of the dormitories and dining rooms was usually of a primitive and inexpensive type. On the whole, the patients were far better cared for than at their own homes.

The rule is that all commitments are by court order. An excellent law is in operation in Porto Rico. It provides that every patient must first be

sent for a month to a general hospital for observation before being received into the hospital for the insane. The admission paper or physician's certificate in use contains very much more information than those used in Pennsylvania.

HOSPITALS FOR CANAL ZONE AND PANAMA.

Situated at Ancon, in the Canal Zone, near the Pacific extremity of the canal, is the Government Hospital for the Insane. In the immediate vicinity is the Ancon Hospital, which is medically under separate management, but under the same superintendent. Both institutions have been established by the United States Government primarily for the benefit of employees engaged in the construction of the canal. By an arrangement entered into a few years ago, the work of the insane hospital was extended considerably, so that it also now receives and takes care of the insane from the Republic of Panama. The sum of seventy-five cents a day is paid for the maintenance of insane patients sent to this hospital by the Panama authorities. At the present time the proportion of patients from Panama under this agreement represents about one half of the total number under treatment.

The population on the day I visited the United States Government Hospital for the Insane, at Ancon, March 7, 1910, was 254 (163 men, 191 women). These are, as a rule, colored and from the country districts rather than the towns. I was very courteously received by Colonel Phillips, the assistant chief sanitary officer of the Canal Zone; by Doctor Mason, superintendent of the general hospital, and by Doctor Lawlor, physician in chief, who went around the institution with me.

The locality chosen for these institutions is a commanding one upon high hills overlooking Panama and the bay, which is in the near foreground, less than a mile away. The city, in fact, is almost at the gates of the hospital. The elevation above the sea is over 600 feet, which makes a sensible change in temperature and favors the passage of the sea breeze, which, owing to the open doors and windows, constantly keeps the air in motion throughout the buildings. The institutions are upon separate hills, distant from each other about half a mile, by a winding road. The buildings are well painted frame cottages and pavilions, one story in height as a rule. The administration building is imposing and pleasing in its appearance, with the second floor and double porches extending on all sides. All the wards are provided with roomy porches, which are used for sitting rooms. They are carefully screened against flies and mosquitoes. Owing to the inequalities in the ground, and for sanitation, the wards are supported on square posts. These rest on cement bases as a protection against insects and decay. The grounds are spacious and well shaded by trees. Squads of patients were seen seated on the ground, cropping the grass with their fingers, this being resorted to in order to give them occupation. Others were observed breaking stone and making roads. Several Chinamen were in a group talking and smoking. The patients generally are of a quiet harmless class and were well cared for, and seemed on the whole to be comfortable and well satisfied with their lot in life.

Doctor Lawlor stated that pure melancholia was very rarely observed among his patients. He showed one patient restrained in the infirmary in bed by bandages tied around his waist, wrists, and ankles, who had made several suicidal attempts. Involutional melancholia is sometimes observed. Dementia præcox is frequent, and there are always present in the wards a large number of patients with this diagnosis. Paranoia and infective exhaustive psychoses are common. Pellagra is very rare and such patients usually die of exhaustion. Epilepsy is not frequent, being represented by only six patients. Forms of alcoholic psychoses are very common, owing to the custom of the natives of helping out an insufficient meal with one or two drinks of Jamaica rum. The habit of drinking spirits is very common on the Isthmus, the patients, on admission, usually declaring that they take ordinarily five or six drinks of rum a day, and more when they can get it. Shops of all descriptions in Panama try to eke out their receipts by keeping liquors, and some of the spirit sold is of very cheap and injurious character. Probably many of the natives are drunk all the time.

No special agency is believed to be exerted by the sun or tropical heat in causing insanity. For one thing, the nights are cool enough for blankets; and during the day, although the sun's rays are powerful, it is generally cool in the shade.

There are no American soldiers in the Canal Zone, the only military force being the marines. The number of insane among Americans is very small, and when these become insane they are generally not kept, but are sent home to their friends. In nearly all such cases, investigation has revealed the fact that they have histories of previous attacks of insanity.

There is remarkably little tuberculosis among the employees of the zone, and there is no case at present with well marked active lesions of tuberculosis in the hospital for the insane. If such a case should be encountered, it would be kept isolated until transferred to the tuberculosis wards of the Ancon Hospital.

No special provision in the way of private rooms for private patients has been made. The general cost for maintenance in the hospital is about fifty cents per capita, of which twenty-five cents is given for food.

The infirmaries are large square rooms with about thirty to forty beds, surrounded by broad verandas, and owing to the open windows and doors they are constantly shady and cool. They are furnished with iron bedsteads, painted white, with universal steel springs, light quilt to sleep on, and a blanket and sheet for covering. It is always cool enough at night to require the blankets. Everything is kept very clean and in military order. The constant bath has not been introduced. The rain bath is generally used. In the wards used for the disturbed class, there are forty-eight separate rooms, or cells, ten for men and thirty-eight for women. The cells occupy two sides of one of the cottage buildings, leaving an open space between, which is used for a day room. The rooms are large and have solid wooden doors, which are locked at night. Barred windows look out upon the veran-

das. There are no dark cells. Above the height of seven or eight feet, the room partitions are made of vertical bars of wood, which allow free circulation of air. The ceiling follows the inclination of the roof, which is about twenty feet high at ridge pole. The only furniture of the rooms is a shelf or bunk of wood. When patients get better, they are transferred to a ward containing beds. There is very little restraint, and no seclusion of patients, except at night. An American trained nurse is in charge, with an assistant of experience, and the other attendants are natives of the neighborhood. The administration of this institution is evidently in efficient hands.

The general impression of this excellent hospital was a very pleasing one. It has a commanding and picturesque position with a fine view of the surrounding country and the bay. The buildings are irregularly distributed through the parklike grounds and are well shaded by royal palms and other tropical trees and herbs with variegated foliage. The decidedly American appearance of the cottages, with their clean painted woodwork and cool, spacious porches and omnipresent wire netting, attracts and holds the eye of the observer, which especially notes the different levels upon which the structures are built and the prevailing order and cleanness, making apparently an ideal sanitarium. Involuntarily the visitor's mind recalls the words of Moore:

> And I said, "If there's peace to be found in the world,
> A heart that was humble might hope for it here."

HOSPITAL FOR THE INSANE IN CUBA.

The Government Hospital for the Insane of Cuba, the only hospital for the insane on the island, is situated in the open plain, sixteen kilos southwest from Havana, about one hour's ride on the united railways of Cuba's main line. The property embraces 735 acres of ground divided by the railroad into two almost equal portions. The station is known as Mazorra. It is a private station situated between the two main buildings; on one side of the railroad is the women's department, on the other the men's. The ground is flat, and parts of it are at times marshy on account of water settling after the rains. It is situated not far from Almendares river. The character of the soil is generally poor; only a small part of the estate can be cultivated (about 166⅔ acres). The remainder is untillable; and as it is rocky and has little or no soil, it is equally unfit for pasture. It is classified as a tertiary clay soil which is cavernous, and a small part is ferruginous. Its porous nature favors dryness and affords good drainage. The buildings were first occupied in 1857, and the institution has therefore been in existence about fifty-six years.

The general type of construction is on the cottage plan, separating the different groups from each other. The older buildings are of masonry and cement. They are mostly only one story in height (although some have had a second story added), and of square or rectangular form, with a central patio, or exercise ground. These enclosures contain foliage, plants, and flowers, in the quiet wards, where the better class of patients are kept, while in the noisy and disturbed wards, the ground is bare earth. Around the central garden of each building is a large enclosed porch, which is the sitting or day room for the patients. The buildings are decidedly tropical in appearance, with very thick walls and with large doors and windows, the latter closed by green Venetian shutters. They are also protected by strong iron bars, but it was noticed that there were no mosquito screens to doors or windows, the blinds being generally closed to keep out the sun. The red roof of Japanese tiling adds warmth to the local color scheme, the walls of the building being white or canary yellow. The buildings, almost hidden by royal palms, other foliage, and fruit trees, are irregularly distributed over the grounds. They have to the northern visitor a very strange, but attractive appearance, with little to distinguish them, however, from the ordinary haciendas of the neighborhood. Of this form of construction are the six separate wards or buildings devoted to men, and one or two of those for women. These all date from the period of Spanish rule. The newer buildings are of frame, of the usual United States Army construction, one story in height, with wide overhanging roof, covering a large interior porch. These were erected during the time of American intervention and control. They include a very attractive, single story infirmary, or hospital, of 120 beds for the men, and four or five well built frame single story wards for women, each containing sixty beds. The latter, however, are not in use at present. A fine nurses' dormitory, two stories in height, fitted with first class plumbing, has just been completed. Large porches on the first and second floors are also used as sitting and assembly rooms. A second story, placed on the women's principal building, is occupied as an infirmary, with 120 beds. The buildings are lighted by electricity provided by private installation; this feature also recalling the period of American control. In the men's infirmary, which is whitewashed on the inside and fitted with modern iron beds with wire springs (no mattresses), everything is exquisitely clean, as is the women's infirmary. There is a large operating room, with modern antiseptic appliances. One peculiar feature is a series of eight small rooms, or cages, with walls of mosquito proof wire netting, in which patients with a fever temperature are placed upon admission, until it can be definitely ascertained that they are not suffering with yellow fever. These were introduced during the time of American intervention, and illustrate the army precautions against the spread of yellow fever by mosquitoes. Thus far, no case of suspicious character has been received. Should it be discovered that a patient was thus infected, he would be kept isolated in one of these rooms until removed to the yellow fever hospital at Los Animas.

The agricultural colony is situated one kilometre away from the main building, extending along the line of railway. The buildings are of frame construction, and have a reception room, or office, behind which is a large dining room and a kitchen, placed in the centre of a circle of twelve to fifteen wooden huts, used for dormitories. The laboring men to the number of 150, at present, sleep in hammocks, which is the custom of the country among

the farming people. Most of the working patients here are engaged in roadmaking, and have already constructed a good road, which joins the State road from Venta to Havana, so that the institution may be pleasantly reached by automobile. There is also a primitive sort of stage which travels back and forth to the city several times a day. The products of the farm are chiefly sisal for making hemp, the crop of which is usually sold in Havana.

Besides sisal or hemp, which is sold, the patients raise, for their own use, tobacco, potatoes, sweet potatoes, plantains, and some other vegetables, but not in large quantity. About twenty-five per cent. of the women work. Some forty per cent. of the men could work, but are not all employed because there is not enough ground, and there are not enough attendants to oversee them. They do not manufacture anything to sell, but in their workroom they make and repair shoes, manufacture men's clothing, hats, and bedding. There is not sufficient work either in the field or workrooms for the patients.

The medical staff consists of a medical director or superintendent, Dr. L. A. Cerise, and two chief physicians, Dr. Antonio Esperon for the men's department, and Dr. Eligia M. Palma, head physician for the department for women. There are also six resident physicians, three in the men's department and three in the women's department. There are no women physicians in the institution. A nurses' training school is in operation under the charge of Miss Walker, an English nurse, who, before going to Havana, gained part of her experience in the Pennsylvania Hospital. She has two assistants, one English and the other Scotch, and they have given very marked evidence of efficiency in improving local conditions and organizing the training school The normal capacity is 800 men and 800 women. The overcrowding at present is nearly fifty per cent. The total population, at the time of my visit, was 2,200, consisting of 1,200 men and 1,000 women. There are about 130 epileptics among the men, ninety among the women. There are no lepers among the patients.

Very little tuberculosis exists on account of the outdoor life of the people, and the disease is quite exceptional among the patients (about eighteen cases, men ten, women eight). The tuberculous cases are isolated in separate cottages. There are twenty-four criminal insane patients, twenty of whom committed homicide. In the men's violent wards there are 335 patients, with six attendants during the day and three at night. About a dozen of the patients are entirely nude, crouching in the corners, or walking about among the others, attracting no attention apparently by their complete reversion to animal habits. At one side of the patio of the disturbed ward there are about ten strong rooms, the front walls of which consist of vertical iron bars. In these the most violent and homicidal patients are confined; one or several may occupy one room, and some have discarded clothing entirely; others have only a piece of cloth thrown around them. Very few of the patients have acquired the habit of wearing shoes. Many of them for identification have only a brass bracelet fastened upon the wrist, upon which their register number is stamped. Of the majority, the clothing is scanty and ragged to a marked degree, although the quieter patients wear the customary white, coarse cotton shirt and pantaloons and even hats and shoes or slippers.

The meals appear ample, and the patients well fed, although there is only an allowance of fifteen cents a day for maintenance. Owing to limited arable ground, they raise very little of the food consumed. Breakfast is at 6 o'clock, a cup of coffee and milk with bread; at 9.30 a bowl of soup with meat, rice, potatoes, and bread; at 2 o'clock, a milk punch is given; at 4 o'clock the dinner, consisting of meat, rice, beans, bread, and stewed fruit. Coffee is given with each meal, but no tea.

There is no real seclusion, except the large rooms with iron bar fronts, and mechanical restraint is prohibited by law. No camisoles are to be found in this hospital, nor are muffs and belts employed. In fact, the character of the disease in the patients is generally of the milder forms; very seldom are they disturbed so as to do injury to others, and such cases are confined in the cell rooms. The only restraint is that required to prevent the patients from escaping from the hospital. Few of the patients are addicted to alcohol, and this agent plays a small part in the causation of the insanity of the inhabitants of Cuba, according to the opinion of the director. They all use tobacco, however, and both men and women smoke almost constantly.

There are no precautions of any kind against fire. While the style of construction under Spanish rule is slow burning or of comparatively uninflammable character, this cannot be said of the buildings dating from American intervention. The introduction of electricity has also greatly increased the danger of conflagration.

All patients are committed by the court to a general hospital for a month, for observation after examination by physicians, who present certification to court. When this is endorsed by the hospital physician, the patient is then eligible for admission to the insane hospital. About fifteen per cent. of recent cases and first attacks, are discharged cured, and about twenty per cent. as improved within the year. The annual percentage of all cases discharged as restored would not be more than two or three, owing to the larger number of imbeciles and chronic incurable insane in the permanent population. The director has the power of discharge when the patient, in his opinion, has sufficiently improved to go out. The system of parole is not used.

The project is under consideration for the purchase of ground in a more fertile region, and building a modern hospital with facilities for sufficient employment of the patients, but there is no early prospect of obtaining the necessary funds. The patients are treated with great kindness and consideration by the physicians and nurses, and good humor prevails. The standard of care is decidedly better than it was before American intervention, in 1906, which began a new era for this useful institution.

THE INSANE ASYLUM AT PORTO RICO.

The Government Insane Asylum of the island of Porto Rico is situated at San Juan, within the confines of the city, and is surrounded by the barracks

and parade grounds of Morro Castle. It has no grounds of its own suitable for cultivation, or for exercising the patients. The spacious building, two stories in height, and painted a light amber color, bears an inscription over the portal in Spanish, stating that it was begun in 1841, completed and occupied in 1847, and the second floor added in 1897. The parade and drill ground of the infantry barracks are situated immediately in front of the hospital, which has its back to the harbor, close to which it stands. Dr. Gulielma Curbelo, the superintendent, and Dr. Eliseo Font, the attending physician, very kindly escorted me on my visit to this institution on March 2, 1910.

The building has a rather imposing central entrance, attained by a broad flight of stone steps, with Doric columns and large door, suggesting the entrance to a Greek temple. A wide corridor with high ceilings divides the first floor and separates the departments for men and women. On one hand is the superintendent's office and waiting room, on the other the office of the bookkeepers and store room for supplies. As in other tropical buildings, the heat of the day was pleasantly tempered by the thick walls and the green Venetian shutters at the windows, while the open doors and windows allowed entrance and free play to the cool air of the bay. The sounds of the bugle and bursts of military music from the drill grounds were a pleasing feature of the visit while conversing with the very polite and obliging physicians preparatory to entering the wards. This institution is under the immediate control of the Director of Health Charities and Correction, by whose orders patients are admitted upon certification by one or, if practicable, by two physicians, that the patient is suffering with insanity. No patient can be discharged except by a specific order from the director.

The director of charities appoints the superintendent, assistant superintendent, and physicians, subject to the approval of the executive council. He also appoints the clerks, resident physicians, and nurses. Domestics are appointed by the superintendent, subject to the approval of the director of health, etc. All employees may be dismissed by the director of charities "when in his judgment it seems for the best interests of the institution." The superintendent, Doctor Curbelo, is the resident physician. Doctor Font is the consulting and attending physician; he lives in San Juan and visits the hospital twice daily. An assistant resident physician will be appointed to enter upon his duties on the first of next July.

The comfortable capacity of the hospital is represented by its present population, the wards being full but not overcrowded. The patients number 331 of whom 145 are men and 186 women; fourteen men and eighteen women are private patients; the remainder are indigent. Private patients pay fifteen dollars a month. The appropriation for the maintenance of indigent patients is about $20,000 a year. Next year it will be $21,000. There are two trained nurses and twenty attendants upon the insane. The physicians, nurses, and attendants each wear distinct uniforms, which assists in maintaining discipline in the hospital.

It is now under consideration to remove the hospital to the country, where the patients may find employment upon a farm of fifty or sixty acres. When this is done an institution of more modern construction will be planned and erected. There is at present no training school for nurses. In addition to the women officers, there are a matron and an assistant matron. The two chief nurses were trained in the general wards of the Municipal Hospital, but had had no previous experience in caring for the insane. There are two men attendants at night and four women, two in the general wards, and two in the infirmary. Fourteen men attendants are on duty during the day and twenty women, making thirty-four in all or about one nurse to ten patients.

The dormitories and service rooms are arranged on the four sides of a central square garden, or patio, from which they are separated by a wide corridor and a spacious veranda which is protected by blinds from the tropical sunshine. The private wards seem especially large and well ventilated on account of the comparatively small number of pay patients. Attention has been paid to the therapeutic effects of light, the wards for the violent patients being painted in shades of blue, while those for depressed patients are painted in light yellow or amber. The wards for the violent have electric lights colored violet so as to be less exciting to the patients. The hydropathic treatment is highly thought of by the superintendent, and an application has been made for the installation of the continuous tepid bath. The camisole is allowed to be used for two or three hours for a time, but the nurses must not apply it to a patient without the permission of the superintendent.

There are restraint rooms for seclusion adjoining the laundry in the basement; these are simply large box stalls with vertical wooden slats for the front wall. The food is handed in through a square opening. Three noisy women were in these rooms. In another one the front wall was solid, except the opening for the food, making a dark cell. Judging from the noises issuing from this box, there was an excited and noisy woman kept there. I was informed that she was very violent at times, and was then locked up in a cell, but when she was less violent the attendants took her out and walked her in the open air. This occurred every few days. No men were confined in cells at the time of my visit. It was stated that the women furnished nearly all the violent cases. In this ward there are eight attendants for 120 patients.

Owing to the open air life in the country tuberculosis is almost unknown in Porto Rico. In the crowded tenements of the cities, especially among cigar makers and other sedentary workers, consumption is becoming frequent. It is very rare in the patients of the hospital, who are principally from the country districts, and no case is thought to exist at present in this institution.

Alcohol is not an important factor in the causation of insanity in the experience of this hospital. Probably not more than ten per cent. have a distinctively alcoholic history. It may, however, be a remote cause of imbecility and of epilepsy. There are about nine cases of epilepsy in the hospital at present. Doctor Font has found that a French prescription containing valerianate of ammonium, oil of amber, potassium bromide, and tincture of opium is a valuable agent in controlling the attacks.

The proportions are varied according to the case. Porto Rican anemia is the principal factor in producing the insanity of the patients on the island. From forty to sixty per cent. are of this character, and are promptly cured by the thymol treatment and tonics.

Although there are wooden stairways, there appears to be no provision against fire, except the adoption of the rule that male patients cannot smoke in the house, except in the smoking room. The women do not smoke at all. There are no fire extinguishers nor fire buckets and no fire escapes. No religious services are regularly given in this hospital, although when patients desire to have a priest or minister, he is sent for. The chapel formerly used for the Sunday services when under Spanish control is now used as a dining room for private patients.

JAMAICA LUNATIC ASYLUM.

The Government Lunatic Asylum, the only hospital for the insane on the island of Jamaica, is at Kingston, about a mile from the centre of the city, whence it may be conveniently reached by two trolley street car lines in twenty minutes.

The grounds are spacious, nearly a hundred acres in extent, and are enclosed with a hedge of cactus plants. This land, however, is poor and unproductive for the most part. The buildings are a considerable distance from the road, being near the border of the bay. In front, the grounds form a park on which is a pavilion and cricket ground. From the water the trade winds constantly play through the institution, cooling the air, tempering the rays of the tropical sun, and improving the hygienic condition generally. This hospital has been in operation for more than sixty years, and until within the last few years (when the fine institution at Trinidad was erected) it was regarded as the best of its kind in the West Indies. It suffered very much from the earthquake of January 14, 1907, all of the women's department being destroyed, and several of the buildings of the men's department. Fortunately, owing to the excellent management of the superintendent, there were no casualties among the patients, and none escaped, although it was found necessary to send a large number of harmless insane temporarily to other institutions, or to their friends, to remain until the institution could once more be placed in a condition to receive them. On this account the statistics in the published report actually show a diminution of the number of inmates for the year 1907. On the other hand, the superintendent is of the opinion that the number of insane in the general community was decidedly increased by the earthquake. The proportion of the insane in the preceding ten years shows a small but steady increase from year to year. Doubtless there was, in addition to this natural increase, a number of instances of mental disorder as a result of the extreme peril, moral shock, and temporary disturbance of living conditions, especially among the poorer classes, many of whom, it is said, appeared completely to lose their wits at the time of the disaster. The records of the hospital, however, only contain ten admissions accredited to the earthquake as the exciting cause of insanity (four men and six women).

With the exception of the administration and office structures, the buildings have now been rebuilt in stone and concrete, and the institution has physically perfectly recovered its former condition of usefulness, and now is fully equipped, including the sea baths, which afford a valuable adjunct to the treatment. At the time of my visit to this hospital, March 5, 1910, the medical officers consisted of a medical superintendent and two physicians. Through the kindness of Superintendent Shackleton and Doctor Neish, the former of whom courteously went through the institution with me, the following data were obtained:

The population of the hospital at present consists of 529 men and 560 women (total 1,089). Nearly all the patients are black or mulatto, only four being white. About a dozen are classed as private patients, paying fifteen shillings or more a week. The weekly per capita cost for maintenance in the last published report was given as six shillings, three and a quarter pence, or about twenty-two cents a day for the indigent class.

The buildings generally are one story in height. The administration buildings appear to be of temporary construction, consisting of frame offices of ordinary military type. The men's department, adjoining, consists of two enclosures, or wards, bounded upon one side by a long one story brick structure, with asphalt floors, to the corridor or porch and cells. The interior of the latter is whitewashed and perfectly clean. There is an abundance of ventilation, which makes up for the small cubic capacity of the cells. Moreover, the patients, with the exception of a few violent or criminal cases, spend their time constantly in the open air. The confinement cells are so open as to constitute cages with iron rod walls, so that seclusion as ordinarily understood does not exist. Mechanical restraint with the camisole is very seldom resorted to. Patients are not allowed to be nude; when they tear off their clothes, they are put in a suit of duck, laced up the back, which they cannot take off of themselves. The patients are neatly dressed, but are generally barefooted, which is the custom of the working people. They wear a blouse and drawers of white burlap, which is said to be all that is needed in this climate.

The construction of the new wards is practically fireproof, being of brick and concrete; but one of the old wards in the men's department is entirely of wood, strong vertical slats being used for walls. The outside walls are made double so that they can slide laterally and close the openings to keep out the rain. The beds generally are of a primitive type. They consist of a very strong wooden frame, the ticking being slung like a hammock from poles at the side, or fastened with eyelet holes to a row of projecting screws at the bedside. In order to keep them free from vermin, they are given a weekly bath of two hours in the sea, a measure which is said to be effective.

The laundry work and cooking is done in pavilions, or sheds, in the open air, and there are also dining pavilions. The new dormitory building for women is two stories in height, and consists of a long row of single rooms, with white enamel tile walls and asphalt floors, and on the second floor

there is one large dormitory. At the ends there are small dormitories, each for about twenty beds, for the more restless class. In the cells on the first floor, there is a projecting seat in the corner of the room, which can be used for a toilet, the discharges going into a surface gutter or drain connected with the sewer.

The patients appear well cared for and have a good deal of freedom allowed them. The prevailing character of the insanity is chronic mania, with delusions, dementia præcox, and dementia. There are almost no cases of pure melancholia, the colored patients being naturally cheerful and not disposed to worry about anything. Some cases of cyclic insanity are noticed, but only a few, and more rarely agitated melancholia. Suicide cases are almost unknown. Seventy or eighty (ten per cent.) of the patients have epilepsy. These have been duly committed and are all dements or paretics. There are very few idiots.

The number of attendants and employees (including carpenters, gang foreman, etc.) is about one to ten. The nurses as a rule do not sleep in the institution, but go home every night. They are uniformed, the men wearing a white suit with red collar and cuffs, and a hat and slippers; the women a neat blue gingham dress with white apron. The nurses are kind and considerate in managing the patients. They are not allowed to use mechanical restraint unless under the direction and supervision of the physician.

Cases of tuberculosis are isolated in a separate cottage. This disease is increasing to a marked extent in Kingston, owing to the unsanitary housing of the poor classes; but is rare in the country districts whence most of these patients have been brought to the asylum. The open air life in this institution prevents the development of new cases among resident patients. Alcohol is believed to exercise very little influence in the causation of the insanity, as shown by the records. Venereal disease also is an unimportant factor. There is, however, a great deal of malaria, and at times it is distinctly epidemic in the institution. There is no attempt to screen the windows, although the marshes around the bay afford a favorable breeding place for mosquitoes. No campaign against the yellow fever mosquito, the stegomyia, has been undertaken by the authorities, who depend upon the regulations of the quarantine station to prevent its importation.

The most important single factor, in the experience of this institution, in producing insanity is heredity. Pellagra, which is ascribed by the physicians to eating damaged corn meal, is a common cause. The number of cases of this type shows an annual increase in the spring months. Debilitated persons are more apt to be attacked, and in such the disease is generally fatal. The approved treatment is an improved diet and an arsenic preparation. At present six patients, four men and two women, suffering with the affection are now in the infirmary and are all recovering. They exhibit the usual skin lesions on the wrists and ankles, though not in an active stage.

The summary of cases admitted during the ten years, from 1898 to 1908, gives the following percentage of cures:

	Males.	Females.	Total.
Recovered	39.87	39.76	39.81
Improved	1.13	1.51	1.32
Not improved	1.29	.35	.82
Died	27.30	25.08	26.19
Remaining	30.41	33.30	31.86

Patients may be committed in several ways:

Private cases, after examination by two physicians and certification by them, are committed by magistrate's order.

Indigent cases: 1. The circumstances of the family with regard to ability to pay are first investigated by the Inspector of the Poor, who draws up a warrant. 2. The physician of the District examines and certifies as to the insanity and reports to, 3, a Magistrate, who makes the order for admission.

Criminal cases are admitted on special order from the Government and court of trial.

There is no commission on lunacy to supervise the patients, but a board of visitors is appointed by the Governor, two of whom inspect the hospital every month, and report at the quarterly meetings of the board.

(*To be concluded.*)

THE INLAY BONE GRAFT IN FRESH FRACTURES.*

By Fred H. Albee, A. B., M. D., F. A. C. S.,
New York,
Professor and Adjunct Professor of Orthopedic Surgery, University of Vermont and New York Post-Graduate Medical School.

Thomas, in a recent article (*Surgery, Gynecology, and Obstetrics,* May, 1914), emphasizes the unreliability of the Lane plate as shown by statistics of 450 fracture cases, gathered by him at the Cook County Hospital. He found that in forty-eight per cent. of all cases where the Lane plate was used, it had to be removed on account of suppuration or for other causes. These findings have been borne out by the observation of the writer and others. On account of the above mentioned experiences and the universal success which has attended the author's application of his inlay bone graft in old and ununited fractures of the shafts of long bones, he has been led to adopt it in the treatment of fresh fractures, with most gratifying results. As in the cases of ununited fractures, the motor saw, twin saws, doweling instrument, and drill are necessary adjuncts in perfecting the technic of applying the graft with that accuracy which insures the greatest success.

We have learned from our work in ununited fractures that we can secure union of the fragments, even when there is actual separation or loss of bone substance, by the inlay graft method, that angulation of the fragments can be corrected, and that the presence of the graft inlaid in the fragments stimulates the osteogenetic function, not only of the recipient fragments, but on the part of the graft itself, thus doubly assuring the formation of bone callous.

The fact that the author's last one hundred cases, including old and ununited fractures, when the inlay bone graft was used, produced 100 per cent. of successful results, strengthens the conviction that this method of dealing with fresh fractures should be equally successful. The technic of application dif-

*Read by invitation before the annual congress of the German Orthopedic Association, Berlin, April, 1914.

fers but slightly in treating fresh fractures by the inlay graft method, from that already used so successfully in the ununited fractures, and is much easier, as in old ununited cases the angulation and overriding of fragments and eburnation of the fractured ends present often greater obstacles to correction of alignment and implantation of the graft than would be looked for in recent cases.

The accompanying drawing illustrates the latest development of the author's technic of applying the inlay bone graft adapted especially to fresh fracture work. It also has certain advantages over my earlier method. (See *Journal American Medical Association*, August 3, 1912, p. 353, and *American Journal of Surgery*, January, 1914.) As shown in the drawing, with the fractured fragments held in proper alignment, the graft to be used is removed from the fractured bone, instead of from the crest of the tibia, by making the segment removed from one fragment double the length of that removed from the other, if possible five and one half inches for the long fragment and two and one half inches for the length of the short fragment.

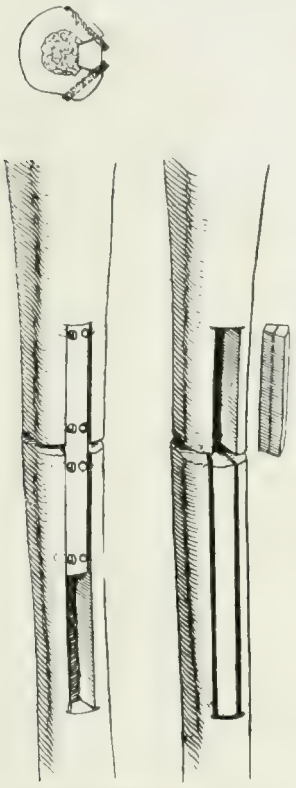


FIG. Illustrates the author's method of making use of the bone graft removed from the fractured fragments or from some other bone, as the tibia, in the treatment of fresh as well as ununited fractures of long bones. The smaller drawing illustrates the graft dowel pegs in position holding the graft in place, and also shows the shape of the graft and gutter bed on cross section. *a*, Dowel grafts in place.

After stripping up the periosteum overlying the area from which the short segment is to be removed—and this stripping should be done with a sharp instrument to insure the removal of the underlying osteogenetic cells—the gutter is started by the twin saws adjusted at a suitable distance apart, depending upon the size of graft and gutter to be formed. The long segment to be removed from the other fragment is outlined with the twin saws, adjusted at the same distance as when outlining the short segment, but the periosteum is removed from only the distal half of the long segment. These parallel saw cuts are now continued through the bone to the medullary cavity, with the single saw held at such an angle as to cause the cuts to converge in approaching the medullary cavity, in order to prevent the graft, when forced tightly into position, from dropping into the medullary cavity beneath. To free the ends of the grafts transverse cuts are made, either with a smaller motor saw or with a chisel.

The breadth of the saw blade cuts is sufficient to allow the graft, when turned about and placed in position, to sink slightly below the borders of the gutter, thus furnishing a margin along the sides of the long graft into which dowel holes are drilled obliquely outward to receive the autogenous dowel pegs made by splitting the removed short segment into fragments and running them through the doweling instrument.

When these pegs are driven into place, the graft is held securely, and proper alignment of the fragments is insured by the leverage action of the accurately fitting graft to its gutter bed. The periosteum is then drawn over the denuded portion of the graft and held by a few catgut sutures; also the periosteum left at the site of the short fragment is drawn across the gap and sutured with catgut.

It should be borne in mind that, as all the material used in the repair of the fragments is autogenous bone, osteogenesis will be stimulated at all bony contacts, graft, gutter bed, and dowel pegs. The remaining open portion of the gutter is left to fill in with new bone, as it does very rapidly, and should cause no concern. The overlying soft parts are drawn together, bleeding points ligated, the skin wound is closed by continuous catgut suture, and a plaster of Paris fixing dressing applied.

40 East Forty-first Street.

THE RELIEF OF STATES OF HIGH VASCULAR, MUSCULAR, AND MENTAL TENSION.

By William J. M. A. Maloney, M. D., Ch. B., F. R. S. Edin.,
New York,
Adjunct Professor, Diseases of the Mind and Nervous System, Post-Graduate Medical School; Attending Neurologist, Central and Neurological Hospital;
And Victor E. Sorapure, M. D., F. R. C. S., Edin.,
Instructor in Diseases of the Mind and Nervous System, Post Graduate Medical School; Visiting Physician, Central and Neurological Hospital.

The mental state necessary for thrifty and deliberate muscular action is usually lacking in the confirmed ataxic. His impulse to move often overflows to muscles which should be unconcerned, just as in children the impulse to write sometimes causes grimacing and protrusion of the tongue. Ineffective and often disconcerting muscular contractions are acquired by the ataxic in his attempts to balance. Accompanying this state of mental tension and of muscular constraint, increase of the breathing and of the pulse rate is very evident. Obviously, such conditions greatly interfere with the carrying out of motor education.

James and Lange taught that an emotional state is consequent upon a physical state; that the physical state is the immediate source and precursor of the emotion. According to this theory, fear develops because our heart quickens; our heart does not quicken because we fear; the tachycardia is the cause of the fear; the fear results from the tachycardia; and we fear because we breathe rapidly and irregularly; we do not breathe rapidly and irregularly because we fear; the hurried, shallow, gasping respirations cause the fear; the fear results from the hurried, shallow, gasping respiration. Fear without visceral change cannot occur. Absence of visceral change implies

absence of emotion. To control visceral change is to control emotion. To minimize visceral change is to minimize emotion.

Deep breathing slows the heart's rate. The changing of hurried, shallow breathing into slow, deep breathing, and the reducing of the heart's rate mitigate or dispel fear. So long as the breathing remains controlled and the heart slow, no considerable fear or excitement can exist. It therefore promised to be advantageous to ataxics to precede their education in movement by breathing exercises, not only because of the good effect which regulating and controlling the breathing produce upon fear and excitement, but also because breathing exercises afford a ready means of concentrating attention, of preventing distraction.

Every emotion, every thought is externalized in muscular action. Vierordt showed that in the erect posture the greatest degree of voluntary immobility of any person was accompanied by definite oscillation of the head. He further showed that if a person, standing as motionless as possible, expected to hear something on the right side, the whole body took up a new axis of movement—the whole body now swayed to the right. If the sound was expected from the left, the whole body swayed to the left. Numerous experiments corroborated these facts and proved beyond doubt that changes in our stream of consciousness are partly externalized as muscular action. Hence, the attitude of the ataxic is partly an emotional expression, an expression of his uncertainty and fear. Complete muscular relaxation therefore promised still further to tranquilize the anxious tabetic and in addition to afford an unconstrained musculature receptive to education in normal movement.

Doctor Maloney therefore elaborated for the relief of states of mental and muscular tension, certain depressor exercises which he used as an introduction to the cure of ataxia by his blindfold method. In tabetics who were practising these exercises, he observed a fall of blood pressure; and patients reported to him that at home the exercises often led to sleep. He next observed in a case of chronic nephritis that by such exercises, the systolic blood pressure was reduced from 220 to 192 mm. in fifteen minutes. He communicated these observations to Doctor Sorapure, who rapidly verified them in over forty cases, and who then instructed several physicians in the exercises. These physicians reported equally good results. Altogether, over 300 observations have been made, and in more than fifty cases the effect of these exercises has been studied.

The exercises may be divided into two groups, breathing exercises and relaxation exercises.

Breathing exercises. As we seldom use effort to expire, and often need effort to inspire, expiration, throughout life, is to a great extent a passive, mechanical act; whereas inspiration more often is consciously performed. So inspiration is usually better controlled than expiration, and much of the trouble in teaching breathing exercises lies in training patients to govern their expiration. We first instruct the patient to breathe deeply, and to pause at the end both of inspiration and of expiration. The breathing should be abdominal and should be done without jerking. One of the purposes of deep breathing is to distract the patient from obsessing thoughts and disturbing ideas, to focus his attention upon the exercises. But deep breathing quickly tires patients. Therefore, after about twelve full breaths, the patient is allowed to pass to breathing of moderate amplitude. Now all imagery is discouraged. The patient is asked to feel only the passage of the air through his nasal cavities, only the tactile sensations which arise from the movements of his abdominal wall against his clothes. While he is so practising, he is cautioned to stop any distracting thoughts as they arise, to keep his attention upon the sensations which accompany his breathing. After a few minutes of "medium" breathing, the patient is taught to breathe gently and quietly and to attend only to the accompanying sensations. A bag of sand or shot, or other heavy object, placed upon the abdomen, is useful to increase the muscular effort involved in breathing, so that breathing, during the exercise, may not easily lapse into an unconscious act. Instead of the sand bag, the physician's hand may be used.

Relaxation exercises. To relax the muscles, passive movements, in which the muscles are alternately lengthened and shortened, are employed. The scalp, forehead, cheek, and jaw muscles of the recumbent patient are passively moved by the physician, till wrinkling diminishes or disappears and muscular spasm is eliminated. Next, a shoulder is relaxed; then an arm. Each limb is dealt with separately. Each joint is passively moved until all trace of muscular tension vanishes. When the joints of a part are free from all muscular constraint, the part lies motionless or flaccid or falls limply from any unsupported position. After a part is relaxed those previously, and those newly relaxed should be briefly dealt with again, and in the order in which they were first relaxed. Thus, after relaxing the first limb, the physician turns again to the scalp, forehead, cheeks, and jaw; relaxes those, and then again the limb. This linking of parts previously, to parts newly relaxed is helpful in bringing the whole to a satisfactory state of relaxation.

The relaxation of the neck and trunk muscles is best accomplished while the patient sits. The patient's relaxed arms should then hang loosely down by his side, and his feet, crossed one over the other, should rest on their outer borders. The head should next be passively rotated in all directions, slowly and repeatedly. Then, by moving the supported trunk, the head is allowed to fall passively backward and forward, by its own weight. Finally, the head rests with the chin upon the chest, or hangs forward suspended by the ligamentum nuchæ.

The trunk should be slowly bent backward and forward and from side to side, until sufficient loosening of the muscles is obtained to allow the trunk to gravitate without restraint in whatever direction it is inclined, unsupported.

All movements should be first passively made by the physician, and then, where possible—limbs, head, and trunk—passively induced by the action of gravity.

Effects of breathing and relaxation exercises. Beside the tranquilizing of excited and anxious states and the general relaxation of the muscula-

ture, certain other physiological effects result from these exercises. Among these effects is a reduced frequency of the movements of the eyelids. At the beginning of a treatment, the eyelids quiver. As tranquillity is gained, the quivering grows less, until often the lids lie motionless. When distractions arise, the lids begin to flicker, or if flickering was present before, it now increases. During the exercises, a high blood pressure almost invariably fell:

Case I. J. S. (treated by Dr. E. L. Kellogg) suffered from chronic renal disease. On October 27th, the systolic blood pressure was 225 mm.; after exercises for twenty minutes, the systolic blood pressure was 195 mm. Five hours later, the systolic pressure taken by Doctor Kellogg, after patient had been attending business, was 200 mm. Here, the exercises produced a temporary fall of thirty mm., and a more persistent fall of twenty-five mm.

Not only in organic renal diseases, but also in cases of high blood pressure in which no renal disease could be detected, a fall occurred.

Case II. J. P., aged fifty years, suffered from neurasthenia, mental and bodily fatigue, gastric disturbances, and vague head symptoms. On October 24th, the pulse rate was ninety-six a minute; the systolic blood pressure, 146 mm.; the diastolic, 90 mm.; and pulse pressure, 56 mm. After exercises for twenty minutes, the pulse was 80; the systolic blood pressure, 110 mm.; the diastolic, 80 mm.; and the pulse pressure, 30 mm. Here the systolic pressure was diminished by 36 mm., the diastolic by 10 mm., the pulse pressure by 26 mm., and the pulse rate by 16 a minute.

A reduction of twenty-five to thirty mm. in the systolic blood pressure, as a rule, resulted from the exercises, but greater reductions occurred.

Case III. P. T., aged sixty years, suffered from arteriosclerosis, chronic renal changes (albumin 0.5 to one per cent., casts), and cardiac hypertrophy; his apex was 6.5 inches from the middle line in the sixth space; his liver edge was three inches below the costal margin in the right mammary line. His pulse rate was 50 to 60, and the pulse was intermittent and irregular in size. He had marked dyspnea and dizziness, had been treated with diet, rest, baths, drugs, and autocondensation for six months. When seen, October 19, 1913, the systolic blood pressure was over 260 mm. (the maximum of the Tycos apparatus); the diastolic was 120 mm., and the pulse pressure was over 140 mm. Exercises were taught for twenty minutes. The systolic blood pressure was then 190 mm.; the diastolic, 120 mm.; and the pulse pressure, 70 mm. Here the systolic fell more than 70 mm., the diastolic remained unchanged, and the pulse pressure was decreased fifty per cent. There was practically no change in the pulse rate, but the beats were more regular in size and rhythm.

Similarly marked results were obtained in functional cases.

Case IV. Mr. C. suffered from neurasthenia and insomnia. On December 26th, his pulse rate was 86; systolic blood pressure, 186 mm.; diastolic, 120 mm.; and pulse pressure, 61 mm. Exercises were taught for one hour; then the pulse was 70; the systolic blood pressure 140 mm.; and the diastolic, 90 mm. Here, the systolic fell 46 mm.; the diastolic, 30 mm.; the pulse pressure 15 mm.; and the pulse rate, 16 beats a minute.

This fall in blood pressure occurred not only in cases of high pressure, but also in normal people. Among normal people, a fall of ten to fifteen degrees was customary.

Case V. Dr. J. A., a physician who was being taught the method, on November 11th, had a pulse rate of 78; a systolic blood pressure of 146 mm.; and a diastolic, 110 mm. After exercises for ten minutes, his pulse was 72; his systolic blood pressure was 130 mm.; and his diastolic, 100 mm.

The fall, as a rule, affected almost equally the systolic and the diastolic pressure in normal people. Sometimes, also, an equal fall in systolic and diastolic pressure occurred in persons with organic disease.

Case VI. P. L. S., aged forty-two years (referred by Dr. A. L. Malabre), suffered from arteriosclerosis, chronic renal disease, aortic disease, repeated attacks of angina pectoris, and a sense of severe presternal constriction. On November 10th, the pulse rate was 86; the systolic blood pressure, 170 mm.; the diastolic, 145 mm.; and the pulse pressure, 25 mm. After exercises for fifteen minutes, the pulse was 80; the systolic blood pressure, 145 mm.; the diastolic, 120 mm.; and the pulse pressure, 25 mm. Here both the systolic and the diastolic blood pressures fell 25 mm., as the result of the exercises.

But in those in whom the blood pressure was abnormally high, the systolic pressure usually fell to a greater degree than the diastolic.

Case VII. G. A., aged sixty years, suffered from arteriosclerosis, cardiac hypertrophy, and chronic renal changes. On October 29th, the pulse rate was 60 to 80, and the pulse was intermittent and irregular in volume; the systolic blood pressure was 200 mm.; the diastolic, 150 mm.; and the pulse pressure, 50 mm. After exercises for twenty minutes, the pulse rate was 80, the pulse, only occasionally intermittent, and much more equal in volume; the systolic blood pressure, 160 mm.; the diastolic, 120 mm.; and the pulse pressure, 40 mm. Here, the systolic blood pressure fell 40 mm., the diastolic fell 30 mm.; the systolic fell ten mm. more than the diastolic. In Case II, the systolic fell 26 mm., in Case III, at least 70 mm., and in Case IV, 16 mm., more than the diastolic pressure.

In cases in which, so far as we could detect, the high blood pressure was not due to structural changes, the diastolic pressure was sometimes more diminished than the systolic.

Case VIII. T. C., a clergyman, aged thirty-six years, suffered from neurasthenia, loss of memory, and sleeplessness. On October 29th, the pulse rate was 90; the systolic blood pressure, 160 mm.; the diastolic, 100 mm.; and the pulse pressure, 60 mm. After exercises for twenty minutes, the pulse rate was 80; the systolic blood pressure, 138 mm.; the diastolic, 70 mm.; and the pulse pressure, 68 mm. Here, the systolic pressure fell 22 mm., the diastolic, 30 mm.

Indeed, in such functional cases, a fall in blood pressure was not invariable.

Case IX. H. S., aged twenty-six years, suffered from psychasthenia, with affection of memory, attention, vision, and speech. On December 2d, the pulse rate was 76; the systolic blood pressure, 130 mm.; the diastolic, 75 mm.; and the pulse pressure, 55 mm. After exercises for three periods of fifteen minutes, the pulse rate was 70; the systolic blood pressure, 135 mm.; the diastolic, 90 mm.; and the pulse pressure, quite normal—45 mm. Here the systolic blood pressure had risen 5, the diastolic, 15 mm.

These functional cases in which a rise, particularly in the diastolic pressure, can be detected, are very interesting, in view of the repeated statements that "nervous conditions" do not produce low blood pressures. In this last case, as in several others which we have examined, where nervous exhaustion was associated with a low blood pressure, the exercises relieved the exhaustion and tended to raise the blood pressure, and to restore the pulse pressure to normal; hence, we concluded that the lowered blood pressure was due in part to nervous influences. We have insufficient evidence yet to justify generalization, but our results, so far, seem to indicate that, at least in functional cases, these exercises tend to cause pulse pressures which are abnormal to approximate the normal, and tend in organic cases to produce a lowering of the blood pressure, greater in the systolic than in the diastolic.

Beside the fall of blood pressure, a decrease in

the pulse rate occurred. This decrease was almost a general feature. In several cases the decrease was slight, and in one was absent. We have not yet noticed an increase of the pulse rate. The amount of the decrease varied greatly. Sometimes the pulse rate fell thirty or forty a minute. Usually a fall of ten to fifteen a minute occurred. The higher the initial pulse rate, the greater was the lowering. Beside the decrease in the pulse rate, pulse irregularities diminished or disappeared during the exercises. Not only was the normal time rhythm restored, but the pulse volume tended to become uniform.

Psychologically, these exercises produce concentration of attention and restriction of consciousness. The physiological effects are relaxation of the voluntary muscles, diminution of muscular reflexes, slowing of the pulse rate, a tendency to reestablish in the pulse rhythm in time and volume, lowering of blood pressure, and a tendency to restore the normal pulse pressure. The slowing of the pulse rate and the fall of blood pressure should be considered together when estimating the effect of these exercises upon the work of the heart. The difficulty of estimating the heart's output prevents us from stating, in actual foot pounds of work, the benefit which the heart derives from the exercises.

These beneficent changes differ very little from the changes which characterize the first stage of hypnosis, although no suggestion, except the carrying out of the exercises, is made, and the patient throughout is wholly and acutely conscious. Indeed, it is imperative that he use his conscious faculties to their full extent, for our object is to *teach* the patient how to master these exercises, so that he may be able to perform them in all circumstances in which recourse to their aid is necessary.

Routine procedure. The patient is instructed simply and briefly in the essentials of the treatment. This preliminary instruction occupies from ten to fifteen minutes at the first sitting. Then, in a room kept as quiet as possible, so as to avoid distraction, he is made to lie down on a couch sufficiently high to enable the physician to work without stooping unduly, and sufficiently broad to prevent the limbs from falling over the edge of the couch. His head rests on a low and not too soft pillow. He is now told to breathe deeply. From deep breathing he passes to medium, and finally to gentle breathing. Then relaxation is systematically performed, beginning with the face and limbs, and proceeding to the head and trunk. Throughout the relaxation, the physician periodically corrects the breathing, slows it as it quickens, insures adequate pauses at the end of inspiration and expiration, and encourages uniform, not staccato movements.

The objective guide to success is the behavior of the eyelids. Usually when the lids were still, the pulse rate had slowed, and the blood pressure had fallen; when the quivering returned, the patient was uncomfortable or distracted, and the pulse rate and the blood pressure had increased. We were able, by watching the eyelids, to guess the progress, and we needed not to disturb and excite the patient by frequent pulse or pressure observations.

The exercises should last about twenty minutes at first. If they are longer the patient gets restless. We usually begin with several ten minute sessions, separated by short intervals, in which the patient is allowed to walk about or to read. As the patient learns, the sessions may be lengthened to three quarters of an hour. Five to ten sessions usually suffice to teach the whole procedure. Occasionally, the first lesson is a failure. A patient, being nervous and not realizing what is required of him, may be afraid to trust himself too freely to a treatment which is so foreign to all his experience. Such patients at a second session usually react well. Thus, in the following case, the first treatment was only partially successful. The second produced a fall of 46 mm. in the systolic, of 50 mm. in the diastolic blood pressure, and an increase of 4 mm. in the pulse pressure.

Case X. P. G., aged forty-three years, suffered from hyperthyroidism. On October 23d, the pulse rate ranged from 100 to 120; the systolic blood pressure was 235 mm.; and the diastolic, 175 mm. During the exercises, for two periods of twenty minutes each, the patient was very nervous. After the exercises, the pulse rate was 120; the systolic blood pressure, 208 mm.; and the diastolic, 180 mm. On October 25th, the pulse rate was 110; the systolic blood pressure, 200 mm.; the diastolic, 160 mm.; and the pulse pressure, 40 mm. After exercises for twenty minutes, during which he cooperated willingly and intelligently, the pulse rate was 90; the systolic blood pressure, 154 mm.; the diastolic, 110 mm.; and the pulse pressure, 44 mm. After brisk walking for one hour, the systolic blood pressure had risen to 180 mm.

It is only the stupid, only those who from cerebral disease and from hemorrhages are too deteriorated, or who from uremic poisoning are too dull to comprehend, who do not respond well to the method. Thus, in the following case, the exercises were completely useless.

Case XI. J. M., aged forty-five years, suffered from chronic renal disease, and had a history of three cerebral hemorrhages. On October 26th, the pulse rate was 84; the systolic blood pressure was 220 mm.; the diastolic, 160 mm.; and the pulse pressure, 60 mm. Exercises were taught for half an hour, but the patient failed utterly to concentrate his attention. At the end of this period, the pulse rate was 80; the systolic blood pressure was 210 mm.; the diastolic, 160 mm.; and the pulse pressure, 50 mm. On October 29th, the pulse rate was 86; the systolic blood pressure, 225 mm.; the diastolic, 170 mm.; and the pulse pressure, 55 mm. Exercises were practised for half an hour with no better success. Then the pulse rate was 80; the systolic blood pressure, 225 mm.; the diastolic, 170 mm.; and the pulse pressure, 55 mm. This case showed an inconstant reduction of 10 to 15 mm. in the systolic pressure, after autocondensation. Baths and dietetic measures have been accompanied by a fall in the average daily systolic pressure to between 170 and 180 mm.

The degree of success depends largely upon the aptitude of the patient. The easier he is to teach, the less is the strain upon him, and the more pronounced is the resulting fall of blood pressure. Before people to whom the patient is accustomed, and under conditions in which he is not allowed to feel that the lesson is a demonstration or an experiment, results are attained just as when the patient is alone with his physician. But before spectators, failure may occur, sometimes even in those in whom excellent results have already been attained. The reason of the failure is the patient's distraction by the strange presence. Therefore we now no longer try to demonstrate the process upon patients to physicians; but we teach the physician the method by relaxing him, and by allowing him to practise upon us; and we rely for the demonstration

of its effects entirely upon his own experience. The technic is so simple that it can usually be learned in one lesson. In this way we have now taught five physicians; none has encountered any difficulties, and all have reported their satisfaction at the results they have obtained.

Therapeutic applications. It has already been mentioned that the exercises were originally devised as an aid to the reeducation of the ataxic tabetic. Obviously they were applicable in all cases in which the relief of high vascular, muscular, or mental tension was desired. They were therefore taught in cases of high blood pressure; of muscular spasm; and of insomnia and other neurasthenic symptoms.

In cases of hyperthyroidism, neurasthenia, and anxious states, accompanied by high blood pressure, after the exercises the pressure may return to the normal level, and may more or less persist there; but in cases of chronic kidney diseases with systolic pressure ranging from 200 mm. upward, the amount of benefit which we have been able to confer has, as a rule, been definitely limited. From 165 to 190 mm. is the general level to which systolic pressures above 200 mm. can be reduced by the exercises. It does not seem to matter how high above 200 mm. the pressure is. It can be reduced to this 165 to 190 mm. level, if the patient can perform the exercises. Further reduction is then difficult to obtain. This high pressure minimum level, between 165 and 190 mm. is present in most cases, but we have met one in which it seemed to be absent, in which reduction from 215 mm. to 154 mm. was occasionally obtained.

The duration of the fall in blood pressure was variable. In one case, after half an hour's walking exercise, the lowering of the blood pressure persisted to the same degree. This we repeatedly demonstrated; and in another case we found that a systolic pressure initially of 200, falling, after relaxation for fifteen minutes, to 154, remained about 180 after one hour's walking.

The initial systolic pressure at successive sessions tends to be progressively lower. This is attained because the influence of the procedure does not cease when the patient leaves the physician's office. Once the patient is instructed in the exercises, he can practise at every available opportunity. He is particularly encouraged to do so after any strenuous or exciting occurrence. The blood pressure is, therefore, not only reduced in the physician's office, it is repeatedly reduced in the intervals between visits; and when the stress of circumstances in daily life causes it to rise, the high level is not permitted by the patient to endure. The average pressure is, therefore, maintained constantly at a lower level, and periods of high level pressures are abbreviated. Together with the shortening of the periods of high pressure level, the maintenance of a lower average pressure level, and the approximation to a normal pulse pressure, we found in some of our cases that oscillations in pressure became less frequent, less easily induced, and of smaller extent. The blood pressure regulating mechanism seemed to acquire stability under the influence of the exercises.

This treatment by exercises is in no sense a radical cure. High blood pressure, which is only a symptom, is merely alleviated by the exercises. But this alleviation in itself is an achievement. The conditions which cause high blood pressure do not usually menace life. It is from the high blood pressure itself that catastrophes arise. In giving the patient this method of maintaining his blood pressure at a lower level, we confer upon him not only a constant safeguard, but also a greater control of the blood pressure regulating mechanism. He is thus protected from the sudden excessive rises in blood pressure which are usually responsible for cerebral accidents. By lowering the blood pressure, we not only decrease his danger, we also minimize the cause of many untoward signs, such as cardiac hypertrophy, aneurysm, etc. The essential condition is not influenced by the exercises, but it may be by dietetic and medicinal measures.

It has been clearly and repeatedly demonstrated that these exercises can be much more efficient than autocondensation. In a case reported to us by Doctor Kellogg, autocondensation was long practised, but yielded a maximum fall of only ten mm. in the blood pressure. After the exercises the blood pressure fall was thirty mm. In another case in which a maximum of twenty mm. fall had been produced by Doctor Wolf by autocondensation, forty mm. was obtained by the new method. In another case, in which autocondensation had failed entirely, a fall of thirty-five mm. was obtained by the exercises. We have some evidence to show that the action of autocondensation is itself largely psychic. Autocondensation can be enjoyed only in a physician's office, and its results on the blood pressure practically cease with the visit to the physician. These exercises can be used by the patient anywhere and at any time. All that is necessary is a few lessons and then a little quiet, a little leisure, in which to practise. We wish strongly to emphasize the promise of these exercises in early cases of rising blood pressure.

In cases of neurasthenia, the exercises have a wonderful value. We have seen obsessing ideas lose their force, insomnia of long standing disappear, headaches vanish, dizziness, feelings of compression and constriction, and vague pains of functional origin relieved, by the use of these exercises, when drug treatment had failed. In two severe cases of neurasthenia of long duration, we found the exercises a helpful adjuvant to the usual "rest cure."

In one case of hyperthyroidism, the exercises produced a marked fall in blood pressure, a diminution of the tremor, and a very satisfactory general improvement. In another case, after two sessions in which the patient had made very little progress in learning the exercises, she ceased to attend. In hysterical states, our results have been disappointing. Hysterics find it difficult to do the exercises, and therefore do not appreciate, as others often do, the value of the procedure in the first session. We have had several who began the treatment and stopped after two sessions, apparently without having derived much benefit from our efforts. The failures occurred in a crowded dispensary clinic, where conditions are not very favorable for teaching patients.

Two hemiplegics, who were not too deteriorated

to comprehend the exercises, were taught. In each case the contractures were temporarily eliminated and were permanently diminished. We also succeeded in markedly diminishing the tremors in two cases of paralysis agitans of an advanced type. This diminution has persisted in one case from November till now (February 27th). The other we have not seen for a month. A third case, that of a Russian, who could not understand the instructions, was not improved by the first two sessions, and he ceased to attend.

Physicians have long known that during sleep, muscular spasm decreases in hemiplegics, and the unconscious movements cease or diminish in paralysis agitans, in chorea, and in other nervous affections. Our exercises are a means of producing the same muscular relaxation in the waking state. When the relaxation is obtained, the hemiplegic or other sufferer should be given graduated exercises, first in passive movements, next in passive resisted movements, then in active guided movements, then in active unaided movements, and, finally, in active resisted movements, as Maloney has outlined them for the treatment of ataxics.

We tried to determine the most valuable of the various factors in these exercises. We studied first the effect of posture alone in ten cases of high blood pressure. The patient sat on a couch and his blood pressure was taken. After he had remained quietly seated, without talking, for ten minutes, his blood pressure was taken again. He next lay back on the couch for another ten minute period. Then his blood pressure was taken once more. We found that when the posture did not reduce the blood pressure in these high pressure cases, the result was veiled by greater influences, which were acting at the same time. In those patients who seemed apathetic, who sat and lay patiently and quietly throughout the test, a fall occurred when in the recumbent posture. In those who restlessly awaited the end of the ordeal, the pressure was often higher at the end than at the beginning of the experiment.

The alterations in the pulse rate due to change of posture in cases of high blood pressure, were not always accompanied by corresponding variations in pressure. The pulse rate and the pressure usually, but not constantly, varied in the same direction. But sometimes a change occurred in the blood pressure, although no observable change was present in the pulse rate. As a rule, cases of high blood pressure and pulse rate were influenced proportionately more in their pulse rate than in their blood pressure, by change of attitude.

We studied similarly, in ten cases, the effect of the breathing exercises alone. Results the same as, but less marked than those observed with the combined exercises, were usually obtained. The relaxation exercises were likewise practised alone and were found to be more effective than the breathing exercises in reducing blood pressure. We found in several cases, after the blood pressure had been markedly diminished by the exercises, that subsequent walking and work did not materially raise it again.

Doctor Wolf produced powerful tetanic spasms in the muscles of two of the patients, for one hour, by means of his Bergonié apparatus. The blood pressure in one case was unaffected; and in the other was reduced ten mm.

These experiences lead us to think that too much emphasis has been given to the immediate physiochemical influences which alter blood pressure. The power of these influences has been demonstrated mainly in animals in which anesthesia has minimized cerebration. *In man the psychic influence upon blood pressure appears to be so powerful that any conclusions regarding other influences must be very carefully scrutinized.* Cannon has recently shown that cats, when excited, have an abnormal amount of suprarenal secretion in their blood. To the vasoconstrictor action of this secretion, part of the heightening of blood pressure in excited states may be due. Another part is probably due to the freeing of the cardiovascular reflexes from the general inhibitory influence which cerebral control normally exerts upon all reflexes. The whole question of the psychic influence upon blood pressure is complex and is urgently in need of investigation.

The influence of the exercises upon the patient's mental state was the chief factor in their beneficent action. This psychic influence in cases of abnormal pressure is greater than that arising from posture; than that arising from the carbonic acid gas control of the blood; than that arising from the mechanical action of deep breathing upon the circulation; and than that arising from the removal of spasm from the musculature.

40 East Sixty-second Street.

106 Central Park West.

SURGERY OF THE HOURGLASS BLADDER.*

By J. Bentley Squier, M. D.,

New York,

Professor of Genitourinary Surgery, Post-Graduate Medical School and Hospital.

Cure by surgery of the various types of vesical diverticula is yet among the recent advances of surgical progress, and for this reason it seems of considerable importance, to report any radical variance of accepted operative technic which has been of value in the management of such cases. In 1912 William Lerche reviewed the subject and collected fifteen cases in which diverticula of the bladder had been excised with more or less success. In the same year, Chute reported two cases treated by operation; later, one was recorded by Bryan and one by Bergener.

With but four exceptions all these cases had been approached by the extraperitoneal route. Beer contributed to the subject in 1913, with the report of the transperitoneal removal of an enormous diverticulum, the probable capacity of which was twenty ounces. Lower, in January, 1914, published An Improved Method of Removing Diverticula of the Urinary Bladder, the main feature of which consists in converting the collapsed diverticulum into a solid or semisolid tumor before removal is attempted. This is accomplished by packing the cav-

*Read before the Genitourinary Section of the New York Academy of Medicine, March 18, 1914.

ity of the diverticulum with gauze strips prior to excision. He reports three successful cures with this method.

The salient features in the history of the case which I desire to add to those already on record, are as follows:

CASE. The patient, a man aged forty years, consulted me on February 7, 1914, as to the advisability of starting catheter life, in view of the fact that within a few days a physician had passed a catheter and discovered a large

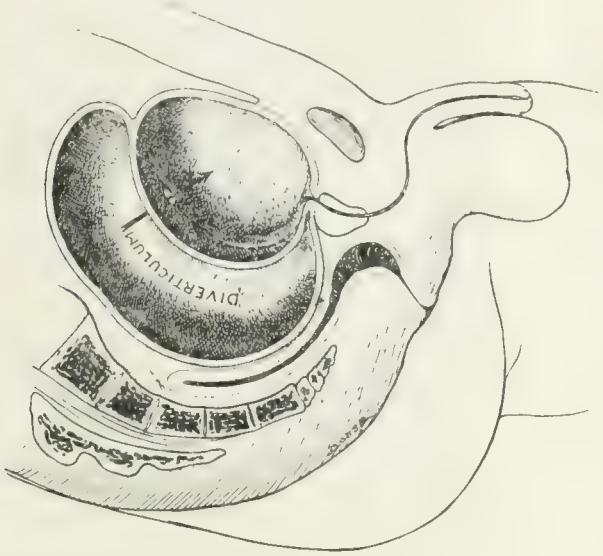


FIG. 1.—Extensive diverticulum, adherent to anterior wall of rectum and sigmoid.

amount of residual urine in his bladder. He had been under treatment since November, 1913, for a cystitis of supposed Bacillus coli origin. The onset of his disease had been sudden, ushered in with chill and rise of temperature to 103° F. hematuria, and pyuria. There had been one or two previous attacks of cystitis, usually associated with intestinal disorder. His convalescence had been tedious; the pyuria had diminished with lessening of the bladder symptoms. There had been some rectal prolapse which added to his discomfort. No evidence of pyelitis had been present. The treatment had been internal medication only, with the various urinary antiseptics. No definite attempt had been made to arrive at a scientific diagnosis beyond routine examinations of the urine.

When first seen by me, examination of the urine showed a marked pyuria with the presence of Bacillus coli. He was passing urine every hour with much tenesmus and

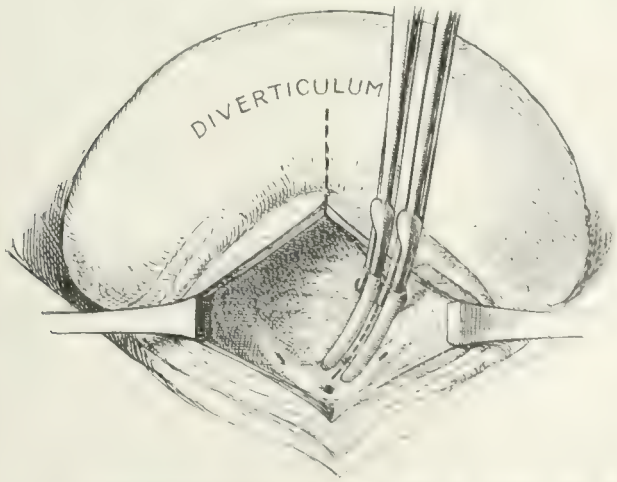


FIG. 2. Division, between clamps, of walls of bladder and diverticulum.

pain referred to the rectum. A soft catheter drew thirty ounces of foul residual urine. Considerable manual abdominal pressure was necessary to aid in the evacuation. Cystoscopic examination revealed the presence of an opening into a diverticulum, just above and outside of the left

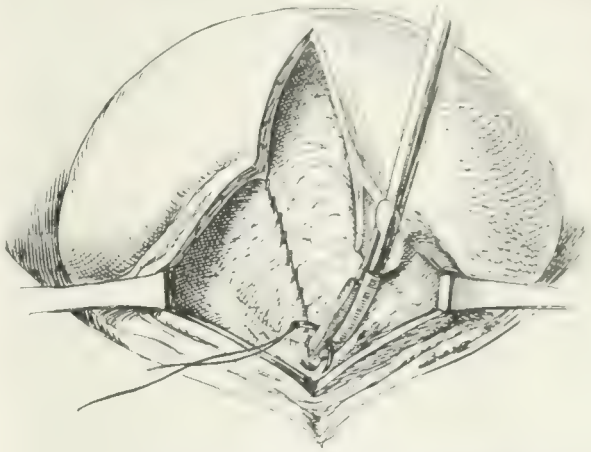


FIG. 3.—Approximation of cut edges with running stitch, converting into one the cavities of both bladder and diverticulum.

ureteral opening. His total bladder capacity was three pints. By stereoscopic radiographic examination of the bladder, after it had been distended with forty ounces of a twenty-five per cent. solution of argyrol, an enormous diverticulum of the bladder was outlined. This was situated behind the bladder, extending from the junction of prostate and bladder to well over the fundus. Operation for removal was advised and accepted.

OPERATIVE TECHNIC.

Under gas and oxygen anesthesia, with the patient in the high Trendelenburg position, the abdominal cavity was opened through a low median incision, the intestines were deposited in the upper abdomen and isolated by gauze packing. The urachus was divided and the peritoneum stripped with difficulty

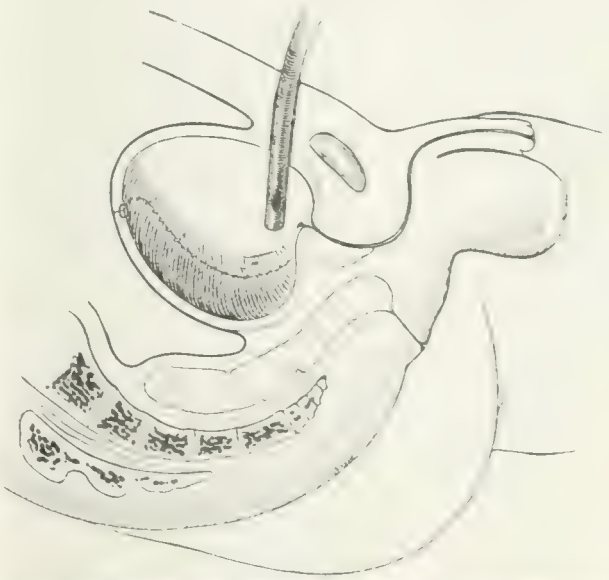


FIG. 4.—Drainage after operation by means of suprapubic tube. Superior portion of diverticulum removed.

from the fundus of the bladder and diverticulum. The diverticulum was found to be so extensive and so adherent to the anterior wall of the rectum and sigmoid, that it was considered unwise to make further attempt toward excision. (Fig. 1.) At

this juncture the bladder was incised, the communication between it and diverticulum located, and a more conservative policy adopted than the contemplated radical excision. The steps were: First, two slender intestinal anastomosis clamps were introduced, one blade of each into the diverticulum, the other into the bladder, clamping the posterior wall of bladder to the anterior wall of the diverticulum, the direction of the clamps being downward and inward from diverticular opening to internal vesical meatus.

The walls of the bladder and diverticulum were divided between these clamps (Fig. 2). The cut edges were then carefully approximated with a running catgut stitch, thus converting into one the cavities of bladder and diverticulum (Fig. 3). The upper portion of the diverticulum was then excised and the bladder wound closed, greatly reducing the size of the newly formed bladder. The bladder was drained by a suprapubic tube (Fig. 4.) Closure of peritoneum and abdominal wound followed, and cigarette drainage of the prevesical space completed the operation. The patient made a good recovery from operation, but his convalescence was complicated by an acute parotiditis, which, however, did not go on to suppuration. The suprapubic tube was removed at the end of a week and he began to urinate normally. The bladder wound was closed on the fourteenth day and he left the hospital four weeks after the operation.

His condition two months after operation is as follows: Urinary frequency has disappeared and he is not up at night to urinate. The bladder capacity is twelve ounces. He is able to void completely a measured quantity of injected fluid, although there is a residual urine of from one to two ounces. He has gained fifteen pounds in weight since the operation and the pyuria is fast disappearing

REMARKS.

This technic is especially applicable to those diverticula in which the ureter opens directly into the diverticulum, and the danger to the kidneys, concomitant with ureteral transplantation, will be avoided. Mere division of a septum, either with knife or cautery, between bladder and diverticulum without suture, carries with it the possibility of leakage of urine and infection of the perivesical spaces. It is not my idea that this method of treating diverticula should be a matter of routine. Small diverticula should be excised according to the method of Lower, but in cases of typical hourglass bladder, the more conservative operation above described seems to carry less risk, chiefly where adhesions to surrounding viscera or the extent of the diverticulum would make excision hazardous.

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49 East Forty-ninth Street.

VAGITUS UTERINUS.

Report of a Case.

By George L. Brodhead, M.D.,
New York.

In the New York Medical Journal for October 11, 1913, Telfair reported a case of vagitus uterinus, and stated that until very recent years, every paper on the subject aroused a storm of criticism, sometimes ridicule. This criticism was not limited to the profession in general, the bitterest usually coming from obstetricians of wide experience. These men were frank enough to say that they never saw a case, and did not believe that any one else ever did. At the close of his article, Telfair stated that of forty-four reported cases more than half were operative deliveries; eleven being by forceps, fifteen involving versions, and one a replacement of arm and cord. The fetal mortality was ten per cent., many of the children surviving only after prolonged efforts at resuscitation. The history of the case which I wish to report is as follows:

Case. Mrs. C., a vii para, a patient in the service of the Post-Graduate Hospital, went into labor on March 24, 1911, at 8 p. m. The first stage lasted ten hours, and during this stage, the membranes were ruptured artificially. The second stage was prolonged, and it was decided to apply forceps. The head was below the brim, the fetal heart was 140 to 150, the patient's pulse 128. Dr. F. M. Turnbull, the intern in charge of the case, stated that the right hand was introduced to the left ear, and he was about to introduce the left blade when he heard a distinct loud cry from the baby, the cry being heard also by Doctor Stilson, the anesthetist, by a woman in the same room, and by still another woman who was in an adjoining room. The crying continued at intervals from that time until the head was extracted thirteen minutes later. Traction was continuous, and the delivery was completed as soon as possible. The child had a good color, was in good condition, and weighed ten pounds, ten ounces.

To the list of reported cases can be added one reported by Marx to the New York Obstetrical Society, a full account of which is to be found in the *Transactions* of the society for 1906-07, page 257. Marx stated also that he had heard such a cry once before in his experience. When asked to discuss this case of Marx, an eminent obstetrician, a member of the society, stated that in his opinion such a cry was impossible. This only bears out what Telfair has already stated, namely, the sincere doubt which has existed in the minds of men even of large experience, with reference to the possibility of a uterine cry. Both of the men who were in charge of the case which I have reported were thoroughly trustworthy observers, and there is absolutely no doubt in my mind as to the correctness of the report in every detail.

McLean also reported a very interesting case to the New York Obstetrical Society, November, 1888, which was published in the *American Journal of Obstetrics*, xxiv, page 166. The patient had been in labor at term for six or eight hours, the waters fully evacuated. Examination showed the head above the brim, the cervix fully dilated, the position right occipital posterior. While endeavoring to rectify the position of the head manually in utero, air rushed into the canal (on account of excessive elevation of the hips) and the child immediately began to cry. The sound was so weird

that it made a profound impression on all present, the voice sounding as though under the mattress or down in the cellar. The crying was kept up for the several minutes involved in bringing the head around and down into the brim and extracting by high forceps. The extraction was very easy and the crying was almost without a moment's interruption during the process. The case was peculiarly interesting in that the crying commenced while the child was moving about freely in the uterine cavity, the walls being particularly flaccid. The mother and child came through normally.

THE PREVENTIVE AND CURATIVE TREATMENT OF OPHTHALMIA NEONATORUM.*

By Aaron Brav, M. D.,
Philadelphia.
Ophthalmologist, Lebanon Hospital.

Ophthalmia in the newborn baby is a serious disease that is responsible for a large percentage of our blind population. Often the ignorant midwife is the cause of its existence, but not infrequently we find it as a result of carelessness on the part of the physician. Every case of blindness in children resulting from this disease reflects discredit, not only upon the parents, but upon the medical profession. Ophthalmia neonatorum is both preventable and curable, and no child should be suffered to pay the penalty for the indiscretion of its parents by the sacrifice of its eyesight.

PREVENTIVE MEASURES.

When we consider the large number of blind persons, the need of careful preventive measures becomes self evident. They can be effectively accomplished without too much governmental interference, and without radical change in the organic body of society. A number of "isms" have of late been ushered into our social body that claim for their main objects the purification of the human species, as well as the total eradication of the so called social disease, all of which have some bearing upon the subject of prevention, and we shall refer briefly to their possible prophylactic value: 1. Eradication of the social evil by police force; 2, segregation and municipal control of prostitution; 3, teaching sexual hygiene to children; 4, eugenics; 5, municipal control and regulation of social diseases and special venereal hospitals; 6, woman suffrage and minimum scale of wages for women. These are some of the fads that are advocated as the panacea of our social diseases.

All these fads and fancies have one erroneous basic element, that human nature changes at once in quick response to new statutes, and all contain an element of danger, namely, the direct government control of the affairs of its individual constituents. The police force as a moral factor has been greatly overestimated, yet each "ism" is clamoring for the enactment of new laws that will force the public at large to submit to whatever follies it represents. Thus, for instance, a man when from whatever reason he is no longer able to enjoy the drink of a glass of stimulant, at once applies to the legislature to prevent the other man from indulging in any beverage which has not the approval of the Secretary of State. Ingenious humanity will always find some method of reasoning when it wishes to interfere with the affairs of men. The church did it in the past, science is trying to do it in the present. The church advised the killing of those unfit for heaven, science begins to advise the killing of those unfit for the earth. Eradication of that widespread social disease, gonorrhea, would of course be the ideal prophylactic measure. But this is a complicated problem. At present it is receiving considerable attention from both medical and legal sources, but no one has as yet been able to discover any possible means of accomplishing the object. Nor will various workers in this field ever unite. There is a psychic element involved which is not amenable to physical force. There is a variation in the degree of the sexual thermometer between those who seek the reform and the eradication of the disease, and those who seek the gratification of the sexual impulse, which lies at the bottom of all the difficulties in dealing with this problem. Disparity in age and temperament must be taken into consideration. It is easy for people that have reached the freezing point of their sexual appetite to discuss calmly matters pertaining to the sexual question (and the psychologist may even suspect some sexual pleasure in these mental gymnastics), but it is doubtful whether those whose sexual thermometer, as a natural consequence of health and youth and vigor, is still at the boiling point will be guided in their sexual life by a cold process of reason. But even the control or eradication of prostitution would not drive the gonococci out of existence. It is probably known to all that a considerable number of cases are due to promiscuous sexual life, outside of the house of prostitution, in private homes and public hotels, over which the guardians of the law have no control. The gonococcus has a wonderful power of adaptability. It lives in all climates, under all social and religious conditions. It is at home in a republic and in an absolute monarchy, and the chances are that it will survive the social revolution of woman suffrages, socialism, and even anarchy. Teaching sexual hygiene in public schools is another fad advocated by many well meaning reformers. It is impossible to imagine the exact amount of good such an innovation would do, but we infer from present observation that a general discussion of such matters by school children of both sexes would be a dangerous thing. Sexuality is a very attractive subject for discussion and is indulged in largely by the rude, vulgar element of society openly. The refined and cultured have always managed to keep out of it, except perhaps in veiled hints. It may be noted, however, that this modesty, or sham modesty if you please, has acted as a great iron wall against the lowering of a high standard. Wherever this conventional wall has been removed—excepting in a small circle of intellectuals—morality is on a low plane. Freedom of discussion of sexual matters among boys and girls would only

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tend to complicate matters. Calling attention of children to sexual impulses by teachers whose moral motives could not be measured, is not advisable. Teachers of sexual matters in colleges have not always been men of high moral standing, and we can all recall the moral tone that permeates the atmosphere of the genitourinary clinic. We are not inclined to attribute all sexual conditions to ignorance. Sexual perverts and inverts and those whose sexual impulse is overdeveloped are not confined to the ignorant class. Lawyers, doctors, and otherwise well informed laymen, students and scholars, are not immune. It seems that mankind knows the danger, but is willing to make some sacrifice upon the altar of Venus.

The modern psychic disturbance that manifests itself by a keen and abnormal desire on the part of the general public to see immorality displayed and paraded in its native ugliness is neither indicative of, nor conducive to a healthy moral state. There must come a reaction—and I hope speedily—when a display of culture and refinement will be more highly appreciated, and indecency and profanity will be relegated to the background of society.

Eugenic marriage means the breeding of human species by governmental selection instead of natural selection. Whatever may be said in its favor from the point of view of the eye specialist with reference to ophthalmia neonatorum, it has a negative value. This is not the time nor place to discuss the various aspects of this present day scientific fad; one point, however, must be mentioned, namely, that accepting all possible benefits that are asserted for this new system of improving the stock of humanity, its prophylactic value would be practically nil. Eugenic marriage means a governmental certificate to any profligate who was fortunate enough in his escapades to escape infection prior to his contract of marriage. It is no insurance against postmarital infection. On the other hand, it lays a ban perhaps on a good, foolish young man who unhappy in his first attempt has been so unfortunate as to contract a disease which according to some observers is responsible for the ailments that bring fees to the gynecologist. As a matter of fact, premarital purity is not sufficient assurance against ophthalmia neonatorum. It is my experience and probably the experience of others that ophthalmia neonatorum, especially the severer forms, occurs in parents that contracted gonorrhea after marriage and during the period of pregnancy. These give rise to those serious cases which cause blindness.

SHOULD VENEREAL DISEASES BE NOTIFIABLE?

Reporting venereal diseases as a means to eradicate them is also advocated in some circles, as well as the establishment of special hospitals; I fail to see its prophylactic value. I can see, however, how such an act would place a premium upon quacks and charlatans who would thrive upon these unfortunate patients, and extort large fees under the pretext of secrecy, the family physician would be overlooked, the sale of patent medicine would be increased, as some would rather doctor themselves than consult a physician who would report to a meddling board of health. The well to do would purchase secrecy, and in these days of competition a number of physicians would assent to such secrecy. On the other hand, the man whose standing in the community is low would overcome the difficulty by giving a fictitious name and address, or move to another street after he had been reported. From the point of view of statistics, therefore, it would be of limited value; still less would its value be to prevent infection. I cannot see the necessity for a special hospital, except for the scientific benefit of physicians who would be appointed to the institution. Be this as it may, I believe that after all the medical man must primarily be a physician and not a moralist, and under the present circumstances we must have recourse to the scientific methods at our disposal and let the moral aspect be worked out by those in charge of the morals of the community.

I do not favor too much governmental interference in the private affairs of men. I believe that education and the spread of information on the subject by a properly constituted body, either the board of health or the society for the conservation of vision, among the lay public, would greatly tend to reduce the danger of blindness from gonorrhea.

For the sake of record, cases of ophthalmia should be reported, but no further interference on the part of the board of health is advisable. The use of Credé's method, the instillation of a two per cent. solution of silver nitrate is essential in the prevention of this disease. Stronger solutions are not necessary and are often harmful. It is true that some physicians fail to avail themselves of this opportunity to serve the interest of the newborn baby. In fact some have delivered a number without ever meeting a real ophthalmia and naturally forget all about its existence until reminded unpleasantly by its occurrence. The majority of midwives do not use silver nitrate. Every registered midwife should receive a reminder, every three months, of the necessity of using Credé's method; in fact they could be supplied at little cost with a preparation and at the same time receive instruction written in their respective languages on the dangers of this disease, that ophthalmia neonatorum is not a cold in a baby's eyes, and as soon as they notice any discharge, they should call a physician. In taking the midwife into our confidence a great number of cases could be saved by early and prompt treatment. Obstetrical cleanliness is also a great factor in reducing the number of cases of ophthalmia. Preventive measures, however, are not always successful. It is true that not every case of ophthalmia is of gonorrheal origin; only the finding of gonococci in the discharge justifies such a diagnosis. From the practical viewpoint, however, we must consider every case of conjunctivitis in the newborn baby as of gonorrheal origin. Do not wait for a microscopic examination to corroborate your clinical suspicion. Give the child the benefit of the doubt. It is not necessary to ask the father to admit guilt; his admission is of little help, his denial absolutely unreliable. You must act on clinical evidence and remember that the sight of the child is at stake.

Be frank with your patient and do not underestimate the gravity of the situation. Always determine the exact condition of the cornea before giving a prognosis. Corneal involvement is of bad

prognostic omen. In trying to inspect the cornea, be very gentle lest you do harm. When the lids are swollen and do not yield to gentle manipulation, do not force them apart; better wait a day or two until the blepharospasm ceases and the swelling is reduced. If you have a nurse, instruct her not to use force or hairpins to separate the lids; it is dangerous even in the hands of the expert. Better tell the parents to wait a day or two before you give a good prognosis, and this you can do when the swelling is down and you find a clear cornea. If the cornea is already involved, the prognosis in the hands of a general practitioner is grave indeed. In the hands of the specialist the prognosis will depend upon the degree of corneal involvement.

Remember further that it requires three to four weeks to effect a perfect cure. Do not stop nor relax your treatment too early. I have seen cases in which, because the general symptoms had subsided, the physician became lax in his treatment, an exacerbation of the disease with corneal involvement followed, and the eye was hopelessly lost. Care in the management is the chief factor in success. As an antiphlogistic agent, cold in the early stages is indispensable. It reduces the swelling, lessens the discharge, and overcomes any existing blepharospasm. These applications must be applied religiously for the first three or four days, and constantly day and night. In addition to its good effect on the inflammatory condition, cold also acts as a gentle reminder for the steady application of your remedy and keeps in the mind of the parents the gravity of the disease, which they might otherwise be apt to overlook.

As to remedial agents, one fact is well to bear in mind, that it is not the kind of medicine that is important, but how it is applied. Antiseptic lotions must be employed, not because of their germicidal quality, but because of their cleansing value, so that it matters not what lotion you use. My own practice is to use a one to 10,000 bichloride solution to irrigate the conjunctival sac every half hour for the first two days, when the interval is increased. My chief aim is to remove every bit of discharge, and this solution constitutes merely an aseptic cleansing agent. The discharge in these cases reforms so quickly that it is necessary to irrigate very frequently in the early stages. I always use a small rectal syringe as an irrigator; it is the most convenient and most effective instrument. I never use the fountain syringe; it is too clumsy and sometimes difficult to control and has no advantages. I have seen the fountain syringe used by a young practitioner with fatal results, merely because of the difficulty of controlling it. The eyelids could not be well separated, for all efforts had to be directed to the control of the syringe.

The secret of success in these cases lies in the dictum, wash, wash, and wash again. This is the only safeguard against corneal infection. In addition, I also use a twenty-five per cent. solution of an organic silver salt to be instilled after each cleansing. The value of this drug is its heaviness, which gathers up some of the organisms, which are eventually removed by the repeated cleansing and irrigation. The only germicide that we must rely upon at present is silver nitrate. This drug has stood the test of time and cannot at present be displaced. Remember silver nitrate. Do not use any well advertised substitutes. None of the other silver preparations can be compared in effectiveness to this salt. Silver applications should be made daily by the physician himself. A toothpick wrapped over with a piece of absorbent cotton is a good applicator. You must avoid touching the cornea during the application. The conjunctiva is everted and gently brushed over with the silver solution. The silver soon forms an albuminate layer over the conjunctiva, imprisoning as it were in its meshes the gonococci, which are soon removed with the shedding of this layer in the discharges, and are then easily washed away during the process of irrigation. The swelling, after a few days, is reduced and the discharge is lessened. I am in the habit of following this treatment for one week, when I discontinue the bichloride solution and substitute a solution of zinc sulphate, one grain to the ounce, as an irrigating lotion when the conjunctival sac is washed every two or three hours. I do this for the reason that very often there is a mixed infection which readily yields to the zinc solution. I employ this for one week in combination with silver. By this time if no corneal involvement is present, the eye is in a quiet state. I follow this treatment now with a saturated solution of boric acid three or four times daily for about two weeks, when the patient is ready to be discharged. Occasionally, however, the condition, as a result of some neglect on the part of patient or physician, may be complicated with corneal involvement, when the treatment must follow a decidedly different course. Once corneal complications are suspected, it is best for the interest of the child to turn the case over to a competent ophthalmologist, for corneal complications in the hands of the general practitioner are sure to result in total blindness. It is much easier to prevent corneal complications than to cure them. The experienced man, however, may obtain fairly good results and save useful vision even where corneal complications are present where the general practitioner would invariably fail.

917 Spruce Street.

THE ALBUMIN REACTION IN THE SPUTUM.

Its Lack of Clinical Importance

By W. Milton Lewis, M. D.,

Baltimore.

From the Laryngological Department of the Medical Department of Georgetown University and Garfield Memorial Hospital.

Biermer (1) called attention, in 1855, to the presence of albumin in the sputum in various pathological conditions, and described a method for its demonstration. He diluted the sputum with water, filtered, acidified, and then boiled it. He announced, as the result of his investigations, that a definite relationship could always be shown to exist between the cellular content of the sputum and the amount of albumin present. These results do not seem to be in accord with those of Renk, who was not able to demonstrate albumin in all cases, and notably in chronic bronchitis, in which he found it quite constantly absent.

In 1903, Wanner (2), following a somewhat complicated technic, stated that he had demonstrated albumin in every sputum examined. His method was to dilute the sputum with two per cent. acetic acid solution in order to precipitate the mucin, neutralize the excess, add sodium chloride, and boil. The precipitate was then filtered off, washed with boiling water, alcohol, and ether, dried, and weighed.

Putrefactive changes, by means of which the protein molecule is released, have been offered as a possible explanation of the presence of albumin in the sputum, but, in a paper published in 1911, Roger and L. Valensi (3) contradicted this, calling attention to the fact that they have worked only with *fresh sputa*, and that they have never found albumin present in the sputum of either acute or chronic bronchitis, although it is practically always present in pulmonary tuberculosis, pneumonia, passive congestion, and pulmonary edema. They offer as a diagnostic point of value, that if albumin is absent on two successive examinations, in a case of suspected tuberculosis, it is practically certain that pulmonary tuberculosis does not exist.

Kauffmann (4) finds albumin present in active pulmonary processes, pneumonia, edema, and congestion, but absent in chronic bronchitis, and suggests that a positive reaction in doubtful tuberculosis speaks strongly for an active pulmonary process, while a negative test, on the other hand, suggests a healed lesion.

Goodman (5) calls attention to the presence of occult blood in the sputum, and suggests that the albumin reaction may be due to the presence of the blood. He fails to explain a positive reaction in fifteen of his cases in which it was not possible to demonstrate blood, also a negative reaction in four cases, notwithstanding the presence of blood in amount sufficient for demonstration.

Ridge and Treadgold (6) describe a series of 2,000 cases, in which albumin was present in 96.4 per cent. of the bacteriologically proved cases of tuberculosis, and absent in sixty-eight per cent. of the cases in which tubercle bacilli could not be demonstrated. In a second series of cases, 164 in number, reported by the same authors, the albumin reaction was positive in 98.9 per cent. of bacteriologically proved tuberculosis, and negative in fifty per cent. of those cases in which tubercle bacilli could not be found. They state that, of the cases in which tubercle bacilli and albumin are both absent, thirty-two in number, twenty-five were of bronchitis, two of bronchiectasis, one of laryngitis, and four of suspected tuberculosis, though in one case at least, the process was certainly not an active one. These authors furthermore assert that a fairly definite relationship exists between the presence of albumin and the cellular content of the sputum, thus corroborating the pioneer observation of Biermer.

Spiers-Fullerton (7) has called attention to the fact that, although albumin was present in a large number of tuberculous cases, it was also found present in acute bronchitis, pneumonia, and bronchiectasis, hence he considered the test of but little practical value.

In a recent article on this subject, Holm and Himmelberger (8) called attention to the fact that the value of the test depends, not so much upon the presence of albumin, as upon the amount which is found.

Because of the somewhat contradictory findings of those who have studied this question, and of the value to be attached to any method aiding in the early diagnosis of tuberculosis, the writer has undertaken the study of the sputum in a series of cases, including bacteriologically proved tuberculosis clinical tuberculosis but no bacilli found, various other pulmonary and cardiac conditions, general and surgical diseases, and, finally, perfectly normal individuals, if we except the so called American catarrh. The material for these examinations has been secured from the wards of Eudowood Sanitorium, through the courtesy of Doctor Sloan and Doctor Bacon, from the wards of Mercy Hospital, through the courtesy of Doctor Smith, and from various private sources. The method followed was that described by Lesieur and Privy (9).

The sputum was thoroughly mixed with normal saline solution, acidified with three per cent. acetic acid, filtered through wet filter paper, and tested with heat and with cold nitric acid. The sputum was examined in each case on the day secured from the patient. Albumin was found in the sputum from *every single case* examined.

The reaction was most marked in a case of chronic bronchitis and in a case of suspected tuberculosis. In neither case could tubercle bacilli be demonstrated, notwithstanding the fact that prolonged search was made.

The writer concludes that the demonstration of albumin in the sputum depends upon the presence either of albumins *per se*, derived from the blood serum, or of corresponding substances which have been liberated as a result of cellular destruction. Should this assumption be correct, one would expect to find albumin present in the sputum from practically every pathological condition involving, either primarily or secondarily, any portion of the respiratory tract, also in those essentially normal individuals who are the victims of the so called American catarrh.

The writer is forced to the conclusion, therefore, that an examination of the sputum for albumin is of no practical importance, so far, at least, as the diagnosis of tuberculosis is concerned.

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230 West Lafayette Avenue.

HYPERTHYROIDISM.

Its Control by the Röntgen Ray.

By Edgar Birdsall, M. D.,
Glens Falls, N. Y.,
Roentgenologist, Glens Falls Hospital.

Hyperthyroidism, exophthalmic goitre, Graves's or Basedow's disease, is proving to be a most fruitful field for Röntgen therapy. This fact should be

known by every physician, as the disease is a most serious one. The removal of a portion of the gland has met with some success, but this, even in the hands of the most expert surgeons, has been accompanied with a mortality of from twelve to thirty per cent. and is an operation which the average surgeon hesitates to attempt. The Mayos, of Rochester, Minn., have met with greater success than other surgeons in this country and assert a lower mortality rate than mentioned above, but unfortunately very few surgeons have had such gratifying results. On the other hand, it is maintained by eminent authorities that thirty per cent. of all cases undergo spontaneous recovery. Be this as it may, we have no right to neglect these cases in the hope that they may be in this latter class.

Surgery, however, has pointed the way to the use of Röntgen therapy by demonstrating that a reduction in the size of the gland, thus decreasing the amount of secretion, will produce a cure. In other words, hyperthyroidism is the result of a chemical intoxication induced by a hypersecretion of the thyroid gland. With this knowledge, x ray treatment would at once suggest itself to the röntgenologist, as the glandular structure of the body offers least resistance to the rays, and great success has been attained in the treatment of enlarged glands in other parts of the body.

It has been shown by Greenfield that the changes in the gland are those of an organ in active evolution, viz., increased proliferation, with the production of newly formed tubular spaces and the absorption of colloid material which is replaced by a more mucinous fluid (Osler).

The therapeutic action of the rays on the thyroid gland is a reduction of secretory activity, induced by the atrophic changes and obliterating endarteritis, resulting in a lessened blood supply to the gland. Thus the same results are obtained as by removal, but with this difference, that with Röntgen treatment the amount of the secretions can be reduced to normal with accuracy, while the surgeon never knows exactly how much of the gland it is necessary to remove to accomplish the same results. Treatment is persisted in until the secretions have been restored to normal, which is evidenced by a cessation of the symptoms.

The tachycardia receives the first benefit, even before there is any noticeable reduction in the size of the gland. The pulse rate is perceptibly reduced after the first few treatments. The exophthalmos is but little influenced, often not at all. The glandular enlargement is always reduced, but may not resume normal size. This, however, is of little importance as long as the distressing symptoms are abated.

It is said that the Röntgen cure is symptomatic and that there will be recurrence. This is sometimes true, but is also true of surgical interference, as the gland has been known to restore itself. A few more x ray treatments, however, soon restore the proper balance and the symptoms are again abated.

The experience of röntgenologists over a period of the last six or eight years demonstrates that this method of treatment is as efficient as removal and is accompanied by none of the dangers of the latter. Treatment covers a period of from two to six months

Case I. Miss H., white, aged twenty-six years, referred by Dr. C. in July, 1906. Family history negative as to goitre. Had been treated for hyperthyroidism for the previous two years. The glandular enlargement was marked. Exophthalmos and tachycardia both well marked. The pulse, sitting, was 130. There was dyspnea on the slightest exertion.

X ray treatments were given twice a week for six weeks, when a slight erythema appeared. A tube of medium hardness was used at a distance of twelve inches from the skin for ten minutes. The present more accurate methods of measuring doses were not then in general use. There was an improvement in the pulse rate after the sixth treatment, the count at that time being about 110. There was less nervousness and the patient was in much better spirits. At the end of the next three weeks, or at the time of the appearance of the erythema, her pulse rate was 85. The gland was about one half its former size; dyspnea, except on going up a flight of stairs or similar exertions, had disappeared, and the patient had gained five pounds in weight. No improvement in the exophthalmos could be noticed. Treatment was then discontinued and the patient requested to return in four weeks, when all evidence of the erythema had disappeared. She did not return. I learned that she had married. About a year later, her physician told me that she had just given birth to a child; that the labor had been prolonged (forty-eight hours); and that she had been under chloroform during delivery without any ill effects. She is well today and has had no recurrence.

Case II. Mrs. B., white, aged thirty years. Not referred. Family history negative as to goitre. Had been married for four years. Had no children. Upon examination found a slightly enlarged thyroid gland involving only the middle lobe. The heart action was rapid, impulse forcible, area of cardiac dullness increased slightly to the left. Slight hypertrophy, no dilatation or murmurs. There was slight dyspnea. The pulse was 100. The exophthalmos was not marked. General physical condition was good.

X ray treatments were given every other day. The rays were projected from three directions, anteriorly and laterally, though no two positions were exposed on any one day. A filter of heavy sole leather was used. The tube penetration was from 6 to 8 Benoist and the quantity was controlled with a radiometer. Two series were given, each consisting of 1.5 erythema dose. At the end of the second series the glandular enlargement had disappeared. The pulse rate was normal. There was still slight exophthalmos. Treatments were then discontinued and the patient was discharged. She has since removed to another city and I am unable to state as to recurrence.

Case III. Miss G., aged nineteen years, referred by Dr. D. No family history of goitre. Heart action very rapid. Pulse rate 120. No hypertrophy or dilatation. There was marked exophthalmos. The glandular enlargement was marked and involved all lobes.

This case has just completed the first series with the same technic employed in Case II. The pulse rate at this time is 85. The circumference of the neck over the centre of the goitre was reduced one inch and a half. I am waiting for all danger of an erythema to pass before beginning the application of a second series.

Two other patients discontinued treatments for reasons unknown, before any positive results had been attained.

THE SURGICAL RELATIONSHIPS OF MOUTH INFECTIONS.*

By Thomas B. Hartzell, M. D., D. M. D.,
Minneapolis,
Professor of Oral Surgery and Pathology, College of Dentistry; Research Professor of Mouth Infections, School of Medicine, University of Minnesota.

The varied relationships of constitutional infections arising from primary foci in the oral cavity have engrossed my entire attention for several years, and it is the surgical side of the question that I will consider. I will, therefore, dwell for a few moments on the surgical possibilities of mouth infection.

There is no question in the minds of any of us who have investigated the bacterial flora of the human mouth, that the possibilities of all kinds of infections are ever present. Almost every known type of pathogenic organism finds its way, sooner or later, into the oral cavity. Many of them make their permanent residence there. The skin and mucous membrane which protect the balance of the body signally fail of their office here. This is because the teeth in erupting through the mucous membrane burst that membrane, and its continuity is never restored. The mucous membrane ending abruptly about a line below its surface, thus leaves a free margin, creating a delicate crevice between the tooth surfaces and the surrounding tissues, which is a door through which inoculations can occur. The bacterial flora on the tooth surface is always great in the mouth of every individual, unless special care and attention is given the tooth surface. From this bacterial coat, incursion may constantly be made into the crevice and thence into the tissues. Thus, as a rule, every individual has to a greater or less extent always present on the tooth's surface at this unprotected margin, the potential for the deep infection of the surrounding tissues. In a number of recent examinations of freshly extracted living teeth, we find bacteria distributed for a considerable distance in the peridental membrane where the tissues seem to be in a moderate state of health and present no lesion to account for the presence of bacteria. Their presence in the tissues is readily explained when one considers the fact that where the mucous membrane ends abruptly, there are small open channels a line below its surface, leading into the vascular network of the tissues. These channels are readily demonstrable by means of a stream of oxygen gas discharged under the gum's free margin. It is these channels that afford paths for infection, which incursion is constantly being made from the tooth surface. This infection gains ready access through the glandular structures in the pericemental tissues to the porous cellular bone surrounding the teeth and thence into the lymphatic and general circulation. The first effect of this bacterial incursion is to create a mild gingival inflammation. This mild gingival inflammation is succeeded by a more intense cellulitis, with the development of pus.

This pus is disposed of in two ways. By far the greater part escapes over the edge of the mucous membrane into the oral cavity and is ingested. But many microorganisms are driven directly into the tissues by the intermittent application of force in mastication. This intermittent force causes the teeth alternately to rise and sink in their sockets. This rise and fall of the tooth, which in most mouths happens thousands of times a day, makes certain that a portion at least of the infectious material surrounding the tooth in the deep crevice will be driven into the broken bloodvessels and lymphatics of this locality. These microorganisms go directly into the tissues and small bloodvessels in the pericemental structures. These paths lead directly into the circulating blood. The glandular structures demonstrated by Doctor Black become involved, and a part of this bacterial growth is carried into the lymphatics and lymphnodes of distant parts of the body. The weight borne in twenty-four hours by the grinding or morsal surfaces of the teeth, the author estimates to be five thousand pounds a day, and it is the elastic cushion of peridental membrane which, by permitting the teeth to sink into their sockets and then to rebound, protects the alveolar process from rapid absorption and the teeth themselves from cleavage or splitting. The up and down movement of the teeth in their sockets under the enormous application of force is a factor favoring the further incursion of bacteria into the tissues, thus insuring slow inoculation of a certain quantity of any microorganism which happens to have lodged in this crevice.

Where osteomyelitis occurs in the bone of the socket, the infected area rapidly increases. The circumference of a normal denture is about thirty linear inches, and if a pyorrheal condition exists under the gum margin for one eighth of an inch, we have one eighth of thirty, or three and three fourths square inches of absorbing surface. This, however, may be greatly increased as the tooth's socket becomes destroyed, and the area may easily become double that. The dental abscess occurring around the root ends of teeth with dead pulps, is an additional source of systemic infection, and the porous character of the bone, together with the constant make and break in the application of force in mastication, enables the existence of such an abscess without symptoms of pain and soreness to drain for months and even years, thus affording a constant flow of bacteria into the circulation. The recent examination of pus taken from blind dental abscesses, has revealed the presence of both aerobic and anaerobic forms of streptococci, and it is this blind dental abscess and the accompanying pyorrhea pocket which eventually, by their constant inflowing streams of streptococci, break down resistance of many individuals, so that when they are subject to stress of any sort, the toxin habit established by these constant streams of infection makes it impossible for them to override disease. This explains many a case of death from comparatively slight surgical operations, operations undertaken in the best of environment and often trivial in their nature.

The metastatic possibilities of these seemingly trivial mouth infections have not, until very recently, been apprehended by either the dental or medical profession. That their importance is far greater than has hitherto been apprehended is well illustrated by an intensive study of eight cases re-

*Read before the Academy of Medicine, New York, February [illegible]

cently made by the author. In these eight cases, abscesses and pyorrhea pockets were located by rontgenograms.

CASE I was that of an individual who had suffered for nine months from multiple joint infections which necessitated his remaining in bed most of the time. No adequate source for his infection had been discovered. All treatment up to the time the individual was seen by the author had been of little or no benefit. None of the usual sources of infection seemed present; hence, the radiographs. In order to obtain the material from the sockets and root ends of the abscessed teeth with as little contamination as possible, the following technic was adopted: The mouth was thoroughly and vigorously scrubbed with hydrogen dioxide, followed by alcohol. The teeth in question were dried and coated with Churchill's tincture of iodine. Sterile gauze was carefully packed around the teeth to prevent contact with saliva. An actual cautery was then inserted under the gum margin to destroy as far as possible whatever of bacterial growth was free under the gum margin. This was again followed with a full application of iodine. The teeth were then immediately removed from their sockets and the root ends nipped off with rongeur forceps and dropped into culture media, first taking control smears for comparison with whatever might develop in the culture. This technic was followed carefully in the eight cases. In the first tooth removed in Case I, only Micrococcus catarrhalis was isolated and as this soon died out in culture, we could not study it further. In the same mouth, however, a second abscessed tooth was removed from which was isolated a hemolytic streptococcus. From this a vaccine was made which was administered to the patient for six weeks. When first seen, the patient could not get his shoes upon his feet nor raise his hands above his shoulders. At the present time, he is able to walk, raise his hands twelve to fifteen inches above the head, and the swelling about his joints is almost gone.

CASE II. Woman, who had been in bed for eighteen months, whose family history was good, and whose personal history was excellent. The diagnosis was chronic arthritis deformans. When first seen, she was unable to walk and the joints of the shoulders, elbows, wrists, and fingers were all swollen. Sacroiliac joints were swollen and tender, as well as the knee and ankle joints. Her finger joints were swollen so that the skin was tense; the bases of the finger nails and finger ends were blue, cold, and clammy. The patient was suffering constant pain. Radiographs showed abscesses present in the lower mandible. The same technic for removal of the teeth was followed in Case II as in Case I. Both streptococci and staphylococci were found in the tips of the sockets. Vaccines were made of both staphylococci and streptococci, which vaccines were administered for some time. The dose in the case of the staphylococci was raised to 250 million; of the streptococci, to twenty million. The patient suffered increased pain and tenderness for two or three days after every dose of vaccine, which pain and tenderness receded from the fifth to the sixth day, leaving the joints somewhat improved. The patient, after two months of treatment, was able to sit up in bed and to walk when she wished. The finger joints could be flexed considerably. The wrist joints became movable again and the swelling of the fingers and hands went down about one half. The patient gave every indication of making continuous improvement and a permanent cure.

CASE III. Man; when first seen by the author, his mouth was exceedingly septic. His teeth were very loose and the alveolar process at the gum margin was exposed. The mouth was cleansed as well as could be done, though there was little hope of the patient's recovery. Examination and smears from the alveolar process and gums showed streptococci and fusiform bacilli in great numbers. Patient very shortly after died and in the post mortem examination cultures were taken from the body of the lower jaw and also from the heart's blood. Streptococci were found in both situations.

CASE IV was that of a man aged forty years. When first seen in the hospital, the patient exhibited a mild febrile picture, temperature rising and falling. He slowly became more and more septic. Absolutely no lesion could be discovered to account for the septic condition, until the jaws were examined, when it was found that an area of necrosis existed around two central incisors. Blood cultures were made by Professor Larson and Professor Barron, of the medical department of the school of medicine of the University of Minnesota. Smears and cultures were made from the necrotic area around the teeth and revealed the presence of fusiform bacilli in great numbers. Blood culture also produced a rich flora of fusiform bacilli, showing the direct relationship between the mouth lesion and the general septic condition. A careful post mortem examination, conducted by Professor Robertson, of the department of pathology of the school of medicine, Professor Ries, and the author, revealed absolutely no lesion, except the area of necrosis around the central incisors of the upper jaw, and this had spread, when death occurred, to the whole palate.

CASE V was that of a woman aged forty years. The diagnosis was chronic arthritis deformans. The mouth was exceedingly septic, containing half a dozen abscessed teeth. The teeth were removed, the author following the same technic as in Cases I and II. The examination resulted in the finding of a nonhemolytic streptococcus in the dental abscesses. In this case, the joint infection had existed for so long a period of time that little progress, if any, was made toward recovery.

CASE VI was that of a man aged thirty-five years, who suffered an acute joint infection of the sacroiliac, lumbar, shoulder, and wrist joints. Inflamed tonsils were removed. Patient made fair progress for two weeks when repair seemed to cease. Radiographs revealed abscesses in right lower molars and left upper bicuspids. Extraction of the right lower molar, following the same technic as in Case I resulted in the finding of streptococci, and the removal of the tooth and evacuation of the abscesses started the patient on toward repair.

CASE VII was that of a man aged sixty-eight years, in failing health. The urine contained albumin and many casts. Radiographs revealed presence of abscesses and pyorrhea pockets. Evacuation of the abscesses by surgical means, burring through the alveolar process and curetting vigorously, together with the obliteration of pyorrhea pockets, resulted in rapid recovery, both albumin and casts now being absent.

CASE VIII was that of a man aged fifty-five years with the history of ulcer of the stomach, which obtained over a period of years, patient getting better now and then, having a recurrent breakdown in the mucous membrane of the stomach and discharging blood in the stools. The mouth presented an exceedingly septic condition. The abscessed teeth were removed and many pyorrhea pockets around the teeth which were worth saving, were stamped out of the method of root planing and curettage of the alveolar process. The patient made a fairly rapid recovery. In two months, the tenderness in the abdominal wall ceased, and in four months the digestion had so improved that he was able to eat anything that he craved and took up his work with the energy of a man of thirty years.

210 DONALDSON STREET.

INTESTINAL PARASITES (STRONGYLOIDES INTESTINALIS) WITH UNUSUAL SYMPTOMS.

BY MORRIS I. MOSS, M. D.,
Philadelphia,
[illegible] Assistant [illegible]
Mount Sinai Hospital.

The question of intestinal parasites is quite old and well discussed in the medical literature of today. There are, however, certain varieties of parasites which attack the inhabitants of certain districts, while they are rare in others. Among these, Strongyloides intestinalis holds a fairly prominent place in the diseases of the tropical and subtropical regions. (1) A few cases have been reported in the northern countries of Europe, Belgium, Holland, England, and Germany. In China, Japan, and India, local outbreaks of this disease have occurred;

and the invasion of Porto Rico by this parasite has been very common.

Strongyloides intestinalis (2) is about two to three mm. long by thirty to seventy microns broad with an esophagus one fourth the length of the body. It has a double uterus, each horn of which contains from three to six segmenting ova which escape through the vulva situated in the posterior third of the body. These eggs are deposited in the intestinal lumen or in the intestinal mucosa of the host.

The source of infection has been attributed to contaminated food or drinking water, also to the entrance of the parasite through the skin. It is a fact that the warmer the climate the more frequently does the disease occur. Powell, of India, found this parasite in over seventy-five per cent. of the cases of anemia in that country.

The symptoms of the disease are varied, depending upon the severity of the infection. Thus, cases have been reported with absolutely no symptoms and others with the most violent gastrointestinal disturbances. As a result, some observers have alleged that the parasite is harmless; others, that it is exceedingly injurious. Of a number of cases reported in the tropics, it was found that if the parasite is present in large numbers, it may cause clinically an intermittent diarrhea resulting from a catarrhal inflammation of the small intestines. The real clinical diagnosis can be made only by means of a microscopic examination of the feces.

Looss (3) has shown that this condition is usually associated with an anemia, and that in uncomplicated cases a high grade of leucocytosis may be found. Thin (4) observed that together with the gastrointestinal disturbances, patients have complained of difficult breathing and of painful deglutition. Strong (2) describes a peculiar facial expression which is characteristic of this disease. Peiper, of Greifswald, states that certain toxins (poisons) are given off by these parasites which cause a general toxemia, capable of producing the most unusual symptoms. Perhaps the peculiar symptoms in this case may be accounted for in that way.

CASE. D. B., a male patient, aged fifty years, was admitted to the medical ward of the Mount Sinai Hospital, July 24th, complaining of constipation alternating with diarrhea; frequent attacks of dyspnea and cyanosis, frequent and painful urination, and burning sensations of buttocks and thighs. *Family history:* Father died at sixty years of age of unknown cause. Mother died at ninety years of age of apoplexy. Has four sisters, youngest thirty-five and oldest sixty, living and in good health. No history of cardiac, renal, pulmonary tuberculosis, or malignant disease. *Personal history:* Patient was born in Southern Russia and had been in this country for the last eighteen years. Married; wife, fifty years of age, living and well. Had four children and a number of grandchildren who were living and in good health. Was in business, but never did any hard work, owing to the peculiar attacks of dyspnea for which he was treated during the past nine or ten years. Did not drink tea, coffee, or alcohol and denied venereal infection. Did not remember any diseases of childhood. Said he had had a number of asthmatic attacks during the last eight or ten years, which his physician attributed to cardiac dilatation and from which he always recovered under rest and medication. Otherwise, patient enjoyed fairly good health until onset of present condition. *Present illness:* About five days before admission the patient manifested an attack of dyspnea. This lasted for about a day and was followed by constipation alternating with diarrhea. He experienced great difficulty in urination and felt a burning sensation over buttocks and thighs.

Condition on admission: Temperature, 97.6° F.; pulse, 68 (weak, irregular in force and rhythm); respiration, 28; complained of severe pain in rectum following defecation. Face, somewhat sallow with muddy complexion; malar bones prominent; conjunctivæ and fingertips pale. Pupils equal; reacted equally and normally to light and accommodation; sclera of slightly yellowish tinge; marked arcus senilis (corneal opacity). Very much emaciated. Ears and nose normal. Tongue slightly coated. Caries of the teeth. Throat and tonsils normal. Neck normal; no pulsations nor glandular enlargement. Chest expansion, poor but equal on both sides. Vocal fremitus normal. Lungs resonant throughout, excepting for a few areas of hyperresonance showing local emphysema. Vesicular breathing over entire chest. No rales audible, and no visible abnormalities present. Area of cardiac dulness extended from middle of sternum to midclavicular line and to the upper border of the third rib. The apex beat was not visible, but palpable at the fifth interspace, one half inch to the left of the midclavicular line. It was slightly diffuse, weak and irregular in force and rhythm. On auscultation, a weak systolic murmur was heard over the apex, which was partially transmitted to axilla. No murmurs audible at base. Abdomen, poorly developed and markedly emaciated. Skin over it, dry at some points, presenting a gooseflesh appearance. A ventral hernia was present at umbilical region. Genitals, normal. Rectal examination revealed a peculiar spasm of the sphincter ani (sphincterismus), otherwise no abnormalities. Prostate not enlarged. Extremities and reflexes normal.

On the seventh day after admission patient was transferred to the surgical department on account of the sphincterismus which became violent. Patient could not control the spasms, and forcible dilatation of the sphincter ani had to be performed under ether. No lesion, either around the anus or in rectum could be discovered. Patient recovered from the ether and for the following few days felt fairly comfortable, but on the third day the spasm renewed itself and was even more marked than before. Patient became cyanotic on standing, and this was followed by dyspnea and symptoms of pulmonary edema. Heart sounds were feeble, respirations shallow and hurried, and on auscultation moist bronchial crepitant and subcrepitant rales could be heard. Strychnine, atropine, and caffeine were administered and wet cups applied. Oxygen inhalations were also given and patient recovered from the attack.

The urine was examined and found to be alkaline in reaction, of light amber color, with a specific gravity of 1025. Albumin was present in small amounts, but neither sugar, indican, bile, blood, nor casts could be detected. Many triple phosphate crystals and few epithelial cells were present.

Blood examination: Hemoglobin, 50 per cent.; red blood cells, 3,730,000; color index, 0.7 (plus); white blood cells, 15,600 (leucocytosis); polymorphonuclear, 60.66 per cent.; small mononuclear, 22.53 per cent.; large mononuclear, 0.66 per cent.; transitional, 1.33 per cent.; eosinophiles (normally 1 to 2 per cent.), 12.66 per cent.; mast cells, 2 per cent. No malarial parasites.

Owing to the marked eosinophilia, over twelve per cent., Dr. S. L. Cherry, pathologist of the hospital, suggested examination of the stools. On the following day a fresh specimen of feces was examined and found to contain living parasites of Strongyloides intestinalis, together with a large amount of mucus.

Patient was starved for twenty-four hours and castor oil administered. Oleoresin of aspidium (Filix mas) was given and followed a few hours later by a calomel-saline purge.

Two days later, the stools were again examined and the same parasites in the most active state were found. Thymol in large doses was given, but very little if any effect obtained. During the following two weeks, patient had several attacks of pulmonary edema. His general condition became progressively worse and death occurred during an attack.

Considering the foregoing, it is obvious that in absence of definite physical findings, all the symptoms present may be attributed to this parasite. It

is interesting to note that in no group of such cases was there a symptom complex so uncharacteristic as this patient presented.

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1304 SOUTH FIFTH STREET.

AUTOSEROTHERAPY IN FIBRINOSEROUS PLEURISY.

Do the results thus far reported warrant its general adoption?

BY HENRY M. FISHER, M. D.,

Philadelphia.

To Gilbert, of Geneva, is generally credited the first suggestion of treating serous effusion into the pleural cavity by the injection under the skin of the patient of portions of his pleural serum, and at the International Congress at Rome, in 1894, this author reported a number of cases he had treated in this way and recommended its more general use on account of the good results he had obtained. A little later, Enriquez and Gaultier explained and recommended the same treatment. Gilbert recommended the autoinoculation of one to two c. c. of the serum at intervals of one or two days and advised, in all, six inoculations. Other authors recommend five c. c. for each inoculation.

The results obtained from this treatment are, it is said, almost immediate sensations of relief, notably from dyspnea and oppression, often observed within the first twenty-four hours; a great increase in the secretion of urine and, along with this, a marked and rapid diminution in the serous exudation; and, lastly, a complete resorption of the fluid, sometimes within six to ten days, sometimes more gradually. The authors above mentioned assert that an increased diuresis is always observed. No reaction occurs, according to them, except in cases of tuberculous pleurisy, when there is likely to be a rise in temperature of one fifth to one half degree C. within the first twenty-four hours.

Many investigators in France, Italy, and Germany have in the past twenty years tried this method of treatment with varying results. In 1909, Marcou (1) reported eighty-two successful results among eighty-three cases. Montgour and Gentés (2) however, stated that they had eighty-two per cent. of failures in nineteen cases thus treated. Tschigageff (3) and Schnütgen (4) both report favorably upon this method of treatment. The latter reports fourteen cases successfully treated out of fifteen, and says that in the fourteen there was complete resorption of the fluid within two weeks. He maintained that there is not the same danger of the formation of thick fibrinous exudation in the pleura in these autoinjected cases as where paracentesis has been performed.

Anglada and Roger (5) report entire failure of the treatment in four cases—two of which proved to be tuberculous by guineapig inoculation. Cantineau (6) examined this method of treatment and declared that the increased diuresis so constantly reported after the autoinoculations of the pleural serum, is at least equally marked after the withdrawal of the fluid with the trocar and cannula, and that the chest clears up sooner in most cases by the latter method of treatment. Szurek (7) found positive results in only three out of eight cases.

Of American observation, I may mention the three cases of tuberculous pleurisy treated by this method by Dr. J. Rudisch (8), where the results appear to have been favorable, and the twelve cases treated by Dr. Maurice Fishberg (9), of which nine were distinctly benefited.

Doctor Fischberg cites the investigations of Eisner (10) on inducing pleurisy in rabbits by the injection of sterile oil of turpentine into the pleural cavity, and then injecting the serum from the artificial pleurisy thus induced under the skin of the animal, when the number of leucocytes in the blood manifested a decided tendency to rise; and in cases of artificially produced tuberculous pleurisy, injections of the tuberculous exudate were always followed by a sudden and marked increase in the number of leucocytes, which lasted one day and receded just as quickly.

Audibert (11) cites the experience of Sicard and Galup, who reported that in the case of two ascitic patients, with simple atrophic hepatic cirrhosis, the intravenous injection of relatively large quantities of ascitic fluid stopped the production of the ascites and greatly improved the condition of the patients. At intervals of from ten days to two weeks from three to 500 grams of ascitic fluid were withdrawn and reinjected into one of the veins of the arm. The improvement was not marked until the fifth or sixth injection.

My own experience with this treatment has been confined to four cases; but, while the effusion was eventually absorbed, I can not say that results of the autoinjections were striking in my cases. Perhaps they were not repeated with sufficient frequency. The injections were made generally at intervals of one week, and I did not inject more than one c. c. at one time.

From a tolerably careful review of the literature of this subject, I conclude, however, that there can be little doubt that autoserotherapy in serous pleural effusion *does* have, in most cases, a very distinct effect in decreasing effusions. Whether this is due to the absorption of the "specific antibodies from the effusion into the general circulation, or of autolytic products of cell metabolism"—I am quoting from Doctor Fishberg's paper—the increased diuresis seems to be a fact proved by the experience of many careful observers. But, as eighty per cent. of all cases of simple fibrinoserous pleurisy show a tendency to spontaneous cure, it seems to me that the treatment might well be reserved for these cases where there have been repeated reaccumulations of the fluid, after tapping.

Paracentesis still seems to be the treatment necessary in cases of large effusions accompanied by great difficulty of breathing. The relief afforded to great and alarming dyspnea by autoserotherapy does not appear to be sufficiently rapid. If Schnütgen's observations as to the lessened danger of thickening of the pleura from fibrinous exudations where autoserotherapy is used, are gen-

orally confirmed, this treatment will probably be tried in many cases which would hitherto have been treated by paracentesis.

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1027 PINE STREET.

A NEW PSYCHOSIS.

By Siegfried Block, A. M., M. D.,
New York.

It is a well known fact that as civilization advances new troubles come, new disasters happen to our people, new diagnoses are made, and new methods of cure instituted. Out of all proportion to this increase of population is the rapid multiplication of nervous disease, especially the psychoses. One of the greatest factors in this increase of population in this country is immigration. It is also an established fact that over one third of our institution population is alien. Practically every kind of defect and insanity develops among our foreigners and it is no wonder that in such a prolific field a new complex may become evident. A study of forty foreigners has suggested for presentation, as an original contribution to psychiatry, an acute or subacute affection of the nervous system manifested by symptoms, varied in character, very similar to hysteria, but of quite definite origin, a great desire for malingering, and ultimate recovery.

Females seem to be especially predisposed, but male cases are also common. The third and fourth decades of life have presented most of the cases. All races seem to be affected, but, as might be expected, cases among Russian immigrants far outnumber those of all others. The exciting cause is poverty following the trip in the steerage compartments combined with grave disappointment. The symptoms are somewhat like hysteria with very frequent recurrences, which are almost like the first attack.

A short time after arrival, from one month to thirteen months in the author's cases, the patients begin to have headaches, to feel unhappy, seek seclusion, cry a good deal, and often speak of attempting suicide. Gradually a mild melancholia develops. Lack of memory for recent and remote events is alleged by relatives and friends. Actual dementia is often suggested. The patients often forget how to do simple sums like twelve plus fifteen, etc. Often it is stated that these people can no longer read or write. What appear as irrational acts may take place, as attempting to throttle a child, or commit suicide, etc. They continually talk about these things and make pseudoattempts to carry them out. At times the outbreak comes after acute excitement, as falling down a flight of stairs, etc.

The desire for physical exertion disappears and often these patients lie in bed, do not care to eat, and naturally lose a goodly amount of weight. The concomitant symptoms of drawn, haggard expression of the face, paleness, loss of appetite, weakness, low blood pressure, weak pulse, constipation, coated tongue, foul breath, untidy appearance, sleeplessness, etc., soon follow. Responses to external stimuli are delayed, and questions are answered very slowly and then in many cases only after strong efforts at reply are made. As in psychasthenics and neurasthenics, continual talk of the misfortunes of the sufferers is put forth. They talk of tumors of the brain, of tingling of fingers and toes, etc.

On careful examination, areas of anesthesia are found; these seem to be more marked over the flexors of forearms and legs. On repeated examinations these places may change. Some areas of hyperesthesia may be present. Sensations of heat and cold are normal. Pupillary reflexes are normal, but slow. Knee jerks may be increased, diminished, or normal. Even these may become different on separate examinations. Fine tremors of fingers, hands, tongue, and at times of the head are usually present. Hallucinations, delusions, or really irrational talk could not be elicited in a single case. Anemia is always present. Distraction from continued conversation is very evident. The desire to make themselves out as worse than they really are is seen in all cases.

When strong threats of deportation are made, many of the symptoms are removed. They prove their ability to add where before they were utterly a failure. They remember the name of the ship on which they came to this country, and the port from which they sailed. Under these conditions some of the anesthesias also disappear, and reasons for the irrational acts are explained. On the slightest provocation these patients are startled. The only symptoms that are not ameliorated by the threats of punishment, are those akin to psychasthenia and neurasthenia, the constant talk of the unfortunate condition. These patients desire much attention from their friends and use various subterfuges to obtain this end.

The prognosis, as stated before, is complete recovery in every case, although relapses may occur.

In conclusion, it may be stated that these cases present some of the phases of a mild catatonia, a mild manic depressive insanity, a hysteria, a neurasthenia, and a psychasthenia. Surely many of my readers have seen cases as here described, but placing them under one group as a new symptom complex is original.

For better understanding, three quite typical examples are given briefly. The writer will not go into the psychology of the subject at this time, it being very evident that coming to a new country where milk and honey are supposed to flow, where a last hope is shattered, where the influences of a new climate, new environment different from what was anticipated, perhaps for many years, poverty, and the many other up hill interferences with life as it is desired, may overthrow the already keyed up individual—keyed up to leaving his home and people forever on account of oppression and hardships of long duration.

Case I. Referred for diagnosis and treatment by a student at the Long Island College Hospital. A girl, aged

*Presented to the Brooklyn Neurological Society, February 11, 1914.

twenty-eight years, came to the United States from Russia, three months ago, perfectly well. Had no children's diseases, except measles at five years. For three weeks had been without employment. Since two weeks had crying spells; very excitable, sat alone and threatened to commit suicide; rapidly losing weight on account of refusing to eat or drink; anxious to tell every one of her trouble. Said she was unfortunate; blamed no one for it. Was pale, untidy in appearance, and looked terror stricken. Had no hallucinations, delusions, or bad habits.

There were areas of anesthesia over the flexor surfaces of arms and forearms, palate not anesthetic, heat and cold sensations normal. Eyes, knee jerks, and ankle reflexes absolutely normal. She dreamed very much at night but no nocturnal tantrums of any kind existed. No moments of terror or change of any of the symptoms mentioned have been found. She sometimes tried to malinger, and tried to make out her symptoms as worse. Occiptal headache seemed to be present all the time. When told that she would be sent back to Russia and punished, her symptoms would not change. Said 14+13 were 23 and 17+9=21, but when confronted by a special officer in uniform, who said he would send her back to Europe, she gave the correct answers. She stated that her condition was the result of her inability to obtain employment, and the longer she waited for work the worse she got. When work was given her she proved so incapable that she had to be discharged from two different places. Told the other employees of her troubles and sought their sympathy.

Case II. A seamstress, referred by Doctor Antonowsky, aged thirty-eight years, arrived from Russia eight months ago. Married, had three children and a laboring man as a husband. Two weeks ago was found attempting to throttle one of her children. We could not get a rational word out of her. She sought seclusion, liked to be made much of, was anxious to tell of her troubles. She said she attempted to kill her children and herself because she was in such dire straits (which was true). They were all near starvation. This could hardly be called abnormal. Many of us might do the same thing. She was anemic, pale, thin, from lack of proper food. As in the previous case she was anesthetic over both arms, front of chest, and from the lower two thirds of the thighs down. The palate was not anesthetic, pupils and reflexes were quite normal. There were a few areas of the body intensely hyperesthetic. She stated that she loved her children and her husband, and since she has received aid no irrationality has been shown.

After she had been examined a number of times by her own physician, she attempted to malinger by pretending that her memory was not as it ought to be. She had forgotten the name of the Czar of Russia, the port from which she sailed to this country, the name of the ship on which she traveled. But when confronted with deportation threats, she remembered everything.

Since this paper was presented she ran away from home (possibly a fugue) but was found and returned.

Case III. Referred by Doctor Feldman, man, aged forty years, came to this country two years ago; worked as a tailor until seven months ago when during a strike he lost his position. Two or three months out of work were followed by utter unhappiness, then no desire to look for work; crying spells telling of his unfortunate plight soon followed. For three weeks threatened to kill himself. Had grown very thin, ate very little, and would not wash himself. Had to be forced to get out of bed in the morning; refused several positions because they did not pay enough wages. Did not know from what city he came. Did not know the name of the ship on which he traveled or the price of his ticket. He would not tell how much 6+8 was. Said he forgot how to add. On threats, said 9+7=16, and 4+8=12, but a little while later said 5+8=11, etc. His forearms, legs, and neck were absolutely anesthetic, but when pricked with a sewing needle in the abdominal regional in the neighborhood of the umbilicus, he shrieked with pain—very much exaggerating an even hypersensitive area.

His pupils reacted rather slowly to light and distance, but after several trials seemed to respond better. There was no Romberg, Babinski, nor Achilles. The knee jerks were somewhat exaggerated. Palate was not anesthetic, and no contraction existed of visual field.

848 Greene Avenue, Brooklyn.

Therapeutic Notes.

Thymol as a Teniafuge.—Guillon, in *Presse médicale* for August 2, 1913, is credited with the statement that thymol will yield 100 per cent. of successful results in the treatment of tapeworm, and, provided a certain procedure in its administration is followed, it can be substituted with full confidence and even advantage for the teniafuge agents in ordinary use. In the hospitals of Indo-China, where thymol is used extensively, the method employed is as follows: The evening meal on the day before the treatment consists of milk. Next morning, three cachets of thymol (each containing 15 grains or one gram for male adults, 12 grains or 0.75 gram for women, and correspondingly smaller amounts for children) are taken at hourly intervals, followed, three quarters of an hour after the last cachet, by a saline purgative (one to 1.66 ounce or 30 to 50 grams of sodium sulphate). Alcoholic preparations and oils, including castor oil, are to be strictly avoided at this time. As with other teniafuge agents, the patient should not go to stool until a distinct need is felt. Generally the effects of the treatment are complete two hours after the ingestion of the purgative, and in the afternoon of the same day the patient may take a light meal consisting of milk and eggs, with the ordinary supper in the evening. The only unpleasant effect is occasionally a momentary slight sensation of burning in the epigastrium just after the ingestion of thymol. The efficacy of the treatment was illustrated in the case of a neurotic woman who vomited both the second and third thymol capsules as well as the purgative salt; in spite of the fact that only one capsule had remained in the alimentary tract, the parasite in its entirety was expelled the following night. In another case, four tenias were passed at once, and several months later recovery was still maintained. Guillon holds thymol to be the most reliable, the least dangerous when suitably administered, and the least expensive of all teniafuge remedies.

Value of Epinephrine in the Treatment of Whooping Cough.—L. C. Mulas, in *Semaine médicale* for October 29, 1913, is stated to have tried epinephrine medication in fifteen cases of pertussis. The dose, as originally recommended by Fletcher, was one to 3 drops of the one in 1,000 solution, every 3 or 4 hours, by mouth. In three of the author's cases, in which the treatment was carried out with especial rigor, recovery followed in two weeks. In the others, with one exception, cure resulted in three weeks or a little less. In one case, that of a young girl of twenty-three years, recovery was not as prompt, both by reason of a coexisting pulmonary tuberculosis and of insufficient doses of epinephrine. In no case was there a relapse—a good record in comparison with cases treated by other methods. No complications were observed in the entire series, doubtless, as remarked by Fletcher, because the vomiting usually accompanying the coughing spells, is prevented, a result tending to maintain a good nutritive state and hence to diminish the predisposition to complications. In two instances, in which rather large doses of epinephrine had been used, bloody streaks appeared in

the sputum, but these may not have been due to the remedy, similar streaks having been noted in another case before the epinephrine treatment had been begun. The beneficial effect of this drug in pertussis is ascribed by Mulas to improved elimination of toxins in the urine, to which may perhaps be added a direct action antagonistic to the pathogenic agent.

Tuberculin Treatment of Disseminated Chorioretinitis.—Haltenhoff, in *Revue médicale de la Suisse romande* for November, 1913, reports a case of this disorder in which injections of Béraneck's tuberculin yielded gratifying results. The patient, a young man, previously given mercury and potassium iodide without result, presented when first seen numerous foci of chorioretinitis, already partly in the atrophic stage, in the right eye, vision in which was reduced to 1/20. With the left eye, still hyperemic, the patient could only eccentrically count fingers at 0.5 metre, and the ophthalmoscope showed an evidently recent retinal infiltration. Though in fair general health at the time, the patient had previously been operated upon for fistula in ano and diseased coccyx. Injections of Béraneck's tuberculin continued, with but few interruptions, for over a year, were followed by a return of vision to the extent of 1/5 in the right eye and 1/3 in the left. Ophthalmoscopically, the involved areas were seen to be in the atrophic stage, but the optic nerves presented practically a normal appearance. Moderate use of the eyes for an occupational purpose was being indulged in. The author believes no other treatment could have yielded equal results.

Treatment of Hysterical Aphonia.—Citelli, in *Revue hebdomadaire de laryngologie*, etc., for December 20, 1913, is credited with the following simple expedient for the relief of this condition: Push the thyroid cartilage to one side with sufficient vigor to cause pain, taking the patient unaware. Almost invariably this will lead to an immediate verbal protest on the part of the patient.

Prevention of Alopecia.—Freshwater, in the *Practitioner* for October, 1913, discussing the hygiene of the hair, states that the liquid soap introduced by Hebra, to which thymol may with advantage be added as an antiseptic, is an excellent preparation for use in shampooing:

℞ Thymolis, ...gr. xv (1 gram);
Saponis viridis, } āā partes æquales
Alcoholis,..... } ad Oi (500 grams).
Misce.

In using this, a tablespoonful should be poured into the hollow of the hand, thoroughly rubbed on the scalp, and allowed to remain for a few minutes. The process being then repeated with a tablespoonful of tepid water, a lather is produced. The longer it is permitted to remain, the more the emulsifying properties of the soap are exerted. The head should then be rinsed with plenty of warm water. Being alkaline, Hebra's preparation tends to dry the hair. For very dry hair, the author recommends substitution of the following:

℞ Pulveris saponis castiliensis, . . 3iii (12 grams);
Sodii bicarbonatis, . . .3i (4 grams);
Olei rosæ, ... q. s.;
Aquæ rosæ, ...3iv (120 grams).
Misce.

A tablespoonful of this preparation should be placed in a basin of water, and will give an abundant lather.

After the head has been shampooed, the hair should be dried quickly and thoroughly, and a little almond or olive oil, perfumed if desired, rubbed on the scalp to take place of the fat removed by the washing. Upon then brushing the hair carefully, a fine film of the oil will be carried along to each hair. Too frequent washing, the author insists, causes the hair to become dry, brittle, and lustreless, and to break off short. He thinks there is reason to believe that premature baldness in men has become more prevalent since it has become usual to wash the head frequently and since the custom of greasing the hair has gone out of fashion. Shampooing should take place weekly in children, but only once every two or three weeks in adults.

Silver Nitrate Solution in the Treatment of Whooping Cough.—Ochsenius, in *Semaine médicale* for November 26, 1913, is stated to have applied a two per cent. solution of silver nitrate to the pharynx in 107 cases of pertussis, with decided benefit in eighty-four instances. The results were especially good when the treatment was begun within two weeks after the beginning of the disease, that is, during the period in which the infection is localized in the pharynx. Under these conditions, the silver salt appears to destroy the virus, or, where it does not, at least diminishes the secretion of mucus, thereby reducing the frequency of the coughing paroxysms. After a week's treatment there is noted, in general, a marked lessening of the severity of these spells, and the cough gradually loses its whooping character. Nearly always, in the third or fourth week, the cough becomes of the ordinary catarrhal type and tends to disappear. In the acute cases, the spasmodic stage of the disease can be either completely aborted or rendered much shorter. Even where the spasmodic cough has already been present some time, excellent results may be obtained if the lower respiratory passages have not become involved. In patients of the "exudative diathesis," on the other hand, the treatment sometimes fails.

The procedure followed in using the silver salt was to have the child held by an adult person, its head resting against the chest, the silver solution being then energetically applied to the pharynx by means of cotton wound around an applicator with tip bent at a right angle. The treatment is repeated on alternate days during the first two weeks of the disease. About the end of the second week a marked change for the better is generally noted. If the number of coughing spells fails to diminish, the applications are continued for another week. In nurslings applications should be made daily at first; in some cases the author used a one per cent. solution of the silver salt instead of two per cent. It is well to warn parents that on the days following applications a slight increase in the number of spells may be observed.

As an additional therapeutic measure in whooping cough, Ochsenius found nasal irrigations morning and evening with a 0.5 to one per cent. hydrogen dioxide solution distinctly effective. Secretion of mucus in the nasopharynx was thereby diminished.

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EDITORS

CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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ACTION OF DIGITALIS ON THE BLOOD PRESSURE.

When Janeway stated at the International Congress, last year, that "the dangerous increase in blood pressure from digitalis, as used in human beings, is a superstition without any basis of clinical fact," he confirmed the observations of numerous clinicians, among whom might be mentioned such authorities as Sahli, of Berne; Mayor, of Geneva; Josué, of Paris; Mackenzie, of London; and Riesman, of Philadelphia. Even in cases of deficient compensation, digitalis has been found to increase the arterial tension in but a small proportion of cases, while in the rest it either fails to produce any effect in this direction, or actually causes a fall. Analyzed closely, this action was found sphygmomanometrically to show special characteristics: While it was the systolic pressure which failed to show any specific response to the action of the drug, as denoted by the irregular results just mentioned, the diastolic pressure fell invariably in cases of cardiac disease, a fact observed by Martinet in 1912. This indicates that digitalis should no longer as taught in textbooks, be considered as contraindicated in systolic hypertension, but, conversely, as tending actually to lower the diastolic pressure. As shown oncometrically, this action is associated with dilatation of the renal vessels, which is considered partly responsible for the diuretic action of the drug.

The clinical application of this newer conception of the action of digitalis was recently reviewed by Martinet (*Presse médicale*, April 22, 1914), who has done much to elucidate the whole question. This author not only confirmed the observations of others, but found that, judiciously employed, digitalis could in a large proportion of cases be used to lower the blood pressure. An essential feature emphasized by this author is that small doses should be given for this purpose, viz., one tenth to one quarter of a milligram (1/600 to 1/240 grain) of French digitalin (which consists chiefly, if not wholly, of digitoxin), or fifteen minims of digalen. In ten cases of angina pectoris closely observed, the intermittent use (ten days, followed by a rest of ten to twenty days) of either of these agents lowered invariably the diastolic pressure and often the systolic pressure, decreased the number of paroxysms or caused them to cease, and led to a retrocession of effort dyspnea. Similar observations had already been reported by Fiessinger. Benefit was also observed in cases of hypertension due to cardiorenal scleroses, the periods of rest in the use of the drug here being reduced to four or more days. The benefit was all the greater in the more severe cases. In aortic insufficiency, very small doses given during prolonged periods, not only proved beneficial, but in opposition to what is generally taught, reduced the liability to attacks of angina pectoris, either diminishing their number in a given period or causing them to cease. Riesman has likewise recommended digitalis in a condition in which it was formerly thought to be contraindicated, viz., hypertension hypertrophy of the heart, with rest as adjuvant.

SINUS THROMBOSIS AND PULMONARY METASTASIS.

Septic embolism of the lung has long been known as a metastatic effect of sinus thrombosis. Hessler, writing in 1896, mentions 171 cases. It may appear strange, therefore, that some specialists seem quite unaware of this fact. Lately, in *Zeitschrift für Ohrenheilkunde*, 68, 352, 1913, Ganter published a paper on the localization of these metastases in the lung. He has given us a new, and in many respects the most remarkable article we have yet examined upon the usually confused problem, the metastasis of otitis media. In fact, we must confess that some essays on sinus thrombosis have, in various ways, depressed us. Ganter describes his cases with characteristic German thoroughness. The salient points that appealed to him by their novelty were two; pain

in the left side was the first physical sign of the shifting of the disease, and the pathological anatomy clearly revealed that the left lower lobe of the lung was commonly the seat, or inner citadel, of the embolisms. Similarly, Uchermann observed this position of the pain in three out of four cases of sinus thrombosis. So, too, Dench describes a fatal case of sinus thrombosis. He says, in *Transactions* of the Nineteenth Meeting of the American Laryngological, Rhinological, and Otological Society, 280, 1913, "The symptoms were completely those of pulmonary embolism." Unfortunately he was unable to prove this fact by autopsy. There are two main lessons that these writers have to teach. In the first place, clots from a sinus thrombosis are nearly always small. Secondly, small clots and large clots do not coincide in their course through the blood stream; the latter follow the larger vessels. This distinction we owe to Körner and Beneke (*Handbuch der allgemeinen Pathologie,* von Krehl und Marchand, II, 362).

Akin to metastases in the lungs are those in the spleen, liver, kidneys, and joints. Hecht conjectures that the heart is also affected in this way. Grossmann makes us acquainted with amyloid disease after otitis media and sinus thrombosis in his curious paper published in *Beiträge zur Anatomie, Physiologie, Pathologie und Therapie des Ohres* 6, 266, 1913. We have here employed the word "metastasis" in the ordinary medical sense; however variously the term may have been applied in reference to sinus thrombosis. An occasional writer examines these changes like the parts of a puzzle, and does not appear able to put them together again. The important question, How many metastases has sinus thrombosis? will be referred to again.

UNFORTUNATE NEWSPAPER PUBLICITY.

Through no fault of his own a young pathologist of this city recently found himself in an unenviable position ethically through the publication in the daily newspapers of the substance of a communication he expected to make to one of the National societies. In no sense was the publication a smart piece of journalism; its lay readers cared nothing whatever for the subject matter and the medical readers would naturally suspend judgment until it was presented to them in an unmistakably orthodox fashion. The story of the discovery of a bacillus, which might easily have been obtained from the official program of the medical society or from backstairs sources at the laboratory, was eked out with silly details concerning the discoverer's career, his youth, and other inapposite matter, which we have no doubt greatly distressed, if it did not nauseate him and make him feel as if he had just scored a hit in a Broadway musical comedy. We extend our sympathy to our young colleague who was thus innocently placed in a false light before his confrères, and can assure him that no physician, after a little thought, believed that he had any hand in the preparation of the preposterous stuff.

A BELATED DISCOVERY.

Two ladies rise to almost lyrical heights in *McClure's Magazine* for June, 1914, in an account of what they call the *Dämmerschlaf* or twilight sleep used in all cases to ease the pangs of childbirth in a Frauenklinik of Freiburg, Germany. One gathers from the article that for ten long years a jealously guarded secret has existed in this favored spot, whereby the poor women of the district and the wealthy women of England and America have alone among their sisters become mothers without the usual pains. To this shrine have come expectant mothers from Russia, India, South Africa, South America, even from North America, preferring the formal wards of Freiburg to their own comfortable homes wherein to defy the primal curse of *Genesis*, III, 16, "in sorrow thou shalt bring forth children." We might remark, in passing, that this is only part of the curse, women having long since done away with its final clause, "thy husband . . . shall rule over thee."

The description of the clinic and its attendants is done in the highest journalistic style; the latter are famous throughout the medical profession; interest in the clinic is worldwide, nowhere keener than among the women of the United States, although one of the first patients was a Scotch noblewoman; patients have the ineffable advantage of being superintended by a head nurse of the most highly born German stock; one of the chiefs is "so adequate," the other "so wistful and sympathetic"; it is the latter, we suppose, who greets a new patient with the words, "I have come to comfort you." Forceps are "almost never" used; there have been no hemorrhages.

Our readers, who are likely to be pestered with requests for information concerning this marvelous secret, may be astonished to learn that it is the use of the well known morphine-scopolamine hypodermic anesthesia, which was curtly discussed and dismissed in a dozen lines in our textbooks of five years ago, as probably inferior to general anesthesia. It is in use, however, in the United States, and the drugs combined in a tablet have a steady sale, so that women need not travel to Germany; they can easily find here physicians with the requisite

courage and patience to see them through the sweetly named *Dämmerschlaf*.

The article is amusing to the professional reader from its naiveté; morphine is morphium in the text. "It is not necessary to dwell upon the qualities of morphium." As to scopolamine, we get the novel information that it has been used as a substitute for atropine for "dilation" of the pupil, and that Hoche, "the great alienist," has used it for its *almost hypnotic* effect in quieting excited patients. If it seems rather silly to exploit in this manner a method known in America for over ten years, we must remember that since the days of the hygienic muckraking, the popular scribes seem to be hard pressed for material and perhaps we should not blame young writers, or old ones for that matter, for constructing a sensational story on venerable medical methods, for only the wealthy could afford to be misled in this case and they have the best of native advisers. It is hardly fair to the lay reader of this article, however, to pass over so lightly as the writers do—or were they not informed of it at the clinic?—the frequent narcotization of the child when born, a condition that demands artificial respiration.

THE ONTARIO WORKMEN'S COMPENSATION BILL.

The bill now before the Ontario Legislature as to the liability of employers to make compensation to employees for injuries received during employment is, in its entirety, just neither to the working man of the Province nor to the profession of medicine. The basic principle underlying legislation of this character is that the industries should shoulder the burden of cost of such injury as a workman may sustain during employment; but by the proposed act the injured person will be responsible for the medical and surgical treatment and attendance. Employers of labor are to be assessed, it is likely on a wage percentage basis, to provide for an accident fund, which is to be administered by a Workmen's Compensation Board whose decisions in all cases are to be final and without appeal. This board will also have power to appoint a chief medical officer, medical referees, etc.

It is because this act does not make provision for payment of surgical and medical care, like similar acts in other countries, that the medical men in Ontario object to its adoption. They hold it to be a remarkable instance of inequity, inconsistent with the following democratic remarks of the commissioner who framed the bill: "In these days of social and industrial unrest, it is, in my judgment, of the gravest importance to the community that every proved injustice to any section or class resulting from bad or unfair laws should be promptly removed by the enactment of remedial legislation, and I do not doubt that the country whose legislature is quick to discern and prompt to remove injustice will enjoy, and that deservedly, the blessing of industrial peace and freedom from social unrest. Half measures which mitigate but do not remove injustice are, in my judgment, to be avoided." The medical profession concurs heartily and unanimously in this dictum.

As the commissioner, Sir William R. Meredith, chief justice of Ontario, does not maintain that the proposed act is perfect and that the last word has been said, the profession of Ontario is urging the Government to rectify the injustice of imposing upon employees the burden of all costs for surgical and medical attendance, nursing, and other necessaries. There is the added injustice to the practitioners of medicine, who are in duty bound to respond promptly in all accident cases; surely there should be satisfactory provision for their remuneration. Physicians in the United States should watch the progress of this bill among their neighbors and follow their good example in interesting themselves in this matter of compensation for injury. Let them see that all State legislation bearing on the subject makes full provision for the payment, by the employer, of all reasonable medical and surgical fees.

OUR TROUBLESOME NOMENCLATURE.

We were recently taken to task by a contributor for substituting the usual form, orchidectomy, for the word he preferred, orchiectomy; our friend seemed to fear that he would be attacked for his ignorance of Greek. We stood fast in this instance, for orchidectomy has been in universal use since its first construction. We do not feel called upon to justify the inserted "d," resting secure in the belief that the word will remain, and knowing that it would be impossible to substitute the correctly formed word in every instance where a hybrid or other incorrect name had crept into our onomatology. Were we to attempt this purist's task, our columns would be unintelligible to our readers. We may say, however, that two explanations occurred to us; one was that we got orchidectomy through the French, the other was that the "d" had been inserted to avoid a hiatus. To these, Professor Clarence H. Young, of Columbia University, adds a third theory, to wit, that orchidectomy has been derived, not from orchis, but from its diminutive, orchidion. To us this explanation is most interesting, because it shows that the inserted "d" is at least Greek in spirit. Stedman gives orchiectomy as a variant, but he does not state where he found it. To him who asks why the Latin form, castration, does not fulfil all requirements, we beg leave

to say that castration implies removal of both testicles, and another word is really needed to describe the partial operation. Perhaps some day a few conscientious editors may foregather with some ardent philhellenes and construct a new onomatology for the English speaking man of medical science; till then, however, we must rely, with occasional annoying doubts to be sure, upon our own individual preferences.

THE DRUG STORE AS A FIRST AID STATION.

Governor Dunne, of Illinois, has recently made public a letter addressed to the president of the Illinois Board of Pharmacy in which he criticized some druggists who had refused admittance to injured persons seeking first aid. In a letter replying to this criticism the editor of the *American Druggist* asked that the Governor lend his influence toward the passage of a measure making the municipality or county liable for payment for services rendered to injured persons by registered pharmacists, the bill in each case to be duly authenticated by witnesses and to be passed upon by the State Board of Health. In reply to this suggestion, Governor Dunne admits the liability of the State for services rendered to persons unable to pay, but objects to liability for services rendered to those who are merely unwilling to pay. He also suggests that drivers and owners of vehicles causing injuries be made jointly liable with injured persons for aid rendered the latter. While the details of such a plan would require careful consideration, it certainly seems only fair that the State should share the burden which custom now imposes on the corner druggist of giving first aid to any victim who may chance to be injured near his store.

The physician, like the pharmacist, is rarely thanked and still more rarely remunerated for his services in emergencies, and the time may come when a sense of fair play will develop sufficiently to insure both pharmacist and physician adequate remuneration from the State for services rendered to citizens under such circumstances.

UNDESIRED IMPORTS.

According to *Public Health Reports* for May 15, 1914, Surgeon General Rupert Blue sent, on May 6th, to the medical officers of the Public Health Service who were engaged in the examination of aliens, a letter calling attention to diseases likely to be found in immigrants from certain parts of the world. These were: Kalaazar, reported in China, Egypt, Arabia, Tunis, Algiers, Greece, Malta, and around the Mediterranean; Schistosoma hæmatobium, a blood fluke infection, found in South Africa, Egypt, and Cuba; and a group of four infections found especially in China and Japan, viz., Clonorchis, a liver fluke; Paragonimus westermanii, a lung fluke producing a disease often mistaken for consumption; Diplogonoporus grandis, a Japanese tapeworm, very like the Russian variety, and Schistosoma japonicum, a blood fluke.

News Items.

American Medico-Pharmaceutical League.—At a meeting of this organization, to be held on Monday, May 25th, at the Hotel Astor, New York, Dr. Robert E. Coughlin, of Brooklyn, will read a paper on the Medical Aspect of Athletics.

Vacation Courses in Berlin.—The next term of the vacation courses of the Berlin Congress of Tutors (*Dozenten*) begins October 1, 1914, and lasts until October 28, 1914. The lecture lists will be sent gratis on application to Herr Melzer, Ziegelstrasse 10, 11 (Langenbeck Haus), to whom all other communications should be addressed.

Jefferson Medical College Commencement.—The commencement exercises of Jefferson Medical College, Philadelphia, will be held on June 6th; Dr. Henry H. Apple, president of Franklin and Marshall College, will deliver the principal address. There will graduate 163 men, a larger class than usual.

American Dermatological Association.—At the thirty-eighth annual meeting of this association, held in Chicago on Thursday, Friday, and Saturday, May 14th, 15th, and 16th, the following officers were elected: President, Dr. Sigmund Pollitzer, of New York; vice-president, Dr. Martin F. Engman, of St. Louis; secretary, Dr. Oliver S. Ormsby, of Chicago. Next year's meeting will be held in New York.

Canadian Association for the Prevention of Tuberculosis.—The fourteenth annual meeting of this association will be held in Halifax, Nova Scotia, on July 13th and 14th, under the presidency of the Hon. Adam Beck, of London, Ontario. Dr. S. Adolphus Knopf, of New York, has been invited to deliver the oration on that occasion. His subject will be the Modern Warfare against Tuberculosis as a Disease of the Masses. His Royal Highness the Governor General of Canada is honorary president of the association.

Association of American Physicians.—At the twenty-fifth annual meeting of this organization, which was held in Atlantic City, N. J., on Tuesday and Wednesday, May 12th and 13th, under the presidency of Dr. Simon Flexner, of New York, the following officers were elected: President, Dr. S. J. Meltzer, of New York; vice-president, Dr. Henry Sewell, of Denver, Col.; secretary, Dr. George M. Kober, of Washington, D. C. (reelected); recorder, Dr. Thomas McCrae, of Philadelphia (reelected); treasurer, Dr. J. P. Crozer Griffith, of Philadelphia (reelected).

The Italian Medical Society.—This organization of Italian physicians in New York meets in Terrace Garden on the fourth Friday of each month. The officers are as follows: President, Dr. Filippo Cassola; vice-presidents, Dr. Francesco Samarelli and Dr. A. Pisani; treasurer, Dr. P. Spinelli; secretary, Dr. G. Corcia; secretary of English correspondence, Dr. F. Auleta; council, Dr. B. Baldereschi, Dr. A. Cifaldi, Dr. Laura Legiardi, Dr. John Lo Pinto, Dr. H. Nacciarone, Dr. E. Perrone, Dr. C. Tocci, and Dr. E. Tresca; censors, Dr. A. Caivano, Dr. B. De Santi, and Dr V. Leuzzi. The motto of the society is taken from the title of a work by Morgagni, *De sedibus et causis morborum per anatomen indagatis*, i. e., the seat and cause of disease investigated by anatomy.

Personal.—Dr. Theobald Smith, professor of comparative pathology in Harvard Medical School, has accepted the position of director of the new department of animal pathology of the Rockefeller Institute for Medical Research. Mr. John D. Rockefeller recently gave $1,000,000 to the institution for the endowment of this department, and Mr. James J. Hill gave $50,000 to be devoted to the study of hog cholera.

Professor Ira Remsen, former president of Johns Hopkins University, has been awarded the Willard Gibbs Medal by the American Chemical Society, the presentation having been made in Chicago on Friday, May 15th.

Dr. Otto Glogau, of New York, has been appointed by Governor Glynn a delegate from the State to the third International Congress on Occupational Diseases, to be held in Vienna during September. In a paper, Occupational Diseases of the Ear and Upper Air Passages in American Factories, Doctor Glogau will bring before the congress the result of his investigations made for the New York State Factory Investigating Commission.

Public Reception at the Montefiore Home.—On Sunday afternoon, May 17th, a reception was held at the Montefiore Home, on Gun Hill Road, near 210th Street, New York, to give the public an opportunity to inspect the new buildings of the institution now that they are in full operation. It is said that about four thousand persons visited the institution, which has changed its name to the Montefiore Home, Hospital, and Country Sanatorium for Chronic Diseases. Dr. Siegfried Wachsmann is medical director of the institution.

American Society for Physicians' Study Travels.—At the annual meeting of this organization, which was held in Philadelphia on Tuesday, May 12th, the following officers were elected: Dr. James M. Anders, of Philadelphia, Dr. William J. Mayo, of Rochester, Minn., Dr. Lewellys F. Barker, of Baltimore, and Dr. Rudolph Matas, of New Orleans, presidents; Dr. Albert Bernheim, of 1225 Spruce Street, Philadelphia, secretary general; Dr. L. Webster, of Philadelphia, director of finance department; Dr. Alfred Stengel, of Philadelphia, director of publicity department; Dr. Ludwig Kast, of New York, director of postgraduate work; and these directors, Dr. Swithin Chandler, Dr. F. X. Dercum, Dr. S. G. Dixon, Dr. A. B. Hirsh, Dr. Thomas McCrae, Dr. J. S. Neff, Dr. G. M. Piersol, Dr. David Riesman, Dr. S. D. Risley, Dr. W. E. Robertson, Dr. W. L. Rodman, Dr. C. E. deM. Sajous, and Dr. S. L. Ziegler, of Philadelphia. The next meeting will be held June 25th at Atlantic City, between sessions of the American Medical Association. A cordial invitation is extended to ethical practitioners everywhere to join the society in its brief and longer excursions.

Brooklyn Pediatric Society.—Brooklyn will be the centre of a warm eugenic argument on May 27th. The Brooklyn Pediatric Society will listen to a paper by Dr. William J. Robinson, of Manhattan, on The Limitation of Offspring by the Artificial Prevention of Conception, from the Individual, Social, and Eugenic Standpoints; All Pros and Cons of the Question Carefully Considered. Doctor Robinson is strongly in favor of the general dissemination of knowledge regarding family control of offspring.

Some well known Brooklynites are prepared to contest the ideas advanced, while others will support the speaker. Discussion is to be opened by Dr. William Francis Campbell, retiring president of the Medical Society of the State of New York; Dr. J. Richard Kevin, president of the Medical Society of the County of Kings; Dr. James W. Fleming, and Dr. Robert L. Dickinson.

The subject presented is a vitally important one for the future of the race and is one on which every physician should have a positive opinion. The meeting should be one of unusual interest and the profession are cordially invited to be present. It is to be held in the main auditorium of the building of the Medical Society of the County of Kings, 1313 Bedford Avenue, Brooklyn, at 9 p. m., May 27th.

American Medical Editors' Association.—On June 22d, at 9 a. m., this association will meet at the Marlborough-Blenheim Hotel, Atlantic City, N. J., under the presidency of Dr. E. A. Vander Veer, of Albany, N. Y. An unusually attractive program is being prepared. Among the papers are the following: 1, President's Address, by Dr. E. A. Vander Veer, of Albany; 2, Relation of the Medical Press to the Cancer Problem, by Mr. Frederick L. Hoffman, of Newark, N. J. (by invitation); 3, The Things that Count in Medical Practice, by Dr. H. Edwin Lewis, of New York; 4, Ideal National Medical Journal: What It Should Be and What It Should Not Be, by Dr. W. J. Robinson, of New York; 5, Two Problems of the Organization Journal: The Mediocre Paper and the Editorial Department, by Dr. Sarah M. Hobson, of Chicago; 6, Medical Journalism as a Local and as a National Proposition, by Dr. Thomas S. Blair, of Harrisburg, Pa.; 7, Medical Books and Journals, by Dr. T. D. Crothers, of Hartford; 8, The Medical Periodicals and the Scientific Society, by Dr. F. H. Garrison, of Washington, D. C.; 9, Editorial Experiences, by Dr. A. L. Benedict, of Buffalo; 10, The Special Medical Journal, by Dr. A. Bassler, of New York; 11, The Medical Profession and Its Influence from a Buying Standpoint, by Dr. Joseph MacDonald, Jr., of New York; 12, The Preparation of the Original Article and the Editor's Latitude, by Dr. E. Franklin Smith, of New York; 13, He Among You Who Is Without Sin Shall Cast the First Stone, by Dr. Erwin Reissmann, of Newark, N. J.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, May 25th, Section in General Medicine of the College of Physicians, North Branch of the County Medical Society, and St. Agnes Hospital Clinical Society; Tuesday, May 26th, West Philadelphia Medical Association; Wednesday, May 27th, County Medical Society; Thursday, May 28th, Pathological Society, and the Germantown Branch of the County Medical Society; Friday, May 29th, Medical Club, directors.

Mortality Statistics of New York.—During the week ending May 16th, there were 1,533 deaths from all causes reported to the Department of Health of the City of New York, corresponding to an annual death rate of 14.32 in a thousand of population. The death rate for the first twenty weeks of the year has been slightly lower than that for the corresponding period last year, the rate this year being 15.35 in a thousand of population, compared with a rate of 15.36 last year.

National Association for the Study and Prevention of Tuberculosis.—At the annual meeting of this association, held in Washington, D. C., during the week of May 4th, the following officers were elected: President, Dr. George M. Kober, of Washington, D. C.; vice-presidents, Dr. Lee K. Frankel, of New York, and Dr. W. Jarvis Barlow, of Los Angeles; treasurer, Dr. William H. Baldwin, of Washington, D. C.; secretary, Dr. Henry Barton Jacobs, of Baltimore. The newly elected board of directors is as follows: Dr. Livingston Farrand, of Boulder, Col.; Frederick L. Hoffman, of Newark, N. J.; Dr. Lawrason Brown, of Saranac Lake, N. Y.; Dr. James Alexander Miller, of New York; Dr. Charles L. Minor, of Asheville, N. C.; A. L. Mills, of Portland, Ore.; Dr. Rupert Blue, of Washington, D. C.; Dr. H. R. M. Landis, of Philadelphia; S. Livingston Mather, of Cleveland; Dr. David R. Lyman, of Wallingford, Conn.; John Mitchell, of New York, and Dr. S. A. Knopf, of New York.

American Medico-Psychological Association.—The seventieth annual meeting of this association will be held in Baltimore, on Tuesday, Wednesday, Thursday, and Friday, May 26th, 27th, 28th, and 29th, with headquarters at the Hotel Belvedere. On Monday, May 25th, at 11 a. m., under the auspices of the National Committee for Mental Hygiene, the first annual convention of State Societies for Mental Hygiene will meet in Baltimore, with eight State societies and the Mental Hygiene Committee of the Canadian Medical Association represented. At 2 p. m. there will be a round table discussion, and at 8 p. m. addresses by Dr. William H. Welch, Senator McLean, of Connecticut, and Miss Julia Lathrop. On the same date the National Association for the Study of Epilepsy will meet. The members of these organizations are cordially invited to attend the meetings of the American Medico-Psychological Association during the remainder of the week. Dr. Carlos F. MacDonald, of New York, is president of the association, Dr. S. E. Smith, of Richmond, Ind., vice-president, and Dr. Charles G. Wagner, of Binghamton, N. Y., secretary-treasurer.

Clinics at Jefferson Hospital for Members of the American Medical Association.—The following special clinics will be held at Jefferson Medical College Hospital, Philadelphia, on Monday, June 22d, and Saturday, June 27th, for the members of the American Medical Association and their friends: Monday, June 22, 1914. 11 a. m., Professor E. P. Davis, Obstetrical Clinic; Professor F. X. Dercum, Neurological Clinic; 12 noon, Professor H. W. Stelwagon, Dermatology; Professor H. A. Hare, Cardiovascular Disease, Exclusive of Valvular Disease; Professor D. Braden Kyle, Nose and Throat Cases; 1 p. m., Professor S. Solis-Cohen, Medical Clinic; 2 p. m., Professor W. M. Sweet, Ophthalmology; 3 p. m., Professor F. T. Stewart, Surgical Clinic.

Saturday, June 27, 1914. 9 a. m., Professor Thomas McCrae, Medical Clinic; Professor E. E. Montgomery and Dr. J. M. Fisher, Gynecological Clinic; 10 a. m., Professor H. A. Wilson, Orthopedic Surgery; 11 a. m., Professor John H. Gibbon, Surgical Clinic; 11:30 a. m. to 1 p. m., Professor H. R. Loux, Renal Surgery; 1 p. m., Professor E. E. Graham, Pediatric Clinic; 3 p. m., Professor F. T. Stewart, Surgical Clinic.

Professor E. E. Montgomery will hold a special clinic for the class of 1874 of Jefferson Medical College in the clinical amphitheatre, June 26, 1914, from 10 a. m. to 2 p. m. All physicians are welcome.

Pith of Progressive Literature.

DERMATOLOGISCHE WOCHENSCHRIFT.

May 2, 1914.

Trophoneurotic Gangrene after Shotwound.—O. Leszlenyi reports the case of a man aged eighteen years who received three bullets in his left arm in 1911. Two bullets were removed by the surgeon, but the third was not found. In May, 1913, an ulcer appeared on his left arm which increased in size in spite of treatment. About a month later, an ulcer appeared on the back of his right hand. The condition grew worse for about a month, when a foreign body became evident in the centre of the ulcer on his arm. As soon as this was removed, the temperature fell to normal, convalescence began, and he went on to recovery.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

March 5, 1914.

Catarrhal Enteritis of Infants.—Karl Baerthlein and Walter Huwald have investigated intestinal catarrhs occurring in infants. Bacteriological examination of the stools, in most cases, showed dysentery bacillus of the toxic and nontoxic variety. Associated with these are often streptococci; a pathogenic role cannot always be ascribed to them with certainty. Out of seventy-two cases, twenty-one showed the dysentery bacillus. A fifty per cent. mortality demonstrated the pathogenicity of this organism. In several cases it was possible to cultivate the organism from the spleen and gallbladder. Pathological changes were not limited to the large intestine; the small intestine and Peyer's patches were markedly affected. Paratyphoid bacillus organism was isolated in seven cases, in which the large intestine was equally affected. In nine cases, allied bacterial strains were found. Finally the pyocyaneus bacillus was cultivated in ten cases. In six cases showing pyocyaneus in the stools, the agglutination test, even in a high dilution, was positive. The authors consider it quite possible that this organism was the primary cause of these intestinal affections.

Internal Disinfection.—Rudolf Roosen reports experiences with a combination of methylene blue and calomel in chemotherapeutic experiments in mouse tumors. The disinfectant action of methylene blue is enhanced by the addition of calomel, which converts free ions of the staining substance into minute quantities of mercuric chloride. The combination when injected has the same effect on mouse tumors as eosin selenium. It has also an inhibiting effect on the growth of certain bacteria.

Complement Deviation Reaction in the Diagnosis of Malignant Tumors.—K. Hara has used different chemicals as antigens to fix complement, when mixed with serums of cases of suspected carcinoma, in addition to blood extract formerly employed by von Dungern. He has found that, of all the substances investigated, maltose and phenolphthalein gave the greatest number of positive reactions. He recommends that these be used in addition to blood extract as antigens, in carrying out the test.

Addition of Oxgall to the Loeffler Serum Medium for the Culture of Diphtheria Bacilli.—E. Büsing denies that the addition of 3.5 per cent. of oxgall to the ordinary Loeffler serum medium facilitates the growth of diphtheria bacilli and retards the growth of associated bacteria. According to Drigalski and Bierast, who had suggested this modification, it greatly facilitated the diagnosis of diphtheria in suspected cases, a belief which the author has not been able to substantiate in a series of over 250 cases.

Experimental Investigation of Tuberculin and Tuberculosis.—Hans Aronson concludes as follows: 1. The action of tuberculin is not due to the presence of antibodies in the blood of the affected organism. 2. The general reaction after an injection of tuberculin is not produced by any specific substance; the cutaneous reaction however is brought about by substance which is specific, and which is capable of being removed from the preparation by digestion with pepsin hydrochloric acid. 3. Tuberculin and similar preparations are not capable of producing immunity. This applies even to the so called sensibilized tuberculins. Solutions, prepared by careful extraction, of the bodies of tubercle bacilli, even when combined with lipoids, are also not capable of producing immunity. 5. Only the original bacteria are capable of producing immunity, and these may be prepared either by killing with heat without breaking up the proteid or by artificially diminishing virulence or by using bacteria that are not virulent for the host.

Tubercle Bacilli in the Circulating Blood.—C. Moewes has been able to prove, by injecting the blood of suspected individuals into guineapigs, that the tubercle bacillus is not constantly present in the blood. Even in certain cases of miliary tuberculosis, the bacillus is not constantly found.

Bacillemia in Tuberculosis.—E. Rautenberg has attempted to prove the presence of bacilli in the blood of tuberculous individuals by injecting the blood into monkeys, which are very susceptible to tuberculous infection. He has been able to confirm the findings of Moewes in this regard.

Paratyphoid Epidemic Due to Infected Flour.—Hans Langer and Thomann report a small epidemic due to infection with the paratyphoid organism after the eating of foods prepared with infected flour. This flour was bought from a dealer who had used cultures of mouse typhoid bacilli for the destruction of rats in his establishment. The authors insist that the use of this form of rat destruction is a dangerous procedure, and should be used only by persons qualified, and never, if possible, where public commodities are sold.

Postoperative Treatment of Pyloric or Duodenal Ulcer.—Franz Ehrlich suggests that patients should not be permitted to leave bed until the benzidin test for occult blood remains negative from three to five days. In addition, the application of hot compresses for ten hours during every day will show the presence or absence of any preoperative pains and promote healing.

March 12, 1914.

Action of Radioactive Substances on Mouse Cancer.—A. von Wassermann has been able to

demonstrate that mouse carcinoma is more resistant to the action of radioactive substances such as mesothorium, than human cancer tissue. He determined the time necessary for the maintenance of the viability of the tumor tissue. He found that, after treatment with mesothorium for three hours, the tissue was no longer able to regenerate in the body of the mouse, although viability of the tissue under normal conditions, i. e., outside of the body, when suspended in Ringer's solution, was four and one half hours. Tumor tissue must be thoroughly emulsified to be affected by mesothorium. If several mm. thick, the tumor tissue even after three hours' radiation, is still able to regenerate, and even if not able to grow any further, is still capable of being stained and of decolorizing methylene blue solutions, thus proving that power of regeneration and power of nutrition are two different elements in the cancer cell, and that by radiation it is robbed of the power of multiplying, though not of nutrition. He concludes that a direct action on the cell is necessary in order to influence its growth, and for this reason it seems almost hopeless to expect to be able to influence deep growths or metastases, except perhaps by means of the secondary rays.

Immunity in Tuberculosis.—Paul H. Roemer asserts that it is possible to induce in sheep an immunity to tuberculosis by preliminary injection of one tenth mg. of bovine tubercle bacilli. This is followed by the development of a local tuberculosis, with perhaps an involvement of the regional lymph glands. As a result, sheep acquire almost absolute immunity to the injection of a lethal dose of bovine tubercle bacilli. The serum of sheep thus treated is capable of protecting other sheep against infection, and occasionally is curative even after infection. This passive immunity is only capable of being transmitted to the same species. It will not protect a cow, however, against infection with a lethal dose, and the serum retains its protective power for sheep for only a short time.

Immunity against Tuberculosis Produced with Tubercle Bacilli.—Carl Siebert has carried out a number of experiments based on Roemer's findings with regard to sheep and tuberculosis. By previously inoculating guineapigs with small amounts of tubercle bacilli, he was able to prolong the lives of the guineapigs for 123 days after infection with the lethal quantity of bacilli. Control animals that had not been previously immunized, lived only thirty-eight days. The former group showed lesions of phthisis similar to those in human beings, cavernous destruction with excessive fibrosis of the destroyed lung areas.

Anaphylaxis in the Treatment of Diphtheria and Its Prevention.—K. Joseph suggests that, wherever the danger of anaphylaxis is present in the treatment of diphtheria with diphtheria antitoxin, it can be obviated either by producing the state of antianaphylaxis by the previous administration of minimum quantities of serum, or by using an antitoxin prepared from another species, viz., beef immune serum instead of horse antitoxic serum. The use of dried serum suspended in oil has not prevented anaphylaxis in animals previously sensitized with dried or fluid horse serum.

Practical Results with Specific Serum Therapy.—K. E. Boehncke advocates the use of older antitoxic serums on the ground that by virtue of their age, they have lost the so called primary toxicity which is responsible for the irritant effects after subcutaneous inoculation. These serums are also less liable to produce anaphylactic symptoms, and in the great majority of instances, have not deteriorated even after the lapse of several years. After three years, when not exposed to light or heat, they have lost only a minimum part of their potency, and are thus to be considered where intravenous administration becomes a necessity.

Gold Cantharidin and Tuberculosis, with Especial Reference to Laryngeal Tuberculosis.—Gustav Spiess and Adolf Feldt report their results with combinations of gold cyanide and cantharidin in the treatment of tuberculosis. The preparation employed is the monocantharidylethylenediaminaurocyanide, which is injected intravenously in a 2.5 per cent. aqueous solution, the initial dose being for adults 0.025 gram, the maximum dose for women 0.075 gram and for stronger persons one gram. The treatment, except in cases with fever, is carried out on a clinical basis. Occasionally untoward effects are observed with reference to the gastrointestinal tract, but these are only temporary. In isolated cases, jaundice and stomatitis were observed; at no time was any injury of the kidneys or of the blood forming organs demonstrable. In 100 cases of localized tuberculosis, i. e., skin and laryngeal tuberculosis, results were very encouraging. The action resembles in a small measure that observed after the injection of tuberculin. The local reaction is especially marked after the first injection. Occasionally other measures are necessary, such as surgery or physical therapeutics.

Investigations with the Abderhalden Reaction.—Ernst Fränkel has carried out the Abderhalden reaction for the diagnosis of carcinoma and tuberculosis, and despite the most painstaking technic, has been unable to obtain results which would justify the use of this test for clinical or diagnostic purposes.

Tubercle Bacilli in Blood.—Baetge attempted to find tubercle bacilli in the circulating blood of patients affected with severe tuberculosis, but asserts that when acidfast rods are present in smear, it is difficult to decide whether they are really bacilli. In carrying out these investigations in animals he found that the sediment of blood to be examined gave positive results in only eight of thirty-eight cases examined.

Diphtheria Bacilli in Fatal Cases of Diphtheria.—Liedthe and Voelckel were able to demonstrate in seven fatal cases of diphtheria innumerable bacilli in the heart, lungs, liver, spleen, bone marrow, and kidneys. They conclude that the patients died of a general infection, and not of a toxicosis, as previously supposed.

Occupational Injuries through Radioactive Substances.—F. Gudzent and L. Halberstaedter report disturbances in individuals whose occupation exposes them to the action of radioactive sub-

stances. The disturbances affected chiefly the hands, especially the terminal phalanges, and were trophic in nature, while in other cases symptoms were of a general character, and consisted of marked lassitude, with tendency to sleep, headaches, increased irritability, vertigo, and slight fainting spells. These disturbances occurred chiefly in women. In all cases, without exception, a relative and absolute lymphocytosis was present. Lymphocytes were increased up to sixty-three per cent., neutrophiles were diminished to thirty-five per cent. To prevent these injuries, it is important to avoid any contact of the fingers with the radioactive substances, and to permit of thorough airing of the rooms so that the emanations diffuse out of them. Workers should be protected by suitable metal guards and metal lined clothing, and a careful physical examination made twice yearly, with a thorough examination of the blood.

Pernicious Anemia and Pregnancy.—Alfred Wolff cites a case where a typical blood picture of pernicious anemia was observed in a woman aged twenty-two years during the last months of her pregnancy. She was a primipara, and as a result of a spontaneous miscarriage was immediately relieved of her symptoms. The child was prematurely born, was asphyxiated, and died after one and one half hour. The patient is entirely free from symptoms. The author pleads for a more expectant form of treatment in these cases. He considers intervention to be decidedly harmful, and to be avoided, in order to prevent the persistence of anemia.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

March, 1914

Extraperitoneal Cæsarean Section.—Kustner describes his technic in this operation, and discusses in general its advantages. His results are based on a review of one hundred cases. He considers this operation much superior to the old transperitoneal method, and maintains results in infected cases that could not have been obtained otherwise. Of fifty-three patients, infected before operation, only two died, one from the anesthetic, the other from tetanus.

Treatment of Uterine Myomata with the X Ray.—Graff reports ten cases of myoma which were treated with the x ray in concentration and in many exposures. Amenorrhea was produced, but not more quickly than when smaller doses of the ray were employed.

Treatment of Carcinoma of the Uterus with Radioactive Substances.—Landau, from his own and others' experience, does not feel justified in treating an operable case with the rays instead of by a radical operation.

Gauze Compresses Left in Abdominal Cavity Following Operation.—Gerich briefly mentions Neugebauer's and Ruprecht's collections of such instances: the latter believes that such happenings probably occur in from one half to one per cent. of all operations. Gerich then gives in detail an account of a similar case in his own experience.

Pituitary Extract in the Treatment of Bleeding during Adolescence.—Deutsch reports very favorably the treatment with pituitary extract of the irregular hemorrhages occurring in girls during puberty. By means of this substance he was able to control the intermenstrual bleeding and bring about a regular monthly discharge. It was also noticed that in addition to the regulation of the function, the patient's general condition was very greatly improved. The color was much better and the muscular tone increased. At no time were any unfavorable results noted, although as much as forty-five c. c. of the particular extract employed had been given. Usually about one c. c. of the extract was given at one injection, this being repeated fifteen to twenty times with an interval of one to three days between each injection.

Severing the Umbilical Cord without Tying.—Rachmanov reports a series of 16,000 births in which the cord was not tied unless there was some indication of a pathological condition. In his method, the newly born child is placed between the mother's legs and nothing done till all pulsations in the cord cease, about twelve to eighteen minutes. The uterus must in nowise be disturbed. The cord is then cut at a length of about four cm., and not tied unless bleeding is present. This is an indication of a pathological condition and must be treated as such. In all these instances, there has not been a single case lost as a result of bleeding from the cord. In this method, the cord does not dry and does not come off for five or six days, rather later than usual. The chief advantage appears to be that a firmer scar is formed at the umbilicus.

Relation of the Abderhalden Reaction to a Secretion of the Ovaries.—Solovjev reports an interesting experience with the dialysis of placental tissue. As control of the coagulated placenta, he used serum from men. With such serum, from ten men, he got no results when using a coagulated placenta that had not been properly prepared. With the same placental tissue, he used serum from women in whom pregnancy could be ruled out absolutely. In these there was a splitting of the albumin.

LYON MÉDICAL.

April 12, 1914.

Treatment of Priapism.—A. Chalier and J. Gaté report a case of priapism of two weeks' duration, wholly uninfluenced by medicine, in which a cure was effected by incising both corpora cavernosa and inserting a long drain in each. At no time was any bright red blood evacuated. The cause appeared to be a thrombosis, the patient having previously had a posttyphoidal milk leg; he showed defective venous circulation in the hypogastrium. While most cases of priapism recover spontaneously, such recovery is often very slow, and in other cases fatal complications may follow expectant treatment. The advantage of surgical treatment is also shown in the ultimate functional results, Terrier and Dujarier noting functional recovery in three out of ten cases surgically treated, while in all but three of thirty-eight cases treated palliatively, the penis remained permanently flaccid.

Diabetic Coma without Acetonuria.—Revillet reports a fatal case of diabetes mellitus in which, during the period of coma, no acetone could be de-

tected in the urine, although there was a trace of albumin, which had been present for years and did not signify uremia as the cause of death. Nor was there heart failure, the pulse being strong. This patient had refused to follow dietetic rules, but ate chiefly sweets and pastry until shortly before death.

PARIS MÉDICAL.

April 18, 1914.

Alimentary Anaphylaxis.—G. Laroche, Charles Richet, Jr., and F. Saint-Girons state that severe alimentary anaphylaxis is met with generally in relation to eggs, milk, and mussels. Symptoms may appear after periods ranging from only fifteen seconds to forty-five minutes, and usually consist first of urticaria, violent cramps, or vomiting. Diarrhea almost always follows, and respiratory and nervous disturbances may also appear. Mild alimentary anaphylaxis is much more frequent, and may occur either in adults with previous slight intolerance to some single article of food, or in children the variety of whose diet is increased too suddenly. Thus a child of three to five years may have taken two or three eggs a day for some weeks or months; gradually there appear disturbances such as chronic indigestion, heavy breath, constipation or diarrhea and urticaria, prurigo, or eczema. The urticaria sometimes recurs after each meal, at other times is practically chronic. At times edema of the face, eyelids, or limbs appears. Excessive feeding and insufficiency of the digestive secretions are two conditions which appear to favor alimentary anaphylaxis. Although the quantities of food, e. g., of egg albumin, required to bring on symptoms need be only trifling, the amounts necessary to establish the anaphylactic state are usually relatively large, at least one or two eggs daily in addition to the ordinary diet. Diagnostic features are the suddenness of symptoms, almost immediately after ingestion, and the fact that symptoms appear each time an attempt is made to accustom the subject to the food in question, no matter how small the quantity. Prophylaxis consists in avoiding overfeeding, especially in puny, premature, or gastroenteritic infants. To children between the ages of one and five years never more than one egg should be given daily. In mild anaphylaxis, the food responsible should be entirely prohibited, at least at first. In severe anaphylaxis, the immediate treatment is that of shock, and includes injections of camphorated oil, ether, and epinephrine. Later, any existing gastrointestinal insufficiency should be treated to overcome the predisposition to anaphylaxis. For infants anaphylacticized to cow's milk, human milk or goat's milk must be obtained.

PRESSE MÉDICALE.

April 18, 1914.

Stages of Tuberculous Infection in Man.—Léon Bernard reviews experimental and clinical observations recently made upon the incidence of tuberculosis at different periods of life, and the relation of early infection to subsequent clinical developments. The present conception of tuberculosis may be summarized in three propositions: 1. The first tuberculous infection takes place in the child; 2, the disease manifestations met with in adults are due to a reinfection, the severity of which depends upon the state of immunity or allergia in which the body has remained as a result of the first infection; 3, infection by the tubercle bacillus is a process producing immunity or allergia, but the resultant condition of immunity or allergia is variable and unstable. Considerable practical importance attaches to these new observations, which must be taken account of in the prophylaxis of primary tuberculosis in young children as well as in the tuberculous reinfection of adults. Antituberculous vaccination is a subject worthy of painstaking study.

REVUE DE MÉDECINE.

April 10, 1914.

Kubisagari or Gerlier's Disease.—P. L. Couchoud states that the chief manifestation of this disease, which occurs endemically only in a small area near Geneva, Switzerland, and in certain restricted sections of Japan, is motor paresis, occurring in short seizures lasting usually only one to ten minutes, and affecting, in the order of frequency, the eyelids, the nuchal muscles, the upper extremities, the muscles of mastication, the extensors of the spinal column, the tongue, lips and cheeks, and the muscles of deglutition. Cloudy vision or diplopia, and pain in the neck and back are accessory symptoms. The seizures occur at irregular intervals, sometimes several times daily, almost exclusively in the summer months, and are excited by physical labor, a stooping posture, rapidly moving objects or lights, hunger, indigestible foods, and alcoholic excess. Rest is curative, and the attacks never occur at night. There is no fever, convulsion, loss of consciousness, nor anorexia. The disease occurs at all ages and has been known to recur in the same individual for fifty successive summers. It affects exclusively persons living in stables or in peasant's houses in which stalls for horses or cows are next the rooms. Entire families may be affected, and the cat and chicken are also susceptible. Studying the disease in Japan, the author found that it occasionally occurs also in horses and cattle, and that it is apt to be transmitted from mother to child through milk. Couchoud worked out the etiology of the affection. The pathogenic agent, obtained from the cerebrospinal fluid and milk of human patients, is a small coccus, growing rapidly on agar, Gram negative, and typically disposed in an irregular staphylococcic grouping. Injections of cultures in cats reproduced the disease in three to twelve hours. The disease is in some respects a counterpart of tetanus, and is evidently of telluric origin.

Gallop Rhythm in Typhoid Fever.—J. Mollard and A. Dumas state that this sign, noted almost exclusively in the severe forms of typhoid fever, may appear either at the period of maximal general symptoms, when it may either prove transitory or give way to signs of impending cardiac failure, or in the terminal stages of a protracted case, when it may persist throughout defervescence and convalescence without unfavorably influencing these. It occurs in association with mild parenchymatous myocarditis, and almost always with lowered sys-

tolic blood pressure. The latter is due, however, not only to the cardiac weakening but also to vascular relaxation, for which diminished adrenal function may be responsible. The gallop sound itself is due to the action of these two factors on the ventricular wall, whereby the arrival in the ventricle of blood discharged by the auricle, normally not noticeable, becomes readily appreciable to the auscultator. When it appears late in the course of a grave and protracted case of typhoid, gallop rhythm might be thought to portend syncope or even sudden death. Such effects, however, had never been noted in the recorded cases studied by the authors. Occurring in the acute period of typhoid, gallop rhythm signifies merely an early stage of myocardial involvement, and from the prognostic standpoint is of value only when considered in conjunction with other signs of heart weakness, such as decrease of intensity of the heart sounds and embryocardia.

BRITISH MEDICAL JOURNAL.

May 2, 1914.

Cerebrospinal Syphilis.—Purves Stewart deals with the several forms of syphilitic disease of the central nervous system and its membranes, laying particular emphasis on the importance of early diagnosis. Where destruction of the cells of this region has taken place the best that can be accomplished is to check the disease. There is no hope of restoring a function lost through destruction of its controlling nerve cells. Our present methods of diagnosis should be able to prove the presence of cerebrospinal syphilis in the preclinical stages and before there has been time for cellular destruction. In a tabetic, for example, we should not wait for ataxia and other marked symptoms; where one or both ankle jerks are absent, where the light reflex of one or both pupils is wanting, we should suspect, and proceed at once to a diagnosis. A negative blood Wassermann reaction is not sufficient to rule out cerebrospinal syphilis; this test should be made on the spinal fluid. This, alone, is not enough, especially if doubtful or negative, and we should also examine this fluid for globulin and with regard to its cytology. With reference to treatment, it is not safe to give the full dose of salvarsan to a patient with cerebrospinal syphilis because of dangers of serious damage from liberation of large amounts of endotoxin through destruction of spirochetes. By using small and repeated doses the serious nerve relapses can be avoided. The method of Swift and Ellis for intrathecal injections is of considerable value in certain cases; he is of the same opinion as Ravaut, who injects from six to nine mg. of neosalvarsan in distilled water directly into the spinal canal, completing the dose by injecting the remainder of the 0.45 gram into a vein at the same sitting. He speaks favorably of enesol in the treatment of the lightning pains of tabes, in one grain doses by hypodermic injection. It is known that the symptoms of cerebrospinal syphilis are often favorably influenced during the course of a febrile disease, fever, apparently, being the factor of importance. Administration of tuberculin to produce a rise of body temperature has been suggested and tried with good results, but Stewart considers large doses of tuberculin dangerous and likely to lead to the lighting up of an old tuberculous process. Donath suggested the injection of sodium nucleinate into the muscles to raise the temperature. Stewart says that, under his treatment, "in a considerable proportion of cases a more or less prolonged remission occurs in the clinical symptoms, sometimes accompanied by a diminution in the intensity of the lymphocytosis of the cerebrospinal fluid." He knows of no case, however, in which the method led to a cure in the sense of a lasting return to normal. Of the intracranial methods of administering drugs in these cases, the results so far obtained hardly justify the risks associated with repeated intracranial injections.

LANCET.

May 2, 1914.

Diagnosis of Postpyloric Ulcer.—Lewis Gregory Cole, after a brief recapitulation of his views on the pilleus ventriculi, its anatomy, physiology, and radiographic appearance, discusses the method of diagnosing ulcer of this portion of the stomach by means of serial radiography. Twenty-four instantaneous pictures are taken in rapid succession to show different phases of different cycles of the movements of the stomach and the pilleus ventriculi. These are then matched up, or reproduced cinematographically, and the presence of an ulcer is shown by a constant deformity in the shape of the pilleus. Not only can the diagnosis of an ulcer be made by this method, but its precise location, its age and activity, and the degree of interference with gastric emptying which it is causing, can all be determined with considerable accuracy. The paper is illustrated with many photographs, without which it is practically impossible to describe clearly the various types of deformity which are indicative of the presence of ulcer.

Acute Lobar Collapse of the Lung.—H. L. Tidy and E. Philips describe a case of this condition occurring in a healthy man aged twenty-nine years who was suddenly taken ill with pain in the right side of his chest. Cough, sweating, vomiting, and several shivering fits followed, and lasted two days before he went to hospital. When first seen he was slightly cyanosed, complained of pain in the right chest, had frequent restrained cough, temperature 103° F., respirations 40; his sputum was thin, scanty, and did not contain blood. Movement of his right chest was much limited, the percussion note was poor, as was the air entry, and the breath sounds were faint without any tubular breathing and with but few crepitant rales. The cardiac dullness lay entirely to the right of the midsternal line and the sounds were heard in the epigastrium. The two sides of the chest measured the same in circumference at the end of expiration. The patient gradually recovered his health and the position of his heart became normal, as did the pulmonary signs on the right side of his chest. The particular interest lies in the cause of the lobar collapse in this case. After discussing in considerable detail all common causes of this form of collapse, and excluding each in turn, the authors come to the conclusion that it was due to an acute dry pleurisy which caused a reflex inhibition of the muscles of

respiration on the affected side. They then enter into a discussion of the mechanism by which this inhibition of the muscles of respiration on one side leads to collapse, suggesting that it is due to loss of elasticity in the lung on the affected side and absorption of air by the blood, so that the pressure falls far below that in the sound lung. The mediastinum is drawn or pushed to the collapsed side and leads to further loss of elasticity and further absorption of air.

Pain after Operation for Internal Piles.—P. Lockhart Mummery believes that this is due to irritation arising from infection of the wounds caused by operation and that it can be prevented by proper precautions. The patient should be prepared by complete emptying of the intestinal canal, and thorough washing of the rectum with soap and water. After this the rectum is washed with a suitable antiseptic until it is surgically clean. The patient must be deeply anesthetized; the sphincter must not be stretched or bruised. The operation should be carried out with the least possible manipulation and traumatism to the parts, and no clamps should be applied to tissue that is not to be removed. The anal margin must not be included in ligatures, and as few used for the control of hemorrhage as possible. After operation, the wound is bathed with one to forty carbolic acid solution, and the lower part of the rectum should be filled with sterilized vaseline to prevent infection. The bowels should not be kept confined for more than three or four days; after this a mild aperient should be used daily. The interior of the bowel must not be interfered with in any way until all of the ligatures have separated, except for the daily injection of a small amount of oil to assist in defecation, and to protect the surface. The patient may have a full diet from the first and should not be fed on slops. Out of 200 cases treated in private practice, only fourteen per cent. had sufficient postoperative pain to need morphine, and of these only eight patients, or four per cent. of the whole needed more than one dose.

BOSTON MEDICAL AND SURGICAL JOURNAL.

May 7, 1914.

Results of the Swift-Ellis Intradural Method in General Paresis.—A. Myerson says that patients who receive this form of treatment show changes that are probably the result of it. These changes are the disappearance of the Wassermann reaction and alterations in the chemicocytological composition of the spinal fluid. On the whole, no clinical improvement can be recorded which can be otherwise accounted for. The order of changes is somewhat as follows: The Wassermann reaction seems to be the most variable—the first to disappear, the least stable, and the difficulty in evaluating it lies in the fact that the results obtained by various laboratories vary according to the ability of the technician and serologist. The cell count seems to be profoundly affected by the treatment, but a reduction must not be taken too optimistically. The globulin is perhaps a little less variable than the cell count, does not diminish so much under treatment, and rarely disappears. The albumin content is the most constant of all and is the least affected by the treatment. The Wassermann reaction probably is not nearly so important a criterion of improvement or recovery as it is frequently held to be; it seems to be capricious in its appearance and disappearance; the physical and mental conditions may grow worse and the Wassermann reaction remain negative; it is generally assumed that change for the better is accompanied by a negative Wassermann, a change for the worse by a positive Wassermann, but whatever it may mean, the reaction does not measure the full scope of the paretic process, and the alterations that affect the reaction are only a part of those occurring in the total disease process. The same is true to a less degree of the chemical and cytological changes. Finally, he does not think that the theoretical grounds upon which this treatment is based are valid. It is assumed that because the Wassermann reaction is most constant an hour after the administration of salvarsan, therefore the blood at that time contains more antibodies, which is uncertain because the meaning of the reaction is unknown. The nervous system is not inaccessible, as shown by headache. Other theoretical objections are urged. The treatment should be tried further, but not on every paretic, only in selected groups of cases. Experience teaches much about paresis, and leads to the hope that there is a cure for the disease, although Myerson does not believe the Swift-Ellis method to be such.

The Vesalianum Mistaken for a Fracture of the Fifth Metatarsal by Inversion of the Foot.—William Pearce Coues reports a case in which the presence of this rare bone led to difficulty in diagnosis. The occurrence of this bone in the foot is so unusual that it is not mentioned by Sobotta, Piersol, Gerrish, Morris, Macalister, or Gray. A very few x ray experts and surgeons are familiar with it, although it is not mentioned in many modern books on fractures. Dwight's description is as follows: "The vesalianum, corresponding to the bone of the same name in the hand, is the proximal and external part of the tuberosity of the fifth metatarsal. It is excessively rare. I have never seen it in the macerated foot of an adult. Spronck has seen it at birth, and I think I have probably made the same observation. I have once seen it in the skiagraph of a girl of twelve years. The entire base of the fifth metatarsal varies much in size. The vesalianum is usually more or less marked off by a groove on the plantar surface. Grüber has seen a proximal epiphysis not to be confounded with the vesalianum distinct in the adult."

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

May [illegible], 1914.

Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis.—W. C. Voorsanger has used this procedure in fourteen selected cases within the past two years. Only those cases should be chosen which, after a fair trial, do not respond to ordinary methods. Three were advanced cases, and of the other eleven patients, two could not be inflated—one on account of adhesions, the other on account of an old pleurisy with effusion. Three cases were arrested, one patient is rapidly improving, and four are progressing favorably, being inflated at intervals of four weeks. Two patients

stopped treatment of their own will. All cases were, whenever possible, controlled by röntgenograms before operation and before the second inflation. All compressions were made by the Forlanini method, with five per cent. novocaine anesthesia. Real success in applying artificial pneumothorax, the author believes, lies with the manometer; for one is sure that he is in the pleural cavity when the manometer registers negative pressure. He does not agree with those who assert that artificial pneumothorax should be performed only in a hospital or sanatorium.

Radium Treatment of Cutaneous Epitheliomas with Single or Massive Doses.—A. S. Clark cites twenty cases and the following conclusions: 1. Radium is an efficient and satisfactory means of attacking these lesions, if used in sufficient quantity. 2. The single or massive dose method will probably prove the best. 3. It is a stable remedy emitting a constant amount of rays, which is not the case with Röntgen rays, even with the pastils now at our disposal. 4. Cosmetic effects are at least equal to those of any other form of treatment. 5. Its ease of application, comparative painlessness, and harmless appearance recommend it to patients. 6. Length of exposure can be practically determined; it depends on the amount of radium and character of its container, its distance from the lesion, location of the lesion, character of the lesion (whether superficial or deep), and age, health, and susceptibility to other rays, such as the sun's, of the patient. 7. Two disadvantages are its high cost and length of time of exposure.

Heteroplastic Tissue Grafting Effected through Röntgen Ray Lymphoid Destruction.—J. R. Murphy states that the relation between lymphoid tissue and the mechanism which causes the failure of heteroplastic tissue grafts, has been considered in a recent report (*Journal A. M. A.*, January 17, 1914.) If inferences from the experiments reported are correct, it should be possible to effect heterotransplantation in the adult by lessening the activity of lymphoid tissue; as a matter of fact, this has now been accomplished by two methods: the subcutaneous injections of benzol, and the use of Röntgen ray. The present preliminary report relates exclusively to the latter. After describing two series of experiments, the author says it is well known that the Röntgen ray, given in small amounts, affects first and most the lymphoid system. That heteroplastic tissues grow in animals treated with the Röntgen ray strongly suggests that it is the removal of the lymphoid barrier which makes this possible. The same conclusion was arrived at in connection with experiments on heteroplastic tissue grafting into chick embryos alone, or with splenic or bone marrow tissue.

Treatment of Gonorrhea and Its Complications with Antigonococcic Serum.—B. C. Corbus concludes: 1. The complement fixation test is a trustworthy guide in the administration of serum. When it is negative, the serum should not be used. 2. The amount injected should be at least from thirty-six to forty-five c. c., administered intramuscularly—from twelve to fifteen c. c. daily for three days. 3. Serum sickness, though distressing, need not be alarming. 4. A negative complement fixation test after two or three months shows a complete cure.

Diagnosis of Stricture of the Esophagus.—A. A. Crump describes a new method which, in brief, is the use of a bag made of sausage skin or goldbeater's skin into which a thick bismuth mixture, after being swallowed by the patient, is allowed to flow from an irrigator. Advantages are that skins can be easily obtained, that the involvement below, as well as above, is ascertained, and there is assurance of a good outline in an early as well as in a late stage of the process.

MEDICAL RECORD.

May 9, 1914.

Practical Management of Chronic Osteoarthritis.—P. W. Roberts concludes: 1. A majority of sufferers from progressive osteoarthritis may be relieved by the use of glandular preparations, rest, and immobilization or other local measures indicated by the character of the case. 2. A diagnosis of osteoarthritis may be established before the stage of deformity has been reached. 3. In treatment, the importance of time should be clearly understood by both physician and patient. Rapid results are seldom attained. 4. Rest or complete immobilization of affected joints is essential in the treatment of pain. 5. Contracture deformities of the knees and ankles should always be corrected. 6. Innovations in treatment and the hobbies of a single investigator should be avoided by the general practitioner until their value has been proved. 7. A joint not entirely ankylosed should never be considered hopeless.

The Loose Kidney Question.—R. T. Morris believes that fixation is required in circumstances like the following: When a loose right kidney's motion in the retroperitoneal plane brings it against the duodenum, and the mechanical pressure results in various gastrointestinal disturbances; when symptoms of biliary obstruction result from pressure upon the common bile duct by a loose right kidney behind the peritoneum; when a loose right kidney moves along a backward plane and the ureter becomes angulated, so that we have evidence of obstruction to the ureter; when a loose kidney results in torsion or angulation of its bloodvessels, and congestive nephritis results; when a loose kidney places stress upon the great web of sympathetic nerve filaments which carry efferent impulse to the semilunar ganglia, and disturbance of all the organs affected by this impulse is caused. There are many cases of loose kidney in which this condition represents but one symptom of neurasthenia in patients with a habitus enteropticus. All peritoneal visceral supports may be relaxed, and the organs appear to adapt themselves to each other in a way, becoming companions in misery. In these circumstances, fixation of a loose right kidney alone would be harmful; in such cases it is seldom the chief cause of disturbance. The question resolves itself into one of good diagnosis. We are not to fix a loose kidney simply because we have found one; and, on the other hand, we are not to allow patients to suffer unnecessarily because physicians have learned that

many loose kidneys are not productive of special disturbance.

Ether Oil Rectal Anesthesia.—H. C. Luke says that in administration of ether, the dose or amount administered should be under direct control; which, in turn, exercises a fairly definite influence on the dose or amount actually absorbed. This fundamental requirement does not appear, for a number of reasons, to be fulfilled here. Among the reasons of this are the inaccurate doses, as pointed out; the patient's age and rate of absorption; position of the solution in the large intestine, which has a marked influence on the rate of absorption; pathological conditions of the rectum, sigmoid, or descending colon, the varying amount of intestinal surface exposed to the action of the mixture. The assertion that even and constant evaporation of ether takes place from the mixture would hardly seem valid. Another theoretical objection is the possibility of a special form of toxemia from absorption, for a powerful solvent is placed, immediately before it is to enter the blood stream, in direct contact with a variable amount of highly toxic intestinal material. The routine use of morphine is said to be necessary with the rectal method, and this has the disadvantage of depressing the respiratory centre and locking up the secretions; objections which here seem to have special import. The respiratory centre cannot utilize its protective function against overdosing, as in the inhalation methods. The advantages of the oil-ether method, outside of its simplicity, seem to be more apparent than real. In fact, with the possible exception of selected cases of bronchoscopy, it is difficult to see any indication for its use which cannot be met as well and probably more safely, by modern pulmonary methods. To point out some of the theoretical shortcomings of a method does not necessarily condemn it; but, by presenting the possibility of undesirable or dangerous symptoms and results, it may help to temper with conservatism the lighthearted manner in which many of these new methods are taken up, especially by the inexperienced.

AMERICAN JOURNAL OF SURGERY.

March, 1914

The Management of Burns.—J. C. Plain considers the following line of treatment the best for preventing infection and protecting the tissues. The burned area with the surrounding surface is sprayed or mopped with hydrogen peroxide and the entire surface then mopped with gauze. Strips of gauze, which have been previously soaked in a two per cent. solution of picric acid in dilute alcohol, are then applied, and over this a thin layer of cotton, held in place with adhesive strips or a roller bandage. This dressing may remain until it is soiled. It should then be removed, the wound cleansed with hydrogen peroxide and fresh gauze, soaked in the picric acid solution, applied. About the third day open all blisters and mop away the fluid contents, applying a fresh dressing as before.

AMERICAN MEDICINE.

April, 1914

The Internal Secretions and Their Limitations.—C. E. De M. Sajous states that, from his viewpoint, very few glands produce an internal secretion in the sense that their product has a *specific* influence on the functions of all other organs as true hormones, i. e., on the body at large. To endow with an internal secretion so many structures as is at present done undoubtedly serves greatly to obscure the whole problem and to hamper progress. He treats first of organs which, judging from the evidence available, do not appear to produce internal secretions. He has long held that the pituitary is not a secreting gland, and regards it as coordinating two important functions; the first of which is the protection of the body against disease and poisoning. Extracts of the posterior pituitary and the gland itself cause effects identical with those of adrenal extracts. In the posterior lobe the adrenal principle is present, though in close organic combination with other substances, a fact which is shown when one applies the chromaffin test; a marked positive reaction is obtained and this shows that the organ itself forms part of the chromaffin system, composed of adrenal tissue and sympathetic ganglia and nerves. This introduces the second function that he attributes to the pituitary, that is, to its neural lobe. Its connection with the chromaffin system stamps it as a sympathetic ganglion, and it has long been his belief that it is the chief ganglion of the sympathetic and chromaffin system. The pineal does not possess the attributes of a secreting organ, and the effects obtained with its extracts are accounted for through the fact that the abundant large granular nuclei it contains are very rich in nucleins. It appears to be more of the nature of a nervous organ capable of influencing, directly or indirectly, the peripheral circulation, and particularly that of certain organs, the genitalia and skin especially, during development. There is still no ground for the belief that the thymus is the source of an internal secretion, and more than ten years ago, he came to the conclusion that it is the main organ upon which the osseous, cerebrospinal, and nervous systems depend for phosphorus during their development. The glycogenic function of the liver does not belong to the category of an internal secretion. The second series of organs are those which do not produce an internal secretion possessed of a specific action throughout the body, but are intended to influence only those structures which form part of the mechanism to which the secreting organ belongs—the testes, ovaries and corpora lutea, and kidneys. This class might be termed *autonomous* internal secretions. Finally Sajous speaks of those structures which undoubtedly produce an internal secretion or hormone capable of influencing the entire organism. Summarizing the functions of the thyroid and parathyroids, it may now safely be said that their secretions are essential to the metabolism and development of the body, while taking part also in the processes which protect it against infections and intoxications. As is well known, the adrenal secretion, represented by its active principle epinephrine, raises the blood pressure and increases the cardiac contractions, while slowing the heart. Moreover, as shown more recently, it governs the sugar content of the blood; thus influencing carbo-

hydrate metabolism, so important to muscular activity. There is no doubt that in time the adrenal secretion will be proved also to take an active part in oxidation and general metabolism, though at present it can only be asserted that it sustains the tone of the cardiovascular system, and perhaps of the skeletal muscles, and that it influences carbohydrate metabolism. The subdivisions of the various organs into inactive, autonomously active, and active glands may serve to elucidate the therapeutic action of either division of the organs. The specificity of the cells constituting an organ suggests that when it is used therapeutically we should obtain its specific *general* effects only when using *true* ductless glands, like the thyroid or adrenals. In the case of the autonomous glands, the specific effects would affect only the organs of the system under the influence of the autonomous gland of that system. The action of this autonomous secretion on the body at large, though due to byeffects, would be of major importance, however, in that it would be necessary to the physiological dynamism of all cells by contributing substances normally utilized in the physiological upkeep of all tissues. As regards the glands deprived of a true internal secretion, their action would be that of their chemical constitutents; those of the posterior pituitary, for example. The nucleins of the thymus, however, would contribute to the actual needs of the body up to puberty; disappearance of the organ coinciding with completed development. All this is in accord with the teachings of clinical experience, and seems to raise the whole subject out of the realm of empiricism.

SURGERY, GYNECOLOGY AND OBSTETRICS.

March, 1914.

Pyloroplasty.—J. M. T. Finney and J. Friedenwald, from a study of 100 cases of pyloroplasty, believe that they are justified in drawing the following conclusions: The operation has its greatest indication in the relief of pyloric stenosis due to chronic ulcers, situated at or near the pylorus and on either side of it, or resulting from cicatricial contraction following the healing of ulcers. It is often a useful procedure in cases of hemorrhage due to gastric ulcers on the lesser curvature, or to duodenal ulcers which cannot be controlled medically, and which threaten the life of the patient, as well as in the chronic dyspepsias from ulcers which have not been relieved by medical treatment. The only contraindications to the operation are inability to mobilize the duodenum when adhesions are too dense, and thickening and infiltration about the pylorus due to hypertrophic forms of ulceration. These conditions, however, in their experience occur but rarely. In atony or gastroptosis with slight motor insufficiency such as is observed in the watertrap stomach, or in nervous dypepsia, that is, in gastric disturbances not dependent upon organic disease, this operation is contraindicated. Its special advantages lie in affording the opportunity to excise all ulcers in the anterior walls of the stomach or duodenum after direct inspection of the part affected, also the application of treatment to ulcers situated in the posterior wall. From their experience, the immediate as well as the final results are most encouraging. In some instances partial gastrectomy or gastroenterostomy is undoubtedly the best operation, yet, on account of the simplicity and satisfactory end results, pyloroplasty will continue to retain its position as a safe and useful proceedure.

End Results in Operations for Cancer of the Breast.—E. S. Judd and W. E. Sistrunk, following a review of ten years' work in the Mayo clinic draw the following conclusions. 1. Results in operations for cancer of the breast are as good as, if not better than results in operations for cancer elsewhere. 2. The prognosis in younger people who receive the benefit of an early operation was better than had been expected. 3. The prognosis is variable in a certain number. An extensive external involvement may give a fair prognosis, while a slight external lesion may terminate early from internal metastasis. 4. Metastasis may occur many years after operation, though in the great majority of instances it will appear in the first few years, if at all. The difference between the percentage of patients living more than three to five and ten years is not as great as might be expected, because most patients who die of the disease die within the first three, or at least the first five years. Living five years without recurrence is an indication of but slight trouble in the future. 5. Comparing these with results of former years, it is believed that results are improving because patients come earlier to operation and not because of any improvement or change in the technic.

Abscess of the Testicle.—J. D. Barney states that the testicle is protected from infection by its tunica albuginea on the one hand, and by its rich blood and lymph supply on the other. Arguing from an embryological viewpoint, the testicle, like the kidney, may be regarded as an excretory organ. As bloodborne organisms reach the epididymis and testicle with equal freedom and frequency, it would appear that the latter has a selective function, rejecting certain organisms and harboring others. Most of the testicular infections are hematogenous. A few probably are lymphatic in origin. Infection of the testicle resulting in abscess and without epididymal involvement is exceedingly rare.

Etiology and Bacteriology of Leucorrhea.—A. H. Curtis summarizes the following views of leucorrhea: The uterine cavity tends to remain free from bacteria in cases of leucorrheal infection, but mucous secretion from the cervix may promote the development of purulent discharges. The usual seat of purulent discharges is the lower genital tract. In unmarried women, gonorrheal infection precedes the development of chronic leucorrhea in most instances. A chief part played by the gonococcus consists in preparing the soil for other organisms. The great contingent of leucorrheal bacteria consists of anaerobes, of which Gram negative bacilli form a large proportion. It is highly probable that these bacteria play an active part in the production and maintenance of leucorrhea. Common aerobic organisms, such as Bacillus coli and staphylococci, seem to be of minor importance.

Proceedings of Societies.

ACADEMY OF MEDICINE, GENITO-URINARY SECTION.

Regular Meeting, Held Wednesday, March 18, 1914.

The President, Dr. J. F. McCarthy, in the Chair.

Papilloma of Bladder; Ureteral Calculus; Nephrolithiasis; Nephroureterectomy.—Dr. Edwin Beer presented cases of these conditions, the first one of recurrent papillary tumor of the bladder, illustrating the difficulty of pathological diagnosis, the limitations of the high frequency treatment, and the relief by operation in apparently hopeless conditions. The patient, a man, was operated upon in 1905 for a papillary tumor of the bladder, through a suprapubic incision. The pathologist reported papillary carcinoma. In 1906, the patient had a stone in his bladder which was crushed. In 1911, he was turned over to Doctor Beer with a most extensive recurrent papillary tumor of the bladder, which tumor or tumors filled practically the whole of the bladder, being attached to the anterior wall and running up to the vertex, the trigonum being spared. This enormous tumor was treated with the high frequency current innumerable times for one year, with resulting extensive destruction of the major part of the growth, and with relief of most of the patient's symptoms, such as pain and frequency. From July, 1912, to the end of that year the patient was not treated systematically, and the tumor grew again to its previous size. With this increase in growth, all the symptoms returned, and the patient was continuously under the influence of morphine. In these circumstances, suprapubic cystotomy was determined upon, with the idea of introducing radium into the bladder and thus effecting a cure.

At this operation, in January, 1913, about ten pedunculated papillary growths were ligated and cut off, and a handful of broken off villi were curetted from the interior of the bladder. The pathological report on these specimens was papilloma, in contrast to the first report, which showed such atypical proliferation that the pathologist, Doctor Mandelbaum, was compelled to call it papillary carcinoma. Radium—unfortunately too weak—was left in the bladder for a total of 130 hours. Following this operation, the patient had temporary relief, but within a few months the agonizing pain and frequency returned and morphine again had to be administered continuously, and there was progressive deterioration of the heart and kidney activity, with edema of the legs. The suffering was so intense that the patient constantly threatened suicide. Under these circumstances, after a cystoscopy which showed the whole bladder practically covered with tumors, the trigonum being spared, it was decided to risk everything and do an extensive suprapubic excision. In November, 1913, the bladder was again opened, and the scar in the anterior wall was excised with the adjacent tumor covered bladder. With the wide approach to the interior of the bladder, several dozen pedunculated growths were cut off, some being ligated and others cut off with the Paquelin cautery. For almost forty minutes every suspicious spot in the interior of the bladder was cauterized. The large hole in the bladder was then sewed up, and a suprapubic drainage tube left in. After a rather stormy first week, the patient made an uneventful recovery, and was completely relieved of his symptoms. In February, 1914, and again in March, a thorough cystoscopy was performed, and the bladder was found to be free from neoplasms except for two tiny papillary growths near the suprapubic scar and up in the vertex of the bladder.

The next two cases illustrated to what size stones in the pelvis of the kidney might develop. One of the patients was a young man who was admitted with a diagnosis of ulcer of the duodenum. Cystoscopic and x ray examination showed a stone in the right kidney. In December, 1913, a large calculus was removed by incision of the pelvis. Then a plastic operation was done upon the pelvis to reduce its enormous size. The whole posterior wall of the pelvis was excised, and the two lips of the incision were sewed together with a continuous suture, so that the ureter opening was placed in the most dependent part of the newly formed pelvis. The ureter itself was followed down for several inches to see if it was constricted, but only a few adhesions were found between it and the lower pole. The wound in the pelvis healed kindly, and the patient was discharged, no urine having escaped.

The other patient was a man, fifty-two years of age, who had been operated upon in 1901—right sided nephrolithotomy. He was well for five years, and then began to have attacks of colic in the left kidney region. An x ray, in 1907, showed stones in both kidneys. Examination of the patient in 1911 showed distinct stone crepitus in the left kidney region. In 1912, another x ray picture showed two large stones in the left kidney, one measuring five and one half inches in circumference. Though five years had elapsed between the x ray pictures, the stones, judging from their shadows, had grown only moderately. The x ray, moreover, showed a stone in the right kidney. In January, 1912, a left sided nephrotomy was done, and the calculi were removed. It was found advisable not to dislocate the left kidney, and a nephrotomy was done in situ. The lower half of the left kidney was found to be studded with multiple abscesses. Recovery was uneventful.

The next two cases were of ureteral calculus. The first patient was a man, twenty-seven years of age, who had had an attack of pain nine years ago in his right loin. From that time up to ten months ago he was absolutely well. Since ten months, he had had paroxysmal attacks of pain in the right groin, most frequent when working hard. He had frequent urination and burning in the urethra. The urine contained many pus cells and red blood cells. Cystoscopy showed a normal bladder, with no obstruction to the catheters in the ureters, but in the right ureter there was evidence of dilatation. X ray examination showed a stone in the lower pelvic ureter about the size of an olive. A subsequent x ray showed that the catheter had dislodged the stone upward; in other words, it was a movable stone. The ureter was partially filled with argyrol, and the picture showed a marked dilatation of the

ureter, which was so twisted that in some places it crossed the median line. On February 25, 1914, an extraperitoneal ureterotomy, alongside the rectus muscle, was performed. In the position of the ureter at the bifurcation of the iliac artery, a structure was found simulating the ureter. Its enormous size and general appearance suggested the extraperitoneal surface of the cecum. After some dissection, it became evident that this large gutlike structure was the enormously distended ureter. A ligature was thrown around the ureter with the idea of preventing the escape of retained urine, following incision. An unsuccessful attempt to locate the stone by palpation compelled the incision of the ureter close to the bifurcation, and then with the Mayo forceps the stone was extracted from the lower ureter. The patient made an uneventful recovery.

The next case was that of a man, twenty-nine years of age, who suffered from a calculus in the lower pelvic ureter. The x ray picture showed the shadow in this position, and it was decided to operate upon the patient in exactly the same manner as in the previous case. The x ray showed that the stone, which had been in the pelvis close to the bladder at the first examination, had moved up to about the iliac crest, so that it lay opposite the transverse process of the fourth lumbar vertebra. It was necessary, therefore, to change the operative procedure, and the stone was reached by a lumbar ureterotomy.

The next two cases were of renal tuberculosis with marked involvement of the lower ureter. The same operation was employed. The kidney was first removed, leaving the ureter attached. The ureter was dissected free from the lumbar incision as far down as possible, and a ligature was applied The patient was then turned over on his back and the ureter was liberated through an anterior pararectus muscle incision down to the bladder wall. By pulling on the ligature, the ureter was identified. In the second incision, after cutting through the ureter with the Paquelin cautery close to the bladder, by drawing on the kidney, the dissected ureter was drawn out of the lumbar wound without spilling any of its contents.

One of these cases was that of a man, twenty-one years of age, who complained of the usual bladder symptoms associated with renal tuberculosis. A cystoscopic examination showed two tubercles near the right ureter opening, which was swollen and hyperemic, and admitted no catheter. These tubercles were excised for microscopic study, and showed typical miliary tuberculosis. The bladder urine contained tubercle bacilli. The left ureter was easily catheterized, and the urine was normal in every detail. It was evident that they were dealing with a right sided renal tuberculosis, and with stenosis of the lower end of the right ureter. On January 12, 1914, the patient returned and was again cystoscoped; the right ureter opening showed very few changes, no congestion, no edema, no tubercles, and only a slight thickening of the bladder wall over the intramural course of the ureter. A very thin stream of indigo carmine was projected from the right ureter, whereas a normal stream was seen at the left ureter opening. On January 13th a nephroureterectomy was performed, and the patient made an uneventful recovery. The frequency of urination stopped within a day or two after the operation.

The second patient with tuberculosis of the kidney presented himself with a history of three attacks of terminal bleeding in 1911. He had in the same year a tuberculosis of his right testis, which was removed. A cystoscopy performed in January, 1912, showed a swelling of the bladder wall behind the right ureter opening, corresponding to the position of the seminal vesicle. The lips of the right ureter were slightly more rigid than is normal, and the mucous membrane around the orifice was absolutely smooth. The catheterized specimens obtained at that time gave a positive guineapig test on the right side; negative on the left. Both urines were perfectly clear, containing very few cells.

In view of the positive guineapig test on the right side, no tubercle bacilli in repeated smear examinations having been demonstrable, the patient was again cystoscoped after the use of a provocative tuberculin injection, and in April, 1913, the tubercle bacilli were found in the smear of the urine derived from the right kidney. This clinched the diagnosis of right renal tuberculosis, as the guineapig test alone, without a positive smear, is only suggestive of a diagnosis of renal tuberculosis; whereas the smear is of prime importance. The patient refused operation and asked to be treated with the Friedmann vaccine, with which he was inoculated three times, once by Doctor Friedmann and twice by Doctor Rambaud. He was placed under the most satisfactory hygienic conditions, but despite this treatment the urine continued to contain tubercle bacilli. Accordingly, on February 11, 1914, the kidney and ureter were removed by the same technic as in the previous case. The kidney specimen showed absolutely no healing process as the result of the Friedmann vaccine treatment.

Doctor Erdmann had been especially interested in the demonstration of the forceps. Only a few weeks before he himself had had to go after a calculus, and there he used an ordinary Poor forceps. A few weeks ago it had struck him that in doing gallbladder surgery, the transduodenal method of reaching the stone in the common duct could be obviated with a Blake forceps, and he felt that the forceps would be of great service in ureteral work. He was very glad to learn that there is one for this purpose.

Doctor Hyman had followed Doctor Beer's case from the first treatment, having given the patient the anesthetic in 1905. The patient had practically run the gamut of all known treatment for vesical papilloma. After his first recovery, he was treated with resorcin, but made very little improvement. Two years ago, when Boctor Beer was away, he had taken care of the patient, and sparked him every week or so. At that time the tumors showed a very slight tendency to disintegrate under high frequency treatment. His present good condition was surprising, considering what he had gone through. His urine was almost perfectly clear. There

were not many pus cells, no blood, and only a trace of albumin. At the stage he was in now, it was easy to spark any growth that might appear, for he had a fairly large capacity of the bladder. It was interesting to note two important facts in connection with this case: the absence of renal infection where for years there had been a marked cystitis, and that during all this time the tumor showed no tendency to undergo malignant changes.

Doctor KEYES asked if Doctor Beer considered both smears and guineapig culture essential for a diagnosis. He had not been able to get tubercle bacilli by the smear in all of his cases. In one instance where the guineapig test was negative, a subsequent smear was positive. Yet insistence upon a positive smear would let a good many cells escape. He also wished to know the exact period that intervened between the cystocopies. The first was very much inflamed and the second had apparently spontaneously cleared up without any treatment.

Doctor BEER replied that in the latter case there had been some seven weeks between the first and the second cystoscopy. He did not wish to give the impression that the bladder was markedly inflamed, but there were swelling and two tubercles, both of which were excised. There was partial occlusion of the ureter. He had stated that a positive guineapig culture was not conclusive evidence of renal tuberculosis; it was also necessary to have a postive smear from the collected urine. In practically every case the smear was positive before operation. If not positive from the simple smear, a provocative tuberculin injection was made and then in practically every case positive smears were obtained. There had been a number of positive guineapig experiments where the end results showed no renal tuberculosis. There was contamination from tuberculosis in lower tract or excretory tuberculous bacilluria. In one case both guineapigs inoculated died of tuberculosis indicating, apparently, bilateral renal tuberculosis. The patient had now been well for a year and a half.

Surgery of Hourglass Bladder.—This paper, by Dr. J. BENTLEY SQUIER, appears in this issue of the JOURNAL, page 1026.

Doctor BUERGER had not had enough experience to know whether such a procedure would be wise in all cases. It would seem that there was one possible weakness. If the adhesions between the bladder wall and the diverticulum were not firm, there might be leakage. In his one case, a diverticulum holding twenty to twenty-six ounces, he had been able readily to dissect off the diverticulum from the bladder, so that the ureter was not injured, and one could easily see that when adhesions were not present, there might be a leakage into the perivesical space.

Doctor SQUIER said that the possibility suggested by Doctor Buerger had occurred to him at the time of operation, but there seemed to be an intimate connection between the posterior surface of the bladder and the anterior part of the diverticulum, and he had tried to make such a suture that there would be no water forced through. The patient had a complication during his convalescence, which was not a bladder complication, but an acute inflammation of the parotid gland, which subsided under a five per cent. solution of ichthyol.

Argyrol in the Parenchyma of the Kidney after Pyelography.—Doctor BUERGER had once called attention to the fact that collargol when injected into the pelvis of the kidney for purposes of pyelography might penetrate deeply into the parenchyma as far as the surface of the cortex. He was now able to add that argyrol too in forty per cent. strength might not only find its way through the renal substance but also cause extensive necrosis. He recited the history of a man suffering from hydronephrosis into whose kidney pelvis twenty c. c. of argyrol had been injected. Eight days later nephrotomy, partial decapsulation, and drainage of the pelvis of the kidney were performed. The stripping of the capsule revealed bluish black areas that had the appearance of gangrenous parenchyma. A section extirpated for microscopic examination disclosed extensive infiltration of the renal tissue with argyrol, necrosis, inflammation, and hemorrhage. The patient made an uneventful recovery, although the kidney was simply drained. A false report had apparently found access to recent literature to the effect that Doctor Buerger's first case had succumbed after the collargol injection. This report he wished to correct, since the patient was still in perfect health.

Doctor BEER said that an interesting point connected with these cases was whether the silver salt ascended the tubules because of the pressure, or because of that peculiar activity that was seen in other tubular structures, whereby granules ascended against the normal main currents.

Doctor FURNISS, in making pyelographs, had until recently been injecting argyrol or collargol with a syringe. Of late he had used the gravity method with a pressure of twelve inches above the kidney. In a recent case he had noted that with a pressure of twelve inches, there was pain, but when it was reduced to seven or eight inches the pain was relieved. As several pictures were taken of this patient at one sitting, and this procedure repeated three or four times with the same results, it indicated that the pain was due to pressure. On this patient he used a No. 5 catheter and the fluid ran in at a rate of one c. c. a minute. As there was an obstruction to the outlet of the kidney pelvis, this would indicate that the flow was not as rapid as in cases presenting no obstruction to the return flow. Fifteen per cent. collargol would run through a catheter much more rapidly than water, which was due to the greater specific gravity of the solution. While in most of these cases, it seemed that the pain was due to pressure, he had observed more pain for a longer time after argyrol or collargol injections than after boric acid or silver nitrate used for therapeutic purposes.

Doctor SQUIER recalled the case of a lady whose kidney was removed some six months after collargol irrigation of the pelvis, and the drug was found still present in large quantities. It was a case of pyelonephrosis, in which the kidney had undergone extensive degeneration. There was very little parenchyma left, but the collargol was definitely in the pelvis of the kidney a number of months after its injection.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Gunshot Injuries. How they are Inflicted, their Complications, and Treatment. By Colonel Louis A. Lagarde, United States Army Medical Corps (Retired), Late Commandant and Professor of Military Surgery, United States Army Medical School, etc. Prepared under the Direction of the Surgeon General, United States Army, and Published by Authority of the Secretary of War. New York: William Wood & Co., 1914. Pp. ix-398. (Price, $4.)

The subject of gunshot injuries has undergone such radical change since the publication of Otis's work that the need of a new treatise on the subject was urgent. The two particulars in which this change has shown itself are, first, in the character of the wounds inflicted by the modern bullet and, second, in the treatment of gunshot wounds. The present volume devotes a chapter to a very interesting description of the lesions caused by the various forms of projectiles, including those used by the different nations of the world. The author's military experience has fitted him to make this comparative study of the various armaments and their effects. The chapters on the symptoms and treatment in general of gunshot injuries are followed by the special chapters dealing with the various regions of the body. The medicolegal aspects are considered separately at the end of the book. This work will be welcomed both by military and civil surgeons. The author has done his work well, presenting the subject in a concise and systematic manner; it will doubtless receive the general recognition which it deserves.

The Early Diagnosis of Tubercle. (Oxford Medical Publications.) By Clive Rivière, M. D., F. R. C. P., Physician to Outpatients, City of London Hospital for Diseases of the Chest, Victoria Park E., Physician, East London Hospital for Children, Shadwell, E. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1914. Pp. x-260. (Price, $2.)

Any effort directed toward the suppression of the great white plague should receive the utmost encouragement. The author of this small book has made a valuable contribution in classifying the diagnostic signs of this dreaded disease. In the early pages, he strongly emphasizes the necessity of a very careful examination of the chest in every case and gives special hints to aid in arriving at definite and correct conclusions. At the same time, he points out the fallacies of certain methods sometimes used and upon which considerable dependence is placed by many physicians. He further defines the importance of the various tests and remarks upon the significance of their results. The text shows evidence of considerable time and earnest efforts having been spent in its preparation. Many valuable statistics are given and frequent references are made to authorities of note and their opinions quoted. Part I considers the disease in adults, while Part II is confined to the discussion of the malady in children. The illustrations are good, well executed, and easily followed. The small volume appears to be practical to an exceptional degree and should be of distinct value both to the student and the busy practitioner.

Handbuch der Hygiene. Unter Mitwirkung von Geh. Obermedizinalrat Dr. R. Abel, Berlin; Kaiserl. Baurat J. Boethke, Berlin; Geh. Medizinalrat. Prof. Dr. C. Fraenkel, Halle; Prof. Dr. E. Friedberger, Berlin; Prof. Dr. U. Friedemann, Berlin; Dr. H. A. Gins, Frankfurt A. M. et al. Herausgegeben von Prof. Dr. M. Rubner, Geh. Medizinalrat, Berlin; Prof. Dr. M. v. Gruber, Obermedizinalrat, München, and Prof. Dr. M. Ficker, Berlin. III. Band, 3 Abteilung. Die Infektionskrankheiten. Pathogene tierische Parasiten. Mit 192 Abbildungen und 32 farbigen Tafeln. Leipzig: Verlag von S. Hirzel, 1913. Pp. 392.

The third volume of this monumental German work covers the entire field of parasitology in a most exhaustive manner. Some 200 pages are devoted to protozoa, about sixty pages to worms, and thirty pages to insects. The illustrations comprise an appendix of beautifully executed colored plates. The bibliography is complete and up to date. As far as we know there is nothing in the English language to equal this work in scope as well as in the treatment of the subject, and any one interested in parasitology will find it an indispensable work of reference.

Phantom der normalen Nase des Menschen. Von Dr. Hans Busch, Stabsarzt a. D., Hals-, Nasen-, und Ohrenarzt in Spandau. 3 farbige Tafeln mit 6 Deckbildern und 34 Seiten erklärendem Text. München: J. F. Lehmann's Verlag, 1914. Pp. 34.

The author has presented a useful little work for students and physicians, especially for those who contemplate taking up the study of the nose as a specialty. With the phantom, which appears to be unusually well constructed, is a concise, but sufficiently descriptive text, thus permitting the reader quickly to orient himself with the most important tissues and the anatomical relationship of the various parts composing the normal nose. The closing pages contain a classification, in numerical order, of the numerous structures as presented by the drawings and described in brief throughout the text.

The Nature of Enzyme Action. Monographs on Biochemistry. By W. M. Bayliss, M. A., D. Sc., F. R. S., Professor of General Physiology, University College, London. Third Edition. (Revised and Enlarged.) London, New York, Bombay, and Calcutta: Longmans, Green & Co., 1914. Pp. 180. (Price, $1.50.)

In this, the third edition of the above named monograph, Professor Bayliss brings the vast subject of enzyme action, so to say, up to date, much new matter having been added, while work which had been unable to stand the test of renewed investigation was curtailed. The subjects of reversibility, the combination between enzyme and substrate have been practically rewritten and simultaneously simplified. We hope the chapter on oxidation processes will undergo the same treatment in a future edition, for it hardly seems to convey the available knowledge on the subject. While this and the other monographs on biochemistry published under the auspices and editorial direction of Doctor Plimmer and Doctor Hopkins are necessarily restricted to investigators, they are invaluable to them and merit the greatest encouragement.

The Supposed Death Rates of Abstainers and Nonabstainers and Their Lack of Scientific Value. By Edward Bunnell Phelps, M. A., F. S. S., Author of *Tropical Hazards,* etc. New York: Thrift Publishing Company, 1913.

Mr. Phelps shows the inaccuracy of the data which prohibitionists and temperance societies use to carry on their campaigns. He asserts that there are many careful observers, and by no means necessarily drinking men, who firmly believe that these movements have decidedly overshot their mark and worked real injury, instead of good, to the general welfare, not only, for instance, by the misguided abolition of "the canteen" at the United States Army posts, but in the arbitrary and unreasoning interference with the public schools in the way of insisting on the adoption of biased and unscientific textbooks, forcing children to study subjects which they cannot grasp, and insisting that the teachers of these children, whatever their own views may be, shall accept and inculcate in their pupils as absolute truths mere opinions on the subject of alcohol and tobacco which have been stamped with the approval of misguided enthusiasts.

A Textbook of Histology. By Frederick R. Bailey, A. M., M. D. Fourth Revised Edition, Profusely Illustrated. New York: William Wood & Co., 1913. Pp. xviii-644. (Price, $3.50.)

The fourth edition of this textbook, which is calculated to aid the student of medicine in his laboratory work, is based on the same satisfactory plan as the former edition. The work has been completely revised and contains many new illustrations. Probably the most complete and valuable chapter is that on the nervous system, a contrast with the short and rather deficient chapter which precedes it, upon the various ductless glands. The chapter on general technic is very satisfactory and the student is not overburdened with obsolete methods. On the whole, this new edition clearly maintains the well merited reputation of its predecessors.

Interclinical Notes.

Persons who have been carried away by the attractive but sometimes specious program of eugenics, should read The Psychological Limit of Eugenics, by Herbert Adolphus Miller, Ph.D., in the *Popular Science Monthly* for April. "Too little attention has been given to either psychology or sociology by the eugenists, and unjustifiable conclusions have been drawn," says Doctor Miller, and his points are well taken.

* * *

The Army Makes a Convert is an interesting article in the *Outlook* for May 10th, by Harold Trowbridge Pulsifer. We do not think that armies will be required much longer unless some other work than fighting can be found for them. When looting and rape were abolished, an awful blow was given to war, and now that whisky is to be tabu, there is really nothing left to take a man from the comforts of peace in a large city. Some philosophers look forward to the restoration of all the attractive horrors of war, but we doubt if they will return in our time. If nations had any sense of humor, the paradox of the Red Cross would have stopped war fifty years ago. To be sure, the powder and armor making industries have to be considered.

* * *

It was announced in the *Evening Journal* for May 14th, by the celebrated poetess of pleasure and passion, that a new society had been founded to endow beds for fallen women. Whatever may be said of the novelty of the idea, it is certainly a very practical charity and will save the beneficiaries a large part of their ordinary expenses.

* * *

The Faker, by Katherine Metcalf Roof, in *Women's Stories* for April 15th, depends for its strength on the relentless and overpowering honesty of the young and of those who have never had to earn money in this difficult civilization of ours. After a man has had to soil his delicate hands with work for a number of years, his ideals, sad to say, are likely to undergo a certain blunting. There was once a physician who, in time of great stress, split a fee, and although nothing would induce us to mention his name, he is recognizable by his ineffaceable look of remorse; but analogous practices, we are credibly informed, are looked upon lightly by some aged and experienced business men.

* * *

The editor of the *Red Book* lays great stress on the "scientific" character of the stories of Arthur B. Reeve. To be sure, there is much scientific machinery in The Sleep Maker in the May number of the Chicago magazine, ethyl chloride and hyoscine hydrobromide, for example, and a glass hypodermic syringe with a steel needle, but the effects accomplished with these properties are much beyond the capabilities of any scientist outside a story.

* * *

It is a shame for Cyrus Townsend Brady, in the May *Red Book*, to put such a vulgarism as "overly" into the mouth of his heroine; especially when she had just demonstrated a remarkable knowledge of Shakspere's exact phraseology.

Meetings of Local Medical Societies.

Monday, May 25th.—Medical Society of the County of New York; Poughkeepsie Academy of Medicine.

Tuesday, May 26th.—New York Psychoanalytic Society; New York Dermatological Society (annual); Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Pathology); New York Medical Union; New York Otological Society; New York City Riverside Practitioners' Society; Valentine Mott Medical Society, New York; Washington Heights Medical Society, New York.

Wednesday, May 27th.—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Society of Internal Medicine (annual); Schenectady Academy of Medicine.

Thursday, May 28th.—New York Academy of Medicine (Section in Obstetrics and Gynecology); Ex-Intern Society of Seney Hospital, Brooklyn; Medical Union, Buffalo; Hospital Graduates' Club, New York; New York Physicians' Association.

Friday, May 29th.—Academy of Pathological Science, New York; Hospital Graduates' Club, Brooklyn.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending May 13, 1914:

Banks, C. E., Senior Surgeon. Granted five days' leave of absence from May 15, 1914. **Derivaux,** R. C., Assistant Surgeon. Directed to proceed to such points in the Southern States as the officer in charge of the malaria investigations may indicate for the purpose of making malaria surveys, collecting specimens, etc. **Foster,** M. H., Surgeon. Directed to proceed to Saratoga Springs, N. Y., to make a reexamination of an alien for the purpose of ascertaining the result of the grattage operation. **Leake,** J. P., Passed Assistant Surgeon. On request of the State Board of Health of Kentucky, directed to proceed to Bowling Green, Ky., and such other points in that State as may be necessary to make an investigation of smallpox and the relation of vaccine to its prevention. **Pettus,** W. J., Surgeon. Granted two months' leave of absence, with pay, from May 21, 1914, and three months' leave of absence without pay, from July 21, 1914, with permission to go beyond the sea. **Ruoff,** J. S., Assistant Surgeon. Relieved from duty at the Marine Hospital, Stapleton, N. Y., and directed to proceed to the Sanatorium, Fort Stanton, N. M., and report to the medical officer in charge for duty and assignment to quarters. **Spratt,** R. D., Passed Assistant Surgeon. Granted four days' leave of absence from May 16, 1914. **Taylor,** R. A., Technical Assistant. Directed to proceed to such points in the Southern States as the officer in charge of the malaria investigations may indicate for the purpose of making malaria surveys, collecting specimens, etc. **Trask,** J. W., Assistant Surgeon General. Detailed to attend the meeting of the National Conference of Charities and Corrections to be held in Memphis, Tenn., May 15, 1914, for the purpose of presenting a paper before the Public Health Section of the conference; also to stop en route at Bellbuckle, Tenn., for the purpose of delivering a public health address at the Training School for Boys in that town. **Vogel,** C. W., Surgeon. Granted one day's leave of absence, April 22, 1914, and fourteen days' additional leave of absence, from April 29, 1914, on account of sickness. **Wertenbaker,** C. P., Surgeon. Granted one month's leave of absence on account of sickness, from May 10, 1914. **Wynne,** R. E., Acting Assistant Surgeon. Directed to proceed to Martinsburg, W. Va., for duty in field investigations of the public health.

The following named passed assistant surgeons have been directed to report to the chairman of a board of commissioned medical officers at the Bureau, June 11, 1914, for examination to determine their fitness for promotion to the grade of surgeon: A. M. Stimson, W. C. Rucker, Richard H. Creel, R. E. Ebersole, and J. W. Trask.

The following named assistant surgeons have been directed to report to the chairman of a board of commissioned officers at the Bureau, June 8, 1914, for examination to determine their fitness for promotion to the grade of passed assistant surgeon: R. A. Kearny, W. F. Draper, and J. M. Gillespie.

Promotion.

Assistant Surgeon Carlisle P. Knight promoted and commissioned as passed assistant surgeon, effective March 25, 1914.

Boards Convened.

Board of commissioned medical officers convened to meet at the Bureau, June 8, 1914, for the purpose of examining certain assistant surgeons to determine their fitness for promotion to the grade of passed assistant surgeon. Also to convene at the Bureau, June 11, 1914, for the purpose of examining certain passed assistant surgeons to determine their fitness for promotion to the grade

of surgeon. Detail for the board: Assistant Surgeon General W. G. Stimpson, chairman; Senior Surgeon H. W. Austin, member; Surgeon H. S. Cumming, recorder.

Detail for board of commissioned medical officers convened for the preparation of a new *Nomenclature of Diseases* amended as follows: Assistant Surgeon General W. C. Rucker, chairman; Assistant Surgeon General J. W. Trask, member; Passed Assistant Surgeon Hugh de Valin, recorder.

Board of medical officers convened to meet at Detroit, Mich., for the reexamination of a detained alien. Detail for the board: Senior Surgeon H. W. Austin, chairman; Assistant Surgeon J. H. Linson, member; Acting Assistant Surgeon K. L. Weber, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending May 16, 1914:

Bevans, J. L., Major, Medical Corps. Will proceed to Galveston, Texas, for temporary duty with Field Hospital No. 7. **Birmingham,** H. P., Colonel, Medical Corps. Ordered to Vera Cruz, Mexico, for duty. **Borden,** William B., First Lieutenant, Medical Reserve Corps. Relieved from duty at Soldiers Home, Washington, D. C., and will proceed to Fort Washington, Md., to accompany troops to Fort Sherman, Canal Zone. **Coe,** Henry C., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Washington, D. C., to deliver address to the graduating class of the Army Medical School. **Connor,** Clarence H., Captain, Medical Corps. Ordered to Galveston, Texas, for duty with Evacuation Hospital No. 1. **Dosher,** J. Arthur, First Lieutenant, Medical Reserve Corps. Ordered to active duty at Fort Caswell, N. C. **Eckert,** Meyer M., First Lieutenant, Medical Reserve Corps. Ordered to active duty at Fort Wood, N. Y. **Fisher,** Lieutenant Colonel, Medical Corps. Relieved from duty as commanding officer of the Walter Reed General Hospital, and ordered to report to the Surgeon General of the Army for duty. **Ford,** Clyde S., Major, Medical Corps. Relieved from further observation and treatment at the Walter Reed General Hospital, and directed to report to the Surgeon General of the Army for temporary duty. **Hansell,** H. S., Captain, Medical Corps. Relieved from temporary duty at the Presidio of San Francisco, Cal. **Harris,** H. P., First Lieutenant, Medical Reserve Corps. Directed to proceed to Galveston, Texas, for transport duty. **Hart,** K. L., Captain, Medical Corps. Directed to proceed to Galveston, Texas, for transport duty. **Jones,** Harold W., Captain, Medical Corps. Relieved from duty with Ambulance Company No. 2, Second Division, and will proceed to Fort Sam Houston, Texas, for duty with Ambulance Company No. 7. **Keefer,** Frank R., Lieutenant Colonel, Medical Corps. Granted ten days' leave of absence. **Kennard,** H. W., First Lieutenant, Medical Reserve Corps. Ordered to active duty with Second Division, Texas City, Texas. **Kinard,** K. W., First Lieutenant, Medical Reserve Corps. Directed to proceed to Galveston, Texas, for transport duty. **Lawson,** J. H., First Lieutenant, Medical Reserve Corps. Ordered to active duty at Fort Jay, N. Y. **Lyster,** T. C., Medical Corps. Ordered to proceed to Vera Cruz, Mexico, for temporary duty. **McDiarmid,** N. L., Captain, Medical Corps. Ordered to return to his proper station, Presidio of San Francisco, Cal. **McKinney,** Garfield L., Captain, Medical Corps. Ordered to proceed to Galveston, Texas, for duty with Ambulance Company No. 8. **Maddux,** H. C., Captain, Medical Corps. Relieved from duty at Fort Bayard, N. M., and will take the first available transport for the Philippine Islands. **Noble,** R. E., Major, Medical Corps. Ordered to Vera Cruz, Mexico, for duty. **Peed,** George P., Captain, Medical Corps. Ordered to Galveston, Texas, for duty with Evacuation Hospital No. 1. **Phillips,** J. L., Colonel, Medical Corps. Upon expiration of his leave of absence has been directed to proceed to the Walter Reed General Hospital, Takoma Park, D. C., to assume command. **Shaw,** Henry A., Lieutenant Colonel, Medical Corps. Relieved from duty as attending surgeon at Boston, Mass., and will proceed to West Point, N. Y., for duty as surgeon and professor of military hygiene, relieving Lieutenant Colonel Frank R. Keefer, who upon being thus relieved will proceed to Fort Sam Houston, Texas, relieving Colonel William D. Crosby as division surgeon. **Shepard,** J. L., Major, Medical Corps. Ordered to report to Governor's Island, N. Y., for temporary duty. **Smith,** Allen M., Lieutenant Colonel, Medical Corps. Ordered to St. Paul, May 25th, Mankato, May 26th, St. Paul, May 27th, and Minneapolis, May 28th, to inspect the National Guard of Minneapolis. **Truby,** A. E., Major, Medical Corps. Ordered to proceed to Galveston, Texas, to assume command of Evacuation Hospital No. 1, to be organized at that place.

Births, Marriages, and Deaths.

Married.

Cloud—Perot.—In Arrondale Farm, Whitford, Pa., on Friday, May 8th, Dr. Joseph Howard Cloud, of Ardmore, and Miss Elisabeth Perot. **Ford—Morrison.**—In Lowville, N. Y., on Wednesday, May 20th, Dr. Frederick Reynolds Ford and Miss M. Louise Morrison. **Lutz—Witt.**—In St. Louis, Mo., on Thursday, April 30th, Dr. G. A. Lutz, of Ogden, Ill., and Miss Sylvia Witt. **Polk—Dehon.**—In New York, on Tuesday, May 12th, Dr. William Mecklenburg Polk and Miss Maria H. Dehon. **Ralston—Daly.**—In Grand Rapids, Mich., on Thursday, April 30th, Dr. D. Ralston and Mrs. Alice Daly. **Reggio—Lovering.**—In Boston, Mass., on Tuesday, May 12th, Dr. Andre William Reggio and Miss Marian Shaw Lovering. **Seibert—Zellner.**—In Easton, Pa., on Friday, May 1st, Dr. Walter W. Seibert and Miss Elsie Clare Zellner. **Steele—Persley.**—In Catlettsburg, W. Va., on Tuesday, May 5th, Dr. L. E. Steele and Miss Ellen R. Persley. **Thorndike—Kilbourn.**—In Washington, D. C., on Thursday, May 7th, Dr. William Thorndike and Miss Mary Benson Kilbourn.

Died.

Babbitt.—In Auburn, N. Y., on Friday, May 8th, Dr. Otis H. Babbitt, aged sixty-one years. **Binns.**—In Nashville, Tenn., on Friday, May 1st, Dr. John E. Binns, aged seventy-six years. **Brimmer.**—In Minneapolis, Minn., on Monday, May 4th, Dr. Archie E. Brimmer, aged thirty-one years. **Bulluck.**—In Wilmington, N. C., on Wednesday, May 6th, Dr. D. W. Bulluck, aged sixty-one years. **Clark.**—In Concord, N. H., on Monday, May 4th, Dr. E. A. Clark, aged fifty-six years. **Crosby.**—In Warren, N. Y., on Friday, May 8th, Dr. W. P. Crosby, aged thirty-nine years. **Curtis.**—In Milton, Mass., on Thursday, April 30th, Dr. Newton F. Curtis, aged sixty-five years. **Dowling.**—In Middletown, N. Y., on Monday, May 11th, Dr. John W. Dowling, aged forty-eight years. **Eddy.**—In Providence, R. I., on Wednesday, May 6th, Dr. Elmer B. Eddy, aged sixty-five years. **Egan.**—In Chicago, Ill., on Tuesday, May 5th, Dr. Daniel Egan, aged fifty-five years. **Farnum.**—In Denver, Col., on Sunday, May 3d, Dr. Mary T. Farnum, aged seventy-eight years. **Frock.**—In Brooklyn, N. Y., on Wednesday, May 13th, Dr. Aaron David Frock, aged seventy-six years. **Godfrey.**—In Kentland, Ind., on Monday, May 4th, Dr. Lyman M. Godfrey, formerly of Colon and Bronson, Mich., aged eighty-four years. **Goetz.**—In McKeesport, Pa., on Tuesday, May 12th, Dr. George W. Goetz, aged twenty-eight years. **Graham.**—In Pittsburgh, Pa., on Friday, May 1st, Dr. J. Alvan Graham, aged forty-seven years. **Heldrich.**—In Baltimore, Md., on Friday, May 1st, Dr. Philip Heldrich, aged sixty-three years. **King.**—In Emporia, Kan., on Saturday, May 2d, Dr. Robert King, aged seventy-five years. **McCroskery.**—In New York, on Saturday, May 9th, Dr. John McCroskery, aged fifty years. **Richmond.**—In Terre Haute, Ind., on Sunday, May 10th, Dr. W. B. Richmond, aged forty-five years. **Sheffner.**—In Hay Springs, Neb., on Thursday, April 30th, Dr. Alonzo Sheffner, aged seventy-four years. **Tabb.**—In Richmond, Va., on Thursday, May 7th, Dr. H. Cabell Tabb, aged seventy-six years. **Washington.**—In St. Louis, Mo., on Wednesday, May 6th, Dr. Nicholson C. Washington, aged seventy years. **Wells.**—In Providence, R. I., on Saturday, May 2d, Dr. Winfield S. Wells, aged fifty-three years. **Wright.**—In Newark, Ohio, on Tuesday, May 5th, Dr. J. N. Wright.

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HABITUAL CONSTIPATION AND ITS TREATMENT.*

BY MAX EINHORN, M. D.,

New York,

Professor of Medicine, Post-Graduate Medical School and Hospital.

Under the term habitual constipation may be included all cases of retarded bowel movement in which there is no severe organic lesion, no stricture. This general conception can be subdivided into habitual constipation proper, embracing only those troubles of a functional nature in regard to the movements of the bowel—which includes the majority of cases of bowel constipation—and another group in which the constipation is brought on by abnormal conditions, somewhere else—for instance by severe dyspepsia, disturbances of the stomach caused by too much acid, too little acid, etc. The trouble then is not situated in the bowel, but somewhere else. Again, persons with kidney trouble, liver affections, severe typhoid fever, may suffer from this condition, for these diseases may bring on a secondary constipation.

With regard to the symptoms, first, there is no evacuation of the bowel. Instead of having a movement once a day, or perhaps twice a day, we notice that the patient misses having this evacuation for one, two, or three days. The bowels do not move; there is a retardation of the evacuation of the bowel. Many patients show no other subjective symptoms outside of this particular phenomenon, namely the failure of the bowels to move. There is no pain, nothing of which they complain. A number of these patients, however, do show other signs; some of these are a feeling of fullness in the abdomen, perhaps a lack of appetite, the taste in the mouth is not normal, not exactly right, there are dizziness, headaches. Some patients complain that they cannot concentrate their minds upon their work, and ascribe that to constipation. These are the milder forms. When we come to the more severe forms, we find that the patients are despondent, have no ambition, and look at everything from a gloomy point of view. If this is still further increased, we have some cases resembling melancholia. The despondency is so great that we may almost include these patients in a group of melancholiacs.

Now the question is, What causes these symptoms? We know that we find these conditions in persons who are constipated. What brings on these phenomena, which are sometimes very severe? There was a theory which prevailed for a number of years, and still prevails to a certain extent, that if the bowels do not move properly there are some poisons developed in the intestinal tract which are absorbed and cause these symptoms, and this is called autointoxication. You all know about that. This theory was first brought out in France, and soon prevailed in all countries: the autointoxication theory. Now to a group of scientific men that is all right as a theory, but this theory, which has not yet been proved, has been overexaggerated, and many physicians being overanxious in their work, and trying to have their patients follow directions, say to them, for instance: "Now, you are constipated, and there are poisons developing in your system, and you cannot get along that way; you must change your way of living, and must see that your bowels move every day, otherwise the poisons will get the upper hand of you." This leads to great anxiety and fear on the part of the patient. I have treated a number of such patients, physicians and others, who came to me worrying over themselves and looking as if they were almost on the brink of despair, owing to the great anxiety and fear of poisoning which exists in their systems and which does not exist in other persons. I consider this a very important point. The overapplication of this theory has done more harm to patients than anything I know of. If it had been proved, we might still have to act accordingly. Even then we should not frighten the patients. But that is not the case; this theory has not been proved to be a fact. Quite the contrary, I think.

We can rather prove that these symptoms are not in reality caused by any form of intoxication at all. There is a physician living in Warsaw, named Dunin, who was one of the first to emphasize the fact that these symptoms, these nervous phenomena which I have described, are not due to constipation as such, but, quite the reverse, bring on the constipation. It is the reverse condition. He showed that if you have a patient who is constipated and worried, and overanxious about having movements every day, and if you give him a good bromide or other nerve sedative, and tell him not to think about his condition, but to leave it alone—that the bowels move by themselves, perhaps not in every case, but in quite a number of them. He concludes, therefore, that all cases of constipation are due to a nervous state of the organism.

I do not think that in reality we can extend that group to include all such cases of constipation, but

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there is no doubt that a great many of them are originally due to some form of nervous disturbance.

Before we go on to the treatment and management of these cases, it will be well to look into the etiology of constipation. Dunin is a clinician, who has done a great deal to elucidate this matter. As is well known, the custom of having a movement once a day—or twice a day, which is the physiological form—is brought on by the training of the system early in life. Mothers do that with their babies, trying to train them, and that habit it kept up in later life. Now, if something happens to upset that habit, and if it happens not once but a number of times, then we see a way in which constipation can develop. This does occur frequently, owing to our manner of life, to our civilization. Young girls at school, sitting at their desks, may have some inclination to go to the toilet, but they cannot disturb their neighbors, or the teacher may be lecturing, so they sit still and suppress the inclination for an hour or two, and the desire disappears. That may happen one day, then a second, and a third, and so that habit is upset and the bowel movements become irregular. This also happens to persons in business, who may have to get up early and rush to catch a train, and have no time to attend to the matter. They neglect it several times, and attend to it later, and again an abnormal condition is created. This type of constipation is more prevalent in cities than in villages. Among the plain people there are very few who complain of constipation, but we find it among the more highly civilized—those who have to rush and do a great deal in a given time.

Another way in which constipation may arise in otherwise healthy people, is through medication. Sometimes a patient will have an acute indigestion, say; he vomits, and the bowel moves too much, for the digestive tract tries to get rid of the obnoxious material. The patient, instead of letting things take their own way, will take an opiate to relieve his discomfort, and then he becomes constipated for a day or two. If he would only wait and let things take their natural course, probably in two days the bowel would move of itself and by the third day would be normal again. But he is in a hurry, and he takes castor oil, and his bowels move two, or three, or four times, and then he will take an opiate again, and then another cathartic remedy, and so again the regular habit is upset and the bowel does not want to move by itself; peristalsis is retarded, and the patient resorts to more stimulation—and so, in many instances, constipation is developed.

Another way in which an habitual constipation may be developed is through dieting. A patient is put on a rigid diet. He has had regular movements all the time, but he is told not to eat fruit, and to omit potatoes, or perhaps all solid food, and to live on milk, eggs, and soups or milk alone. That changes his habit. Milk produces very little residue, the bowel, which has been accustomed to having a certain amount of fecal matter, has much less, and the peristalsis is weakened, so that it is not strong enough to bring on a movement. The patient thus becomes constipated: and if the diet is extended over a long time, the constipation becomes habitual.

Again, constipation can develop from a lack of fluids. Patients are sometimes told not to take any water. They may have been drinking three, or four, or five glasses of water a day, and then they are told not to take any water with meals; they are also told to walk a great deal. That is very good, too, but in doing this they take more exercise, and lose more fluid, and then they lose weight. The system needs to have enough fluid in the blood and if there is not enough given and everything taken away, the system will try to get as much fluid as it can and retain it, consequently the fecal matter is exsiccated too much, and there is too little bulk left. There, again, the peristalsis is disturbed. A few glasses of water taken during the day would harm no one, but the change of living leads to constipation. So you see there is a great variety of ways in which constipation may develop, and all of these points have a bearing on the treatment.

Now there are still other theories in regard to the etiology of constipation. One is that the muscles of the bowel, the muscularis coli, is thinner than normal, i. e., it is congenitally abnormal. That was the theory of Nothnagel, but while in very rare instances there is an anatomical abnormality—there have been cases found in which the muscularis was a little thinner than normal—yet it is difficult to demonstrate that that existed during life, for prior to death there is much change in the digestive tract; and, again, it cannot be a common cause of constipation, for it is found very rarely.

Another theory is that constipation may be due to an abnormal position of the large bowel—either to a kink or a ptosis, or a too long colon. That was first suggested thirty or forty years ago, before the x ray was known. But a great physician, by the name of Leichtenstern, found that this theory did not hold good, for in autopsies in which the greatest anomalies existed with regard to the position of the colon—in a great majority of the cases—no constipation had existed during life. It may have been that the colon lying very low turned around itself in an angle, but as long as there was no real mechanical obstruction there was no constipation. Leichtenstern therefore maintained that these anomalies do not explain the constipation.

Professor Adolf Schmidt brought out a new point, namely, that habitual constipation may be due to a better process of digestion and assimilation, so that there is very little fecal matter remaining. He asserts that people with constipation utilize more than the normal amount of substance in cellulose material; there is less left undigested, and consequently there is less fecal matter to cause efficient peristalsis for a bowel movement. That is his theory and he wants to prove it by the fact that in cases of hyperchlorhydria (too much acid) we very frequently find constipation.

I do not quite agree with him with regard to the general acceptance of this theory. While it is true that in habitual constipation the bulk of fecal matter is diminished and the absorption is very good—perhaps too good—that is not the cause of the constipation, but rather the consequence. That means that if the fecal matter stays longer than is normal in the large intestine (in the small intestine the sojourn of the chyme is about the same, but the trouble is generally in the colon), more of the material

is absorbed, everything is worked up better and to greater perfection, and the bowel takes up more nutritive substances. If the material remains in the bowel two days, the work is better done than in one day; and the reason why I do not accept Doctor Schmidt's theory as a fact, is the following: I think I was the first to indicate, years ago, that we have a form of constipation due to too much acid in the stomach, and the way to show that, is that if you give such patients alkalies without anything else, their bowels become normal, indicating that the acidity was the cause of the constipation. But this does not embrace the entire group of hyperchlorhydria, though it is one part of them, and we can make it out only by experiments.

While I found that, I also found that cases of achylia gastrica—and I described them at that time—were also accompanied by constipation, and here, too, dependent on the abnormality of the stomach, the fact that no acid was there; and, here also, by correcting the abnormality and giving the patients hydrochloric acid or a diet suitable for the condition, we improve the constipation.

This theory of Schmidt's cannot hold good in the second group just mentioned. There the digestion is very poor; there is a lack, and in some cases no gastric juice at all, and we have to give such patients digestive help, and still we have the constipation, and if we improve that anomaly we have again the bowel movement. So Schmidt's theory is not right, according to my experience, as this class of achylia amply demonstrates.

Now, a few words about autointoxication. I have said that this theory does not hold good, and the way we can prove that autointoxication is not the cause of the symptoms is, that if we cause artificial constipation by giving the patients opiates, these phenomena—dizziness, headaches—do not develop. Such patients can lie quietly without feeling these symptoms. In former years all cases of appendicitis were treated with opiates, and a patient may lie quietly for three, four, or five days without a bowel movement, and nothing happens. There are no symptoms of poisoning. That is another proof that it is not the constipation that causes them.

Again, it has been proved that absorption takes place principally if the fecal matter is fluid. If we have fecal matter that is formed, there is not much to be absorbed. Absorption of obnoxious material cannot occur unless the fecal matter is fluid, and there is an ulcerated area in the bowel. Then we may have a disturbance due to the absorption of some poisonous matter, and that happens principally in the group which has been described as fever due to constipation. There are not many such cases, but they occur more frequently in children. If the bowel is not exactly normal and there is constipation with it, and there is much irritation and a small place of eroded mucosa, then some of the fecal matter can become liquefied and absorption take place, and that gives rise to symptoms accompanied by fever.

TREATMENT.

How shall we manage these cases of habitual constipation? The first point is to reassure the patient and tell him that constipation is not such a great misfortune. That means that he must be assured that if his bowels do not move for a day or two nothing will happen to him. This is a point of great importance: We should try to interfere as little as possible, and to bring back the lost habit of having a bowel movement every day. That can be done by training the system. It will take a long time, perhaps, but ultimately you will succeed—not in every case, but in a great many of them.

The great French physician, Trousseau, was aware of this fact, and he introduced a form of training which was that the patient should go to the toilet every day at the same hour, and try to have a movement. If he fails one day, he goes the next, the third, and the fourth day, and keeps that up. Here, again, a little more detail is necessary, for I have found that some things are done wrong. The rule is that the patient should remain seated for five to eight minutes; he should not exert himself too much, and if he overdoes it, it is worse than time wasted. Years ago I had a patient, a lawyer, who suffered from constipation, and the accompanying symptoms of giddiness, lack of mental concentration, etc. His thoughts were always directed to his bowel movements, and he was an unfortunate man if his bowels did not move. That man told me that most of his law studies were accomplished in the water closet, and when I asked him how long he stayed there, he replied that he would sit there for hours and hours, trying to have a movement. He would take his law books with him, and there he passed the greater part of his time. Another patient told me that in order to have a movement he had to have a cigar, a cup of tea, and a newspaper in the water closet, and there he would sit and smoke and drink tea and read, and that had to be done for half an hour or an hour before he was successful. That is not the way to carry out the treatment. Patients should not sit too long, and should not read newspapers and smoke cigars, but should wait a little time and then leave. If too great an effort is made, the exertion brings on hemorrhoids. Any natural process must be done in an easy way, or some disturbance is sure to follow. So the question of habit is of the greatest importance.

Now, with regard to diet. That should be arranged to facilitate the bowel movements. It is done in the majority of cases by giving bulky foods, fruit, and salads that contain a great deal of organic acids and cellulose, matter which is not digested, bulky foods serving to bring on more efficient peristalsis. I have already spoken of water. Enough water should be given to the patient. Butter is another substance which is good. Special forms of diet have sometimes to be arranged to suit the condition of the stomach, but in a general way a very liberal diet should be maintained. Bran acts well—bran bread. Some physicians (Doctor Gallant) prescribe bran flour, prepared or eaten in its natural state, one tablespoonful, three or four times a day.

Schmidt, acting on his theory that there is too great utilization of the foods taken, introduced agar as a remedy for constipation, but he found that while agar is good it is not enough to bring on a movement, so he combined it with cascara, to regulate the bowels. A few years ago I thought I would like to have some other remedy which would act in a simi-

lar way, and I made a combination of phenolphthalein and agar. This contains three per cent. of phenolophthalein and taken twice a day, or sometimes three times a day in teaspoonful doses, is very beneficial. One advantage of these agar preparations is that the remedy in the agar does not come out quickly from the agar substance, but is absorbed slowly through osmosis, and in this way covers a large area of the intestine. The intestine is long, and if you want to give special remedies for the bowel it is well to give them so that they shall be spread out over a large area. This the agar does, and it also takes up water. That is another quality which is favorable for affections of the bowels, for it lubricates the fecal matter. In constipation too much moisture is taken away by the system, and the fecal matter is too dry and can hardly be pushed along, but the agar swells up and the water in it does not come out; the agar has a greater affinity for the water and retains it, while with other matter it is released more readily. That is the idea in combining agar with remedies for the bowels. I have carried the same principle further and have combined agar with tannic acid for the treatment of diarrhea—to obtain the effect of lubrication and of having the remedy carried over a large area.

Phenolphthalein-agar, a teaspoonful twice a day, is the usual dose. This should not be ground up too fine; if it were in the form of a powder it would be partly absorbed and less efficacious. For this reason the agar flakes should be somewhat bigger. Then I have a combination of rhubarb agar, also about three per cent. This is a little weaker than the phenolpthalein-agar and can be taken in the same quantity as the latter. Although as a rule we should not use too many remedies to cure constipation, still we often cannot get along without them. It is easy enough to say, do not take anything, but if the patient has no movement, he will be dissatisfied, and will leave you and go to another physician. Therefore mild cathartic remedies can and should be given, but the patient should be impressed with the importance of taking as little as possible; trying a certain amount for a little while, and then reducing it slowly and little by little. That is the principal thing. If you can get the patient to do that, you can get him to a point where after a while he does not need to take anything.

Along with the mild cathartic remedy you can also institute a proper diet and a right way of living. There are many other means of helping constipation. There are physical means of treatment, such as massage of the bowel and abdomen. That can be done either by an experienced masseur, or by automassage. The patient can massage the abdomen every morning for five minutes or so, going along with his closed fist over the colon. Professor Sahli advises for this purpose a five-pound cannon ball, which the patient passes over the abdomen, rolling it around in a circle. There are some cases, however, in which massage is not advisable—cases of very lax abdominal walls especially, where the organs are not well protected, so to speak. In such cases, if the massage is a little too rough, inflammation of some organ may result.

Electricity has been applied, by putting one electrode on the abdomen and the other at the back or in the rectum. That is best done with an electrode which permits the water to come slowly into the rectum. Static electricity has been employed by Doumer and others in France. Then there are gymnastic exercises for the abdominal wall—bending, sitting up, rowing, walking, etc.—all that comes under the head of exercises for the strengthening of the abdominal muscles.

Hydrotherapy also has been used—having a douche for the abdomen, going over the entire abdomen, over the colon, etc. Injections into the bowel also form another mechanical measure—plain saline injections, about a quart at a time, may be employed. I usually advise that these be given in the evening, so that the patient has a chance to have a bowel movement spontaneously, and if that fails he can then take the injection.

Kussmaul and Fleiner recommended olive oil injections as a remedy for habitual constipation, and there is a great deal of good in this treatment. Give six to ten ounces of olive oil at blood temperature, injected into the bowel, to be retained over night, and there is usually a movement in the morning. This can be used every night for three or four weeks, then every other night for three weeks, and then twice a week for a long while. Sometimes this treatment is followed by very good results. It is especially important in spasmodic forms of constipation. Boas believes that there is no special form of spasmodic constipation. Schmidt and others think that it is only caused by inflammatory conditions accompanying habitual constipation. This form is benefited more than others by the olive oil treatment. Olive oil in tablespoonful doses has been given by the mouth by Westphalen. Later on liquid paraffin was advocated by Sir Arbuthnot Lane, of London, for the same purpose. A teaspoonful to a tablespoonful of liquid paraffin given twice a day acts well in some cases. The latter has also been advantageously employed in the form of small rectal enemas of three to six ounces.

Ultimately, operations have been advocated for the treatment of habitual constipation. I am not much in favor of them. Doctor Lane's operation and the autointoxication theory go together. I spoke against the one before; I speak against the other now. A patient is frightened, and told that he should be operated upon. He does not know what to do, and he is operated upon. Afterward he may or may not be better, but it is not the thing to be done excepting in rare instances.

Not long ago I was called in consultation, and was told that the patient had a pronounced Lane's kink and autointoxication, and that operation was required. The patient was ready, but said that he wanted my opinion first. I did not want to say anything against the opinion of the attending physician, but suggested that a certain form of treatment be tried for a week, and if the patient did not improve that he could then be operated upon. In a week the patient came to me and said he was feeling better, but that he was still urged to have an operation. I told him that he was his own master and could do as he liked. He was not operated upon, and he is now very well. One should not be too hasty in recommending an operation for this condition. There is no need for haste. Try one thing, and then

another, and if the patient is not in a hurry it is nearly always possible to relieve the condition by the measures above described.

20 East Sixty-third Street.

THE PRESENT STATUS OF ABDERHALDEN'S REACTION.*

By Michael G. Wohl, M. D.,
Philadelphia,
Demonstrator of Pathology and Curator of the Pathological Museum, Medical Department, Temple University.

From studies of the metabolic processes of cells, Abderhalden has evolved a biological test which is used in the diagnosis of pregnancy as well as in that of the function and malfunction of various organs. The new biological conception upon which this test depends, is today of such great moment that in almost all the largest clinics and laboratories abroad, as well as in this country, some work along these lines is being carried on. No practitioner can afford to neglect this new branch of medicine. In order to afford a better understanding of the test, a review of the gradual steps of its development will prove helpful.

The individual cells of the human body are modelled after a general plan, which plan is transmitted by the genetic cells from generation to generation. Each group of cells or organs possesses, in addition, a specific organic structure and therefore performs a specific function of its own. Were this assumption not true we could hardly explain why certain cells secrete certain definite products, the liver cells bile, the adrenals adrenaline, etc. This new biological law, that cells possess a distinct structure of their own, is also borne out by the work of Ehrlich and Uhlenhuth in chemotherapy, as well as by transplantation of tissues.

From the foregoing one may naturally conclude that the various types of cells are the seat of different metabolic processes. It is well known that cells are capable of breaking up complex molecules into very simple ones and conversely, of building up complex molecules from simple ones, e. g., of forming from aminoacids, sugars, and from carbohydrates, fats. During these analytic and synthetic processes there occur intermediate stages during which molecules, or *Bausteine,* as they are called, are formed which fit into the specific architecture of the individual cell.

These metabolic processes of cells are accomplished through the agency of ferments, the action of which is to choose the food for the cells as illustrated in the unicellular organism, Vampyrela spirogyra, which utilizes algæ by means of its ferments. Emil Fischer has compared these ferments to keys which fit into certain locks only, i. e., into certain substrates. Thus, every living cell has within itself a constructive ferment whose specific action is to construct proteins of the same specific composition as the cell itself. Much evidence is available in support of Sajous's (2) opinion expressed in 1907, that "the adrenal principle is the one ferment which endows all other body ferments with their properties as such," and that trypsin, carried to the tissues by certain leucocytes, takes part in cellular exchanges, notably the catabolic phase.

Now, what relation does the intake of food bear to the metabolism of the cells? Can the body cells directly utilize the various substances taken in? A consideration of the process of digestion will supply answers to these questions.

The gastrointestinal tract by means of its enzymes breaks up complex substances into very simple molecules which fit into the structure of the body cells; in other words, the material delivered to the cells becomes *Zelleigen.* The liver and lymphatic system act as control stations, and in case molecules have escaped the gastrointestinal tract without having been changed into their proper "stones" for the cellular structure, then they are still further modified and rebuilt in these laboratories so as to become *Plasmaeigen* and *Zelleigen.* These products are conveyed by the blood, and therefore the qualitative composition of the blood is normally constant. This is also made possible by the fact that the cells in the exercise of their metabolic functions never normally eliminate products which do not correspond to the structure of the blood plasma.

To sum up, then, we find that the process of metabolism goes on regularly. Products are being formed which fit into the cellular structure. The gastrointestinal tract supervises the process so that no strange material gets from the external world into the body. The liver sees to it that only the proper products get from the gastrointestinal tract into the circulation. The lymphatic system prevents the passage into the circulation of strange material eliminated by the cells themselves.

Now, what occurs when substances are introduced into the body by routes other than the gastrointestinal tract, e. g., subcutaneously or intravenously (parenterally)? Is the body left helpless against the intrusion of foreign materials, or are the body cells able to protect themselves against the attack of the strange materials, and, if so, how?

The answer to this question necessitated a series of experiments which Abderhalden and his collaborators have performed. Various laboratory animals were inoculated with albumin and seidepeptone. Upon testing the blood of the animals, a few days later, a ferment was detected having the power to cause cleavage of albumin and seidepeptone. The experiments were repeated with gliadin and edestin, with similar results. The ferment proved to be constant and specific—specific in the sense that it caused cleavage of protein substances only. When, on the other hand, carbohydrates were injected, the ferment obtained was one able to break up carbohydrates only, the protein remaining unaffected.

The origin of these ferments is disputed. Sajous (2), in 1903, stated that the function of leucocytes was to convert the constituents of the ingested proteids into living proteids, and that certain leucocytes brought all ferments to the tissues. This fully agrees with the more recent conception of Abderhalden (1), who believes that the ferments are the products of the leucocytes. Vaughan (3) and his associates accept the view that the ferment

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which is constantly present in the blood, is derived from the leucocytes, and that this nonspecific ferment takes care of small amounts of foreign protein which find their way into the circulation from the alimentary tract, the blood thus having a digestive function. Sajous had previously attributed the same function to trypsin, which he also traced to leucocytes, the substances affected by it, according to him, being protein derivatives, toxalbumins and toxins, amides, leucomaines, and ureides. The other ferment, which is a specific one, is brought, according to Vaughan, into existence by the parenteral injection of protein material; he holds that it is not a newly formed body, but results from an alteration in the atomic arrangement of the fixed body cells with which the parenterally introduced foreign protein comes into contact.

The question of the specificity of these ferments is of the utmost importance; upon its ultimate answer, which at present is not forthcoming, will depend, as will be rendered clear hereinafter, the practical application of the above findings. The work of Abderhalden (42) himself, of Lampé (39), and of Papazula in this direction seems to indicate that the ferments are specific for organic groups only, but not for their derivatives, i. e., the same ferments are obtained upon the injection of the extracts of cells as upon injection of the cells themselves.

The presence of these ferments can be detected in two ways, 1, by the optic method, and, 2, by the dialytic method, the simpler and less expensive of the two. The technic of these will be described at the close of the paper. To these findings of Abderhalden a wide range of application has already been opened. Schmorl and Veit observed that during pregnancy cells of the chorionic villi become detached and are carried into the blood stream. Now, if the observations of Abderhalden already mentioned, are correct, then the blood of pregnant women contains a ferment which would cause cleavage of this intruding material. With this possibility in view, serums of pregnant women were tested, and in every case a ferment was detected which digested placental albumin and placental peptone.

The formation of the ferment could hardly be ascribed, in the light of present knowledge of the subject, to the detachment of chorionic villi, as was originally supposed, for ferments have been shown to be present even fourteen to twenty-one days after delivery. Furthermore, ferments are found in the blood of pregnant mammalia, the placenta of which does not possess chorionic villi, e. g., mares. Thus. the explanation of the formation of ferments has had to be modified, and it is now believed that they result from a disturbance of the metabolic processes of the cells in the vicinity of the placenta, the maternal part of the placenta penetrating the surrounding tissue, which, as a result of these disturbed metabolic processes, eliminates elements foreign to the plasma with consequent production of ferments.

Soon clinicians began to make use of this new reaction. Frank and Heiman (4), as well as Franz and Jarisch (5), found it positive in all cases studied. They also observed that the ferments were absent from the serums about two weeks after delivery. This latter observation is of some importance, as it proves that the ferments are short lived and therefore that they cannot possibly be identical with antibodies, as some experimenters have been inclined to believe.

Schlimpert and Hendry (16), Stange (29), Ferrari (15), Decio (24), Schiff (35), Lichtenstein (40), and others, found that all their cases clinically diagnosed as pregnancy gave a positive reaction, and they have all come to the conclusion that the test is a reliable one. Henkle (8) found the test of special value in the diagnosis of tubal gestation and in the differentiation of pregnancy from tumors of the annexa. Rübsamen and Schäffer (33), who employed the optic method, which gives more accurate results, have also had a favorable experience with the test. Among 190 cases studied by the latter but one failure was observed—in a case of myoma uteri. In some cases, moreover, a positive reaction was noted as early as the eighth day of pregnancy. Meccabruni (36) has likewise obtained positive results with the fetal blood, and believes, therefore, that the fetus participates in the formation of the ferments. Among American workers who have obtained similar results are McCord (25), Judd (43), Jamison and Cole (44), and Schwartz (27).

While the foregoing results favor the procedure, Abderhalden's reaction has not met with the same success in the hands of all those who have tried it. Veit (6), one of the first experimenters, does not accept the reaction as an absolute test of pregnancy. He holds, moreover, that the placenta must be living to give a positive reaction. Abderhalden himself reported a case of salpingitis which gave a positive reaction; although he explained that the reaction was probably due to an abortion, this case, as well as many similar ones reported, remain unexplained, for as we know, the placenta must be living to cause the production of ferments.

Myer (48) reported a negative reaction in a case of extrauterine gestation, while Brahm and Freund (28) found the reaction positive only in one out of every three cases of extrauterine gestation. In the cases of pregnancy they had only seventy per cent. of positive results. Pearce and Williams (26) obtained a positive reaction with placental tissue and the serums in two cases of nephritis, one of tabes, and one of carbuncle; twenty-eight other cases were positive, in accordance with the clinical diagnosis. Engelhorn (12) obtained a positive reaction in only forty-nine out of 108 cases. Among these, the serums in twelve cases caused cleavage of cancerous tissue.

These latter reports would seem at first sight rather discouraging. It must not be forgotten, however, that pregnancy does not exempt patients from having cancer in some part of the body, hence one might get two kinds of ferments, one which caused cleavage of placental albumin and the other of cancerous tissue. The performance of the test is attended with so many difficulties that even in the hands of the most skillful, errors are apt to occur.

A great source of error lies in the serum. Some have admitted that the serum they worked with

had a reddish tinge. This is undoubtedly to be attributed to the occurrence of hemolysis in the serum for some reason; during hemolysis ferments were probably liberated, hence the reading was positive in a clinically negative case. Another frequent cause of unfavorable results is an insufficient addition of toluol to the contents of the thimbles; enzymes are then produced by bacteria which obscure the reading. The thimbles very often get too thick from frequent boiling and may thus give a negative reading in a positive case. To avoid this error we place our thimbles under running water for twelve hours and never boil them.

The preparation of the placenta is one of the greatest sources of error. Abderhalden lays great stress upon the thorough washing of the placenta. It may happen that some parts of the placenta have been thoroughly freed from blood and that when this part is used the reaction will correspond with the clinical diagnosis of the case; another part of the same placenta, on the other hand, may not have been entirely freed from blood, and hence give a false reading. This last source of error may have been responsible for many erroneous conclusions. To prove this point I have taken serum in five cases known to be not pregnant (two cases of dementia præcox and three of epilepsy) with placental tissue perfectly bloodless, and then used the same serum with placenta containing some blood. The results were negative in the first instance, and positive in four cases with the placenta which was not entirely freed from blood.

Placental or any other tissue, when preserved for a long time, may give rise to protein substances which will pass through the walls of the thimbles and give a positive reaction in a negative case. We make it a rule to boil the tissue, and test five c. c. of the filtrate with one c. c. of a one per cent. ninhydrin solution every time we use it for the test; in this way many a false reading is excluded. In our series we had twenty-two cases of pregnancy (four of these were toxic, and will be considered later), and in all a positive reaction was obtained.

No. of cases.	Month of pregnancy.	Tissue used.	Control with serum alone and in some cases placenta and saline solution.
5	5th to 6th	Placenta +	—
2	7th	Placenta +	—
4	4th to 4½	Placenta +	—
7	8th to 9th	Placenta +	—

Three cases of pernicious vomiting—five, six, and 7.5 months, respectively—showed cleavage of liver tissue +, placenta +.

One case of eclampsia liver +, placenta + +.

In two of the toxic cases, kidney substance was not broken up, while the uranalysis showed a heavy ring of albumin.

From a review of all the literature from the time of Abderhalden's first publication to the date of the present writing, and including our own experience, we deem it justifiable to conclude that Abderhalden's reaction for pregnancy stands today on the same level as Wassermann's reaction for syphilis, i. e., the reaction is positive in eighty to ninety per cent. of the cases.

VALUE OF THE REACTION.

Abderhalden's reaction, then, may be looked upon as one of the symptoms of pregnancy, and may be of practical value in differentiating myoma from pregnancy; extrauterine gestation from annexal tumors; in diagnosing pregnancy in obese patients, and as an early diagnostic test where some constitutional disease, such as tuberculosis, necessitates emptying of the uterus.

Moreover, Abderhalden's reaction is proving of distinct aid in the study of the toxemia of pregnancy. In spite of the limited number of toxic cases studied we are tempted to theorize as to the etiology of the toxemia of pregnancy. We think that the toxemia of pregnancy is due to a too rapid cleavage of protein substances which gained access into the circulation on account of some disturbance in the metabolism of the placenta, or fetus, or perhaps both. Liver was broken up in our cases, showing that there is probably a secondary hepatic malfunction. In connection herewith, it may be of interest to note that a guineapig inoculated intraperitoneally with one c. c. of eclamptic serum became restless after fifteen to twenty minutes and scratched every part of its body that it could reach with its paws. A little later it showed some muscular incoordination. Another guineapig was injected with one c. c. of serum of a nine months' pregnant patient, but did not show any symptoms. The symptoms of the first guineapig suggest intoxication with the poison contained in every proteid, as seen in cases of administration of the poisonous group prepared from proteins by Vaughan and Wheeler's method. Yet we refrain at this time from drawing any definite conclusions.

Beside the value of Abderhalden's reaction in obstetrics, it has opened up a glorious vista for further research in pathology and therapeutics. From the doctrine of the specific structure and metabolic processes of the individual type of cell, as we have detailed above, one can readily understand that in cases where a certain group of cells or an organ, becomes diseased, material foreign to the blood plasma may be liberated which will provoke the formation of ferments, detection of which will permit ascertaining what particular organ is diseased. Thus, if a certain serum breaks up the thyroid gland only, it will be deduced that in the patient from whom the serum has been derived the thyroid gland is in a pathological state and secretes substances foreign in composition to the blood plasma. In the literature are to be found some accounts of work along these lines, which in time will lead to the possibility of making a diagnosis of the function or malfunction of various organs in health or disease. Thus, Papazula and Lampé (38 and 39) have studied serum of apparently healthy individuals, and not one has caused cleavage of the various tissues brought in contact with it. In the case of Basedow's disease, however, they found that the serum caused cleavage of the thyroid (exophthalmic), thymus, and of ovarian or testicular tissues. Similar reports have been issued by Kolb and Bauer (19). Let us dwell briefly upon the importance of these findings.

First, as to the etiology of the disease, these results tend to suggest that exophthalmic goitre is due to a malfunction of the thyroid rather than to a hyperthyroidism; for only thyroids from cases of exophthalmic goitre were broken up, while normal thyroid remained unaffected. Secondly, they seem to show that the thymus and genetic organs have some bearing upon the origin of the disease.

That the thymus is affected in Basedow's disease has long been known. Indeed, von Hansemann, Gierke, and others have found from extensive autopsy work that the thymus is hyperplastic in cases of exophthalmic goitre. Through the investigations of Papazula and Lampé and of Kolb and Bauer this has become an established fact.

Postoperative death in exophthalmic goitre has been attributed to hyperplasia of the thymus. At present, by means of Abderhalden's reaction, a hyperplastic thymus can easily be diagnosed and thus many a postoperative death avoided. By this test one can also differentiate hysteria from light cases of Basedow's disease.

Abderhalden's reaction is likewise finding a legitimate field in ophthalmology. Hegner (32) has studied serum of patients with diseased uveal tracts, paying special attention to sympathetic ophthalmia, and has observed that only cases of an acute, inflammatory nature are giving a positive reaction. Although his work has been too limited to permit of drawing definite conclusions, it is to be hoped that further investigation will throw more light upon the subject.

Infectious diseases afford exceptional opportunities for the application of Abderhalden's test. As long as germs are present in the body, the metabolic processes of cells are disturbed and there are eliminated foreign substances which cause the formation of ferments. Undoubtedly these in time will enable us to diagnose infectious diseases. In glanders and miliary tuberculosis the test, in the hands of Abderhalden, has so far proved positive. Berhardt (46), in 1911, transmitted scarlet fever to monkeys by inoculating them with lymphoid tissue from cases of scarlet fever and concludes, therefore, that the virus of scarlet fever has a predilection for lymphoid tissue. That this statement is true is shown by the investigations of Schultz and Grote (47) with Abderhalden in scarlet fever. These observers found a ferment antagonistic to lymphoid tissue in scarlet fever cases from the fifth to the thirty-second day of infection.

Abderhalden's reaction is proving of great value in neurology. Fauser (37), who was first to apply this test in nervous diseases, has found that serum of cases of dementia præcox digests brain cortex, testicle, and ovary. It is interesting to note that testicular tissue was broken up only with the serum of male patients, and ovarian tissue only with the serum of females. In cases of manic depressive insanity no ferments have as yet been detected. Wegener (34), who corroborated Fauser's work, has also found that in cases of neuritis, muscle tissue is broken up. In his cases of epilepsy which had advanced to the stage of dementia, brain substance was broken up. He also found a ferment digesting liver tissue in cases of melancholia.

Myer (48), Fisher (23), Röme and Neue (49) have obtained results similar to those of Fauser, and they also found a ferment which caused cleavage of the thyroid. Brahm has found that the serum of dements sometimes gives a positive reaction with placenta.

From the foregoing observations Fauser (7, 9, and 17) makes inferences as to the etiology of dementia præcox. He believes that the testicle, ovary, and thyroid gland stand in direct relationship to the disease. Very recently Professor Binswanger (50) has published his work with Abderhalden's reaction in cases of epilepsy. He was able to find, immediately after an epileptic attack, a ferment which digested brain substance. Fourteen days after the attack no ferments could be demonstrated. This fact leads him to believe that an epileptic attack is due to a process of cleavage of the brain substance. This view seems plausible, for Ulzheimer has shown that in epilepsy there is a replacement of brain substance by glia cells. This formation of glia tissue is probably the result of the destruction of the brain substance. The test referred to may serve, then, in differentiating an epileptic from an hysterical attack.

In our own series of cases, which we do not consider complete, we have examined fourteen cases of epilepsy and have found that cases which have progressed to the stage of dementia show a ferment splitting up brain and testicular tissue; serum of two of these cases caused cleavage of thyroid tissue as well. Furthermore, three patients who had an attack a few hours before the blood was taken, showed a ferment against brain and testicular tissue. In one patient who had an attack five minutes before the blood was taken from him, the serum showed a strongly positive (deep blue) reaction with brain substance and testicular tissue.

From the few cases of epilepsy that have been at our disposal, we do not feel justified in drawing definite conclusions; yet we cannot refrain from stating our opinion that Abderhalden's reaction will prove of great benefit in throwing more light upon the etiology as well as the prognosis of epilepsy. We fully agree with Binswanger that: "1. If we find a positive reaction during an attack we are sure it is epilepsy and not hysteria. 2. If the reaction is negative during the interval it signifies that there is no progressive anatomical change in the brain, and there is a great probability that with the diminution of the number of attacks a complete recovery will ensue. 3. If the reaction is positive during the interval it means that the case is of a progressive nature, and the prognosis as to cure is grave." We think that the internal secretions (as we found that some of our cases of epilepsy had a ferment against testicular and thyroid tissue) have some bearing upon the question of ferment production.

The vital question of cancer is also being elucidated by Abderhalden's reaction. Epstein (20) has examined forty-seven cases of cancer, and with the exception of one case, cancerous tissue was in all instances digested. Gambaroff (41), who corroborated Epstein's statements, has also found that serum of patients afflicted with sarcoma never causes cleavage of cancerous tissue, but of sarcomatous, and vice versa. This observation points toward the specificity of ferments, yet Frank and Heiman (30), who obtained positive results in about 97.8 per cent. of their cases, observed that the serum of pregnant women breaks up cancerous tissue as well. This latter fact would seem to stand in direct opposition to the foregoing were it not for the possibility of malignancy in pregnant patients. In connection herewith I should like to cite two

cases from our own series: The serum of Mrs. H. was tested with placental, thyroid, testicular, ovarian, and cancerous tissues. None of the tissues was broken up, with the exception of the cancerous. The patient was operated upon and cancer of the small intestine was found. Mrs. S., aged forty-three years, wife of a physician, noticed a lump in her breast which kept on getting larger. The breast was amputated. We tested her blood with cancerous tissue and found it positive. The pathological report was carcinoma simplex. Thus the question of malignancy should be studied in connection with experimental tumor implantation, and there is no doubt that, even if the test does not prove an absolutely positive one in cancer diagnosis, it will prove equal, if not superior to the serum diagnostic tests for cancer recently in vogue, such as Dungern's, Freund-Kaminar's, etc.

Finally, the most recent work done with Abderhalden's reaction should be mentioned. Kabanow (51) has succeeded in differentiating duodenal from gastric ulcer through the fact that the serum of patients with the former affection digests duodenal tissue only, while in the case of the latter gastric tissue was broken up. This would lead to the conclusion of a possible existence of different kinds of ferments acting upon different parts of the digestive tract.

TECHNIC.

In conclusion, let me describe briefly the technic of Abderhalden's test: Half a gram of prepared placental, or any other tissue used for the test, is placed in the thimble, which has previously been tested for impermeability to albumin and regular permeability to seidepeptone; 1.5 c. c. of blood serum absolutely free from hemoglobin is put into the thimble and is dialyzed in twenty c. c. of distilled water. The contents of the thimble and external fluids are covered with sufficient toluol to prevent putrefaction and evaporation. The exterior of the thimble is washed with water, which is prevented from entering the thimble by pressing the top together. The thimble is now kept in the incubator for sixteen hours. Then ten c. c. of the diffusate is removed to a dry test tube and boiled with 0.2 c.c. of a one per cent. solution of ninhydrin. A rod to facilitate boiling is inserted in the tube. If, after standing half an hour, the solution remains colorless, the test is negative. Controls with the serum alone and with the tissue alone, respectively, are to be employed.

Preparation of placental and other tissues.—Free the placenta of blood by thoroughly washing it with tap water. Cut the placenta into small pieces, grind these in a mortar, and remove the last drop of blood that may be present. Now boil the placental tissue for five minutes, adding to the water a drop or two of glacial acetic acid. Repeat this six times, using the glacial acetic acid only for the first boiling. Filter five c. c. of the water of the last boiling, adding to it one c. c. of a one per cent. aqueous solution of ninhydrin, and boil for one minute. If the tube remains colorless, preserve the tissue in a well stoppered bottle to which enough toluol has been added to prevent putrefaction. The preparation of the placenta must be conducted uninterruptedly and under perfect aseptic conditions.

Test for impermeability of thimbles to albumin.—Place the thimbles in water for half an hour. Add to each thimble 2.5 c. c. of a five per cent. solution of egg albumin. Wash off well the outside of the thimble and place it in a beaker into which twenty c. c. of distilled water has been introduced. Cover the contents of the thimble and the surrounding fluid with toluol. Place in the incubator at 37° C. for sixteen hours. Remove ten c. c. of the diffusate and add 2.5 c. c. of a thirty-three per cent. solution of sodium hydroxide. Now pour slowly along the side of the tube one c. c. of a one in 500 solution of copper sulphate. If a violet ring forms between the upper blue layer and the lower colorless layer the thimble should not be used for the test.

Test for permeability of thimbles to peptone.—If the thimbles prove impermeable to albumin, they are next well washed and placed in running water for twelve hours; 2.5 c. c. of a one per cent. solution of seidepeptone is added to each thimble, the sides of the thimble being washed off. Toluol is is added, and the thimbles are put into beakers to which twenty c. c. of water has been introduced and then into the incubator. After sixteen hours ten c. c. of the diffusate is removed and 0.2 c. c. of a one per cent. solution of ninhydrin added. The tube, in which a rod has been placed, is boiled for one minute. If a deep violet or blue color appears after the tubes have stood half an hour the thimbles are permeable to peptone. The thimbles are now again washed and placed in running water for twelve hours. They are then ready for the test.

Optic method.—The technic of this method is very simple, but accurate reading requires great skill and experience. Add to one c. c. of a hemoglobin free serum one c. c. of a five to ten per cent. peptone solution of the organ used. Shake thoroughly, place in the tube of the polariscope, and determine the degrees of rotation after it has reached 37. If no rotation takes place, no ferments are present.

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BROAD AND ONTARIO STREETS.

LOBAR PNEUMONIA.*

Fifty-four Cases Treated by a Special Method.

BY EDWARD E. CORNWALL, M. D.,

New York,

Attending Physician, Williamsburgh and Norwegian Hospitals; Consulting Physician, Bethany Hospital, Brooklyn.

The fifty-four cases of lobar pneumonia here reported form a continuous series, being all of the cases of that disease treated by the writer in two hospitals, the Williamsburgh and Norwegian, of Brooklyn, during the year 1913. A portion of this series, comprising the cases treated in the first quarter of that year, were reported in a paper read before the Kings County Medical Society, April 15, 1913.[1]

The ages of these patients were as follows: Of six patients, less than five years; of seven, between five and fifteen years; of seventeen, between fifteen and twenty-five years; of nine, between twenty-five and thirty-five years; of six, between thirty-five and forty-five years; of six, between forty-five and sixty years; and of three, over sixty years.

The lobes affected were as follows: In twenty-six cases, the left lower lobe; in thirteen cases, the right lower lobe; in three cases, the right upper lobe; in three cases, the right middle lobe; in two cases, the left upper lobe; in three cases, both left lobes; in two cases, both lower lobes; and in two cases, the right lower and middle lobes.

The temperature rose in four cases to 106° F. or higher; in thirteen cases, to between 105° and 106° F.; in thirteen cases, to between 104° F. and 105° F.; in thirteen cases, to between 103° F. and 104° F.; in five cases, to between 102° F. and 103° F.; and in six cases, to between 101° F. and 102° F. Most of the cases with the low temperatures came into the hospital at the time of defervescence.

The pulse rate rose in one case to 180; in four cases to between 160 and 170; in three cases to between 150 and 160; in nine cases to between 140 and 150; in seventeen cases to between 130 and 140; in ten cases to between 120 and 130; in seven cases to between 110 and 120; and in three cases it did not rise above 110.

The respiration rate rose in ten cases to 60 or more; in eight cases to between 50 and 60; in twenty-five cases to between 40 and 50; in ten cases to between 30 and 40; and in one case it did not rise above 30.

Blood pressure records were obtained with the sphygmomanometer in thirty cases. The lowest systolic records thus recorded were as follows, in mm. Hg.: in one case, 70; in one case, 80; in three cases, 90; in four cases, between 90 and 98; in four cases, 100; in seven cases, between 100 and 108; in seven cases, between 110 and 120; in two cases, between 120 and 130; and in one case, 136. In twenty-seven of these cases in which sphygmomanometric records were obtained, the blood pressure expressed in millimetres of mercury fell below the pulse rate. Of these twenty-seven patients in which the blood pressure fell below the pulse rate, only three died, while twenty-four recovered.

Defervescence took place by crisis in twenty-five cases and by lysis in twenty cases. In two of the remaining cases there was delayed resolution; in three empyema developed; in one, which was first seen at the time of defervescence, the duration of the fever was not ascertained; and in three patients death took place before defervescence occurred. The average duration of the fever in the cases which terminated by crisis was 7.3 days; and in those which defervesced by lysis, 8.1 days.

*Read before the Medical Association of the Greater City of New York, March 16, 1914.

[1] E. E. Cornwall, Observations and Suggestions Regarding Lobar Pneumonia, *Medical Record*, August 2, 1913.

Beside empyema and delayed resolution, as noted above, the following complications were observed: Pleurisy with effusion in one case, and pericarditis with effusion in one.

In this series of fifty-four consecutive hospital cases of lobar pneumonia, there occurred four deaths, giving a death rate of 7.4 per cent. The first patient who died was a boy eleven years old, and he died the day after defervescence, from what cause the writer was not able to discover. The second patient who died was a man forty-nine years old, a heavy drinker, who came into the hospital with a grippe pneumonia and a badly dilated right heart, and very low blood pressure. His right heart dilatation failed to improve under treatment, and his systolic blood pressure remained between 80 and 90 most of the time during the next five days. Pulmonary edema gradually developed, and he died on the sixth day of myocardial failure. Shortly before his death his blood pressure rose to 120, probably from partial asphyxiation. The third who died was a woman forty-nine years old, who came into the hospital on the fourth day of the disease, with two lobes involved, a pulse rate of 160, a respiration rate of 60, blood pressure of 90 systolic and 70 diastolic, and extensive pulmonary edema. She was moribund on admission, and died in thirty-six hours. The fourth, who died, was a man fifty-eight years old, who walked round with a consolidated left lower lobe for several days before entering the hospital. He had pulmonary edema on admission, a badly dilated right heart, and a blood pressure of 70 systolic and 50 diastolic. He was moribund when first seen, and died in twenty-one hours. A fifth patient, who was a heavy drinker, had the regular course of lobar pneumonia and defervesced on the eleventh day; and for ten days after defervescence was without fever, and apparently convalescent: he then showed symptoms of a wet brain, and died four weeks after admission. This death is not included among the deaths from pneumonia, because the patient died two weeks after apparent recovery from his pneumonia and from a different disease.

The series of fifty-four cases of lobar pneumonia here reported were treated by a special method. This method exploits no new drug nor any old drug in extraordinary dose; nor does it include the use of vaccines, though the door is left open for them. It is essentially a physiological method, aiming solely to put and keep the patient in the condition in which he will be able most easily to cure himself, and to ward away from him everything that can hamper or impede the natural process of recovery. It possesses distinctive features, both positive and negative, some of which are new features or old features with a new expression. Among these distinctive features are the following.

A point in the hygiene which is considered of importance is to temper the cold fresh air to the afebrile patient. During the febrile period of a well marked lobar pneumonia the fresh air should be cold, but in the aged and in cases with little or no fever, and always after defervescence, the patient should be kept warm and should be protected from drafts. Careless exposure of the patient when he has no fever may be responsible for complications. In these days, when the cold, fresh air treatment of pneumonia has become routine practice, a warning regarding its excessive use, especially when there is no fever, may not be out of place.

A particular and essential feature of this treatment is the regulation of the diet along the following lines: The quantities of protein and fuel given are less than the minimum health rations; the diet as a whole is nonputrefactive; and it includes a sufficient quantity of the food salts needed by the body, especially the calcium salts, of which we have reason to suspect that a deficiency regularly exists in pneumonia. The inclusion of these salts in the diet is of fundamental importance. The purpose of this diet is to supply nourishment sufficient to carry the patient through the short period of this disease with a minimum of trouble from the alimentary tract, that region of special danger in pneumonia, whence may come general poisoning, vasomotor paralysis, nervous disturbances of the heart through reflexes, and mechanical disturbances from distention. This diet in detail, as prescribed by the writer, is as follows:

Prescription 1. To be taken during the febrile period and for three days after defervescence.

8. a. m. Give 7.5 ounces of a two to one mixture of milk and barley water to which has been added 5 grains of sodium chloride.

8:30 a. m. 10 grains of calcium chloride dissolved in 5 ounces of water.

10 a. m. 7.5 ounces of the milk and barley water mixture.

11 a. m. 7.5 ounces of orangeade made with the strained juice of one orange and 1 ounce of milk sugar.

12 m. 7.5 ounces of the milk and barley water mixture.

12:30 p. m. 10 grains of calcium chloride in water as before.

2 p. m. 7.5 ounces of the milk and barley water mixture.

3 p. m. 7.5 ounces of orangeade as before.

4 p. m. 7.5 ounces of the milk and barley water mixture.

4:30 p. m. 10 grains of calcium chloride in water as before.

6 p. m. 7.5 ounces of the milk and barley water mixture.

8 p. m. 7.5 ounces of the milk and barley water mixture.

8:30 p. m. 10 grains of calcium chloride in water as before.

11:45 p. m. 7.5 ounces of orangeade as before.

11:55 p. m. 10 grains of calcium chloride in water as before.

Administer everything through a tube without raising the patient's head.

This prescription, which supplies about thirty-eight grams of protein and fuel to the value of 1,200 calories, thirty-five grains of sodium chloride and fifty grains of calcium chloride, in addition to the salts in the articles of food given, and ninety-five ounces of water, serves as a standard diet, and a maximum diet, except in regard to water, which may be given freely in addition, if desired. Modifications of this prescription may be made as follows:

Modifications of Prescription 1. A. Substitute for any or all of the milk and barley water feedings, any of the following: (a) lactacidized milk, (b) peptonized milk diluted with one third barley water, (c) one of the predigested cereal baby foods dissolved in water.

B. Substitute in place of all the milk and barley water

feedings: (a) barley water alone, (b) rice water alone, (c) water alone.

C. The same as modification B with omission of the orangeade.

D. Reduce the quantity of all feedings to five ounces.

Prescription 2. To be taken on the fourth day after defervescence in uncomplicated cases.

The same as Prescription 1 with substitution of cooked wheat cereal, 6 ounces, with milk, 3 ounces, boiled rice, 6 ounces, with milk, 3 ounces, and milk toast, two slices, with milk, 3 ounces, for three of the milk and barley water feedings, respectively, and omission of the calcium chloride.

Prescription 3. To be taken on the seventh day after defervescence in uncomplicated cases, or as soon as convalescence is assured.

7:30 a. m. Give 6 to 8 ounces of moist cooked cereal with cream, butter, or 4 ounces of milk, two slices of toast with one or two poached eggs, or 1 or 2 ounces of cream cheese or pot cheese, and an orange or a baked apple.

10:30 a. m. 8 ounces of lactacidized milk or 8 ounces of a two to one milk and barley water mixture, with 1 ounce of predigested cereal food dissolved in it.

12:30 p. m. 6 to 8 ounces of milk soup, viz., cream of corn, celery, potato, carrot, or spinach; 6 to 8 ounces of boiled marcaroni with rice and butter, two slices of old bread or toast with butter, 2 ounces of cream cheese or pot cheese, a baked potato, and any of the following vegetables: Spinach, string beans, celery, squash or carrot; a salad of lettuce or raw cabbage with olive oil and lemon juice.

3:30 p. m. The same milk combination as at 10:30 a. m.

6 p. m. 6 to 8 ounces of cooked cereal, rice or macaroni as before, or a plate of milk toast, and a baked apple.

During the night extra feedings of the milk combinations may be given if desired.

Give water as desired.

Another essential and characteristic feature of this treatment is extreme caution and reserve in the use of cathartics. The writer is aware that in condemning the routine and frequent use of cathartics in pneumonia he is going against one of the cherished traditions of the medical profession. He has been led to believe, however, by clinical experience, that patients will generally do better if their bowels are not much nor often disturbed by artificial evacuants, provided that they are fed according to the plan above described. But if their diet should include animal broths and egg albumin, which are culture mediums for the pneumococcus as well as the saprophytic bacteria, and if whole milk is given, which is often a producer of indigestion and gastrointestinal disorders, then cathartics may be needed to relieve the body of injurious bowel contents. With the nonputrefactive, limited diet recommended in this plan of treatment, the bowel contents are generally harmless, and the writer has seen patients with severe types of pneumonia go safely through the disease with not more than one or two bowel movements. There is no question that, in the beginning of the disease, if the bowels have not moved within a reasonable time, a laxative should be given. But the laxative should be a gentle one. In the treatment here outlined castor oil or some other vegetable cathartic is preferred. The popular calomel and epsom salts are looked on with disfavor by the writer, and he believes that the administration of that combination at the beginning of a pneumonia or at any time in its course may add materially to the gravity of the prognosis. The artificial induction of a bowel movement by any means near the time of the crisis or when the heart is undergoing strain, seems to be contraindicated. In this treatment, after an initial gentle purge, simple or soap suds enemas are given every second day if the patient is in good condition, until the expected time of the crisis, which is taken to be the fifth day of the disease; after that time, or at any time if there are signs of heart strain, the bowels are not disturbed.

The treatment of symptoms according to this method is distinguished by conservatism. A few points only in the treatment of symptoms will be touched on here.

If there is severe pain in the early period of the disease, preventing necessary sleep, morphine or codeine is given in moderate doses; but later in the disease, and especially near the time of the crisis, and at any time if there is much respiratory embarrassment, opiates are strictly avoided. Hot poultices are sometimes applied for severe thoracic pain. For relief of restlessness, sodium bromide is the preferred drug. If delirium incites the patient to get out of bed, physical restraint is strictly enforced.

If there is gastric irritability or diarrhea or tympanites, reduction of the diet is the only treatment given. The diet may be reduced to peptonized milk and barley water alone, or barley water alone, or water alone, with the food salts.

If stimulation of the heart is needed, and it is needed more often than not except when the disease occurs in children, it is given according to the following plan. In the aged, in alcoholics, and in patients with preexisting myocardial disease, it is given from the beginning. In young adults with originally healthy hearts it is usually delayed until signs of heart strain appear, which is generally not later than the fourth day. It is considered more desirable to begin stimulation a little before it is actually needed than to wait until the heart has suffered from lack of it. The first stimulant given is strychnine sulphate, in doses of one sixtieth grain three to six times a day. If more stimulation is needed, tincture of strophanthus is given in doses of one and a half minim every four hours. The strychnine sulphate is increased on occasion to one thirtieth grain every four hours, which is the maximum amount of that drug permitted in this disease, and the strophanthus to two or three minims every four hours. In a large majority of cases more than this stimulation is not called for, but if it should be required, caffeine citrate in doses of one to three grains every four hours is added. In cases with extremely low blood pressure, adrenaline is given, hypodermically or by mouth. If there is an obstinately dilated right ventricle, digitalin is given hypodermically, in addition to the other heart stimulants. For extreme dilatation of the right ventricle threatening disaster, the writer believes venesection to be indicated. He has used it in one case (not in the series here reported) with good results. Whiskey, in small doses, is given to alcoholic patients and to the aged if they bear it well.

A feature of this treatment, which is a negative one, but which nevertheless is an essential and characteristic feature, is the avoidance of certain therapeutic procedures which are very generally employed. Among such procedures which are

specifically avoided in this treatment are the following: The use of calomel and salts, and the production of violent or frequent catharsis by any agent; the use of antipyretics; the use of analgesics or hypnotics of the coaltar class; excessive heart stimulation, especially with digitalis, and the use of that drug under any circumstances by mouth; the use of expectorants, intestinal antiseptic drugs, and diuretics; and the use of creosote carbonate, quinine, urotropin, camphor, or any drug for a specific bactericidal effect.

From the report here given of fifty-four hospital cases of lobar pneumonia in continuous series with only four deaths, of which two occurred in patients who were moribund when first seen, no positive conclusions can be drawn because the number of cases is too small. Pneumonia is a disease of extremely varying character; according to Cole's recent investigations, there are at least four distinct types of pneumococcus; and anything like positive conclusions can be properly drawn only from statistics of a very large number of cases. There are few diseases, in fact, about which it more becomes us to be reserved in drawing conclusions from statistical data than pneumonia. The history of pneumonia therapeutics is full of immature conclusions which proved too feeble to live. But although the report of this series of cases may not serve as a basis for positive conclusions, it may be and is suggestive. Particularly suggestive are the following facts observed in the study of these cases:

1. The temperature in seventeen cases, nearly one third of the series, reached or exceeded 105° F., but only one of the four deaths occurred among that seventeen.

2. The pulse rate in seventeen cases, nearly one third of the series, reached or exceeded 140, and in thirty-four, nearly two thirds, it reached or exceeded 130; and in many of these cases the rapid pulse persisted for considerable periods; and the clinical observation was made, that after reaching a stage where the circulatory signs and symptoms pointed to a speedy collapse, according to experience in the past with other methods of treatment, the hearts in a number of these cases showed an unusual endurance which enabled them to keep on beating until the time of defervescence came with recovery.

3. The systolic blood pressure, expressed in mm. Hg., fell below the pulse rate in twenty-seven out of thirty cases in which sphygmomanometric records were made, but out of that twenty-seven cases which showed this supposedly bad prognostic sign, only three were fatal, while twenty-four ended in recovery.

4. Pronounced vasomotor paralysis was not observed in any of these cases after admission to the hospital.

5. Tympanites in noticeable degree was not observed in any of these cases, excepting those which entered the hospital with it; and in those cases, barring two moribund, it soon lessened markedly or disappeared.

1218 PACIFIC STREET, BROOKLYN.

THE RECOGNITION OF MENTAL DEFICIENCY.*

BY LOUIS E. BISCH, M. D., PH. D.,
New York,
Visiting Neurologist, [illegible]; Neurologist to the [illegible]; Consulting Neurologist to the Methodist [illegible]; Neurological Institute; Lecturer, Educational Psychology, Columbia University.

Roughly speaking, the mental defective, or ament, may be divided into three great classes: the idiot, the imbecile, and the moron or high grade feeble minded subject. The last is the mildest degree of mental defect, and, according to the definitions adopted by the Royal Commission on the Feeble minded as a basis of classification for their inquiries, the moron is "one who is capable of earning a living, under favorable circumstances, but is incapable, from mental defect existing from birth, or from an early age, of competing on equal terms with his normal fellows, or of managing himself and his affairs with ordinary prudence."

The imbecile, or medium grade ament, is defined as "one who, by reason of mental defect existing from birth, or from an early age, is incapable of earning his own living, but is capable of guarding himself against common physical dangers"; while the idiot, the lowest grade ament, is "one so deeply defective in mind from birth, or from an early age, that he is unable to guard himself against common physical dangers."

These, like all definitions, are subject to many exceptions, and it must be understood further that there is no sharp line of demarcation among the three types outlined above. Furthermore, examiners usually make additional differentiation, and so we hear of high and low grade idiocy, high and low grade imbecility, etc.

Binet and Simon, in 1908, published a series of tests, which are generally known as the Binet Measuring Scale of Intelligence, and which they tried to correlate with the classification of the feeble minded most generally accepted. Binet was of the opinion that in intellectual development, language is the mental faculty most intimately involved, and, in accordance with this idea, he considered the idiot as one who never reaches the plane of spoken language and is limited to the use and understanding of gesture, while the imbecile understands spoken language, and can himself talk with varying degrees of fluency; the moron not only being able to use spoken language easily, but being capable also of learning how to read and write. Adapting this differentiation to the Binet scale, he considered the idiots as falling within the age groups one to two, the imbeciles, to the age groups three, four, five, six, and seven, and the moron, to the age groups eight, nine, ten, eleven, twelve.

Binet's point of view, then, is different from that of the Royal Commission, and although it is not safe arbitrarily to diagnose a patient's mentality merely according to the age groups into which he may fall according to the Binet scale, the Binet test is, however, the best standard of mental development that we have. Many objections to it have been offered, and many revisions have been made

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since Binet and Simon first published their results, and besides, many other tests have been devised, but I will deal with these matters somewhat more fully, later on.

Merely to group all the feeble minded under the three headings, idiot, imbecile, and moron, is entirely inadequate, for there are certain types of amentia that present enough physical or neurological signs and symptoms to entitle them to diagnostic names of their own. So we have the microcephalics, the hydrocephalics, the mongols, the cretins, the epileptics, amaurotic family idiocy, Little's disease, beside what is known as arrested development, due to an encephalitis, or to any cause whatever, and retardation, due to remediable physical defects such as adenoids, enlarged tonsils, errors of refraction, tuberculosis, neurotic make up, etc.

To speak of a patient as a mongol, for instance, gives no indication whatever of his degree of mental development, nor any hint as to his potentiality for such development, therefore it is convenient to speak of a mongolian idiot, or of a mongolian imbecile, or, referable to cretinism, to idiocy due to cretinism, or imbecility due to cretinism, always remembering, however, that there is such a thing as idiopathic idiocy, imbecility, and moronism. To put it another way, when we use the terms idiot, imbecile, and moron, we mean psychological development, but many cases can be further differentiated and named because of the physical characteristics which they present.

Sometimes it is very easy to determine whether a patient is feeble minded or not, and sometimes it is extremely difficult. The drooling, inarticulate, grimacing idiot can be recognized at a glance, but it is an entirely different matter with the higher grades of amentia. Sometimes the defectiveness is due to sense deprivation—deafness, for example; sometimes the patient is suffering from a psychosis such as dementia præcox; while again, with the so called moral defectives, persons who are frequently normal according to the Binet standard, but who display, in spite of careful upbringing, strong vicious, or criminal propensities, it is sometimes impossible to make a definite diagnosis and prognosis, until the patient has been kept under observation and examined several times. Properly to clarify a case, therefore, it is necessary to do a psychological, physical, neurological and mental examination.

At the "Clearing House" for Mental Defectives, Post-Graduate Hospital, each patient is first given a Binet test by a trained psychologist, and, after that, he is examined by a physician. The Binet test consists of a series of questions, arranged in group, ages from three to fifteen years, and four or five such questions are listed under each year, although there is no gradation between ages twelve and fifteen. For instance, a child of three years should be able to point to its nose, eyes, and mouth; to repeat "it rains," "I am hungry"; to repeat a number of two digits; and to state what it sees in five different pictures that are shown. A child of eight years should be able to tell the difference between a fly and a butterfly; between wood and glass; between paper and cloth; to count backward from twenty to one; to repeat the days of the week; to count three one cent stamps, and three two cent stamps; and to repeat a number of five digits. A normal child of five years should be able to answer correctly all the questions listed under the ages three, four, and five, and none under six, but one seldom has cases so sharply defined, and usually, a patient, let us say of ten years, will be able to answer some of the questions of ten, some of nine, and perhaps some of eleven, but, by figuring the percentage of correct answers under each age, it is easy to calculate the mental age. By dividing the mental age by the physical age, a so called mental coefficient can also be obtained.

At first glance it seems a very simple matter to perform a Binet test, but Binet himself realized from the start that certain prerequisites concerning the examiner and the environment are necessary.

In the first place, writes Binet, for a satisfactory examination use an isolated, quiet room. Be alone with the child as much as possible. . . . Meet the child pleasantly, do not stare at him when questioning; if he seems timid constantly reassure him, not only by a pleasant manner, but by using one of the tests which seems most like a game (pictures or making change). Encourage constantly in a kind way throughout the examination, show satisfaction with the answers, whatever they are. Never criticize, and do not lose time by making a lesson of it. . . The object is to judge the mental plane of the child, not to instruct it. Above all, never aid the child by a supplemental explanation which may put him on the right track. One is often tempted to do this, and it is wrong. One feels uneasy and fears the child has not understood. The test is the sort that *should* be understood. Hold closely, then, to the formula for each test without addition or retraction. Encouragement should be given by the tone of the voice, or by words wholly devoid of meaning which serve only to stimulate such as, Go on! Quickly now! Hurry Up! Good! Very good! Perfect! Marvelous! etc. If it is necessary to have a visitor, insist upon his absolute silence.

Commence with each subject by using the test designed for his age. If too difficult tests are tried at first he is discouraged. If, on the contrary, they are too easy, he grows disdainful, wonders whether he is being made fun of, and makes no effort.

In reference to the experimenter . . . he must not allow himself to be prejudiced by information obtained through other sources. He should banish from his mind all that he has been told concerning the child, and consider him as an x which he must solve with the means at his power.

The individual who uses the test should have served an apprenticeship in the pedagogical laboratory, or possess a thorough practical knowledge of psychological experimentation. Binet himself is more liberal in marking a patient's answers than is the unskilled worker as a rule, and, in most of the series, two of the questions answered correctly out of three, or three out of five, are interpreted as passing marks.

An expert examiner soon begins to learn that the way the patient answers the question is as important, if not more important than what he answers, and so it is customary at the clearing house to have the psychologist write on the reverse side of the Binet sheet whatever he considers of importance in this particular—whether the patient was attentive, distracted, nervous, interested, serious, or frivolous, and so on. One learns also that there are typical feeble minded responses to certain questions, such as, "What is a fork?" "A fork is a fork"; or, in answer to the following question, "A person who was walking in the forest at Fontainebleau suddenly stopped,

much frightened, and hastened to the nearest police, reporting that he had seen hanging from the limb of a tree a—What?" and the patient answers, "An apple." The other day, when the patient was given the following question, "My neighbor has been having strange visitors. He has received one after the other—a physician, a lawyer, and a clergyman. What has happened at the house of my neighbor?" The patient answered, "A marriage"; and, in view of the activities of the eugenists, I suppose the answer "marriage" should be considered as correct as the usual one, "A dying man."

As a rule, idiots have a fluctuating attention, and sometimes it is entirely absent. They cannot abstract ideas, and are decidedly deficient in memory and imagination. Their use of language is limited, and is sometimes monosyllabic and inarticulate. Their motor responses are either sluggish or uncontrolled.

With the imbecile, the attention can be gained, and although perception is frequently alert, it is superficial and inaccurate. The memory is usually poor, and the imagination cloudy. Imbeciles may be in possession of a number of concrete ideas, but they cannot abstract or generalize. They may be able to carry on a conversation, but their responses are mechanical and their words lack significance. They are, as a rule, unstable and unreliable, and do not respond to moral influences. They are decidedly lacking in ideation. So far as the morons are concerned, they may be perfect or deficient in any of the factors just enumerated.

Among the criticisms that have been offered against the Binet scale are the following. It is said that the tests are too easy in the lower ages, and too difficult in the upper; that the fifteen year old tests are easier than the twelve year old; that there is no gradation between the ages twelve and fifteen; that the scale is too limited in extent; that it does not take into consideration hereditary influences on the intelligence, the influence of prolonged, unfavorable social environment, etc. But one can answer all these criticisms by saying that the test should be taken *cum grano salis*, that the test is not a mathematical pigeon hole classification, and that the scale is the best method of approach and means of interpretation that has yet been devised.

One of the most difficult things, however, is to distinguish between ignorance and feebleminded-ness. In his 1908 article, Binet wrote:

> We do not measure the intelligence considered apart from concrete circumstances. . . . That which we measure is much more complex—the result depends upon, 1, intelligence, pure and simple; 2, school knowledge which may be acquired earlier than the usual age; 3, school knowledge which cannot be acquired before the usual age; 4, knowledge involving language and vocabulary, belonging under both 2 and 3; and depending partly upon the school and partly upon the general surroundings. The arrangements of weights, definitions superior to usage, definitions of abstract terms, and interpretation of pictures throw light upon number 1; the naming of colors, the naming of the days of the week and the months of the year upon number 2; counting from 20 to 0, recalling the essentials of a paragraph immediately after reading the same, constructing a sentence containing three given words, and responding to the second series of questions involving reason, upon numbers 3 and 4. Does our scale do justice to the child who possesses an intelligence beyond the ordinary, but who has had no school training, or to one whose school training is much inferior to his intelligence? We think that it does. The gifted show their superiority in the repetition of numbers and phrases, the correct drawing of the figure produced by cutting the folded square of paper, the arrangement of weights, and interpretation of pictures. It is interesting that these tests enable one, when the need arises, to distinguish between the ability to learn at school and a good native intelligence.

Other psychological tests have been devised, such as the De Sanctis—similar to the Binet—the Goddard form board, the Norsworthy form board, the Healy puzzle, the Healy-Fernald test, etc. Except the De Sanctis, these tests have to do with arranging correctly pieces of wood, irregularly shaped, that fit into a frame, and these are valuable as contributory evidence in determining whether a subject is ignorant or defective, since they have practically nothing to do with previous school knowledge, and depend upon attention, sense of adaptability, decision, memory, and muscular coordination. Every now and again, a new test appears upon the horizon, but their lack of concrete value usually depends upon the fact that they have not been standardized.

In examining adults, the Binet may or may not suffice, depending upon their degree of defectiveness, and in fact, normal individuals frequently cannot answer all the questions of the scale correctly. Binet has devised a few questions which he calls an *adult test*, but these are too few to give but a hint of the real mentality and must be supplemented by questions of current events, matters relating to the occupation of the patient, etc. Ziehen's intelligence test is sometimes applied to adults, and also consists, primarily, of a list of questions.

Lombroso laid special emphasis upon physiognomy in criminals, and in the aments we frequently meet with striking physical characteristics, known as stigmata of degeneracy. Among these are anomalies of form and size of pinna and component parts, epicanthus, coloboma, obliquity of fissures, opacity of media, errors of refraction, strabismus, astigmatism, anomalies of form and size of nose, lips, and tongue, abnormalities of size and shape of cranium, saddle or V shaped palates, small receding jaws, irregular teeth, gigantism, dwarfism, talipes, polydactylism, syndactylism, supernumerary mammæ, hair upon parts usually hairless, or vice versa, fetal malformations of heart, epispadias and hypospadias, cryptorchidism, infantilism, small uterus, fibrous ovaries, labial anomalies, etc. And from physiological side, epilepsy, neuroses, defects of speech, abnormal nerve signs, paralyses, defects of walking and posture, defects of hearing, defects of vision, conjunctivitis, keratitis, blepharitis, slavering, delayed primary and secondary dentition, excessive and unpleasant secretion, feeble circulation, cyanosis, hemophilia, bulimia, coprophagia, late puberty, and sterility.

In reviewing these stigmata, one realizes at a glance that many normal persons possess either one or more such, and just as the original observations of Lombroso have been shaken by recent English investigators, so do we, in diagnosing feeble mindedness, never attribute much importance to these stigmata, unless there are three or more, or other definite psychological defects are also present.

It is always necessary to take a complete history

of the case, and one might go so far as to say that it is absolutely essential to take that history from the mother. Such matters as the age at which the child walked, talked, first held up its head when the trunk was supported, and cut its first tooth, frequently give the first hint that the child's mentality did not develop normally. If the fontanelles are not closed by the end of the second year, hydrocephalus, cretinism, or rickets may be suspected, while premature closure might mean microcephalus or malnutrition. Then a detailed list of the diseases of infancy is important, for one often obtains a history of an absence of defect symptoms in infancy until the child suffered a meningitis or other disease, and its development became definitely and permanently retarded or arrested. The history should not end here, but, in fact, should be taken completely from the very inception of the child's intelligence, through its school life and working period, up to the time that it is brought for examination.

I hope that in this short paper I have given some idea of the difficulties that may arise in diagnosing feeblemindedness. Suffice it to say, that it is not sufficient that the examiner possess a working knowledge of general medicine, but, in addition, he must have been trained in neurology, psychiatry, and psychology. The problem of the feebleminded is still in its early infancy, but we believe that its period of adolescence is approaching, and if it is given its fair share of scientific thought and attention, we feel certain that its period of maturity will reward us with new and invaluable insight into the mysteries of the mind.

768 West End Avenue.

THE TREATMENT OF THE INSANE IN THE TROPICS.

Impressions of a Traveler.

By Frank Woodbury, M. D.,

Philadelphia,

Secretary to the Committee on Lunacy of Pennsylvania.

(*Concluded from page 1020.*)

THE BERMUDA LUNATIC ASYLUM.

Through the courtesy of Dr. E. Harvey, health officer of Bermuda and superintendent of the asylum, I visited this institution in his company on March 20, 1910. The Bermuda Lunatic Asylum is situated on the Island of Bermuda, or Long Island, in the District of Devonshire, upon an elevated location, about three miles southeast of the city of Hamilton. This city is the principal port of entry and commercial centre, and is also the seat of government of the islands. The population of this group (which aggregate about 400 in number, most of which are without inhabitants), is not more than 20,000 altogether, the blacks and mulattoes outnumbering the whites in the proportion of two to one. The same proportion is maintained in the male inmates of this insane institution. Among the women, the white patients are less numerous.

At the time the visit was made there were sixty-two patients. In the last annual report (1908), the proportion was as follows: Forty men of whom fourteen were white, five mulatto, and twenty-one black; twenty-four women of whom one was white, six mulatto, and seventeen black. One reason of this disproportion between the sexes is that mild cases among women are more easily taken care of by relatives than when they occur among men; and the second reason is that, whereas a very comfortable and attractive ward for private patients has been erected in the male department, a corresponding addition to the women's department has not yet been constructed, although planned and projected, its completion depending upon a parliamentary grant which has not yet been authorized. This action is confidently anticipated, as the necessity of the improvement is generally acknowledged. The rated capacity of the hospital is too small for the present demands, and the superintendent encourages the practice of keeping the mild and harmless insane at home with their relatives as much as possible. This hospital has been in operation since 1874. The building was originally used as an educational institution for boys, which failed and was sold to the Government to be used as an asylum for the insane.

The college building, two stories in height, is still standing, and is utilized as a part of the administration building; the first floor is also used as a congregate dining hall, and the second floor is now used as an infirmary. The other buildings are only one story in height when seen from the front, but on account of the rapid falling off of the ground level, the posterior extremity of both the men's and women's wards presents three tiers of single rooms. There are no large dormitories. Each patient has a single room. The furniture consists of a good iron bed with springs and mattress. The rooms generally have no other furniture. In a few rooms devoted to the unclean patients, the bed rests on the concrete floor. In other rooms the concrete is covered with carpet or cocoa matting. The rooms are extremely clean, well ventilated, and well lighted. The charge for pay patients is four shillings a day, and this entitles them to extras in the matter of nurses and diet. Only one private patient of this class was at this time under treatment. The rate of maintenance for indigent patients is twenty-seven pounds sterling a year, or about $2.60 a week, thirty-seven cents a day.

The male and female wards are separated by the administration offices, the infirmary or college building just mentioned, and a chapel. The one story wards are L shaped, and interiorly face a courtyard, at the end of which is a stone wall which separates the upper courts from the two lower courts. The latter are entirely surrounded by high stone walls, and are about fifteen feet lower than the first two courts. This segregation court is a special feature of the Bermuda institution. The two extra courts are used for excited patients, who cannot be trusted to associate with the general run of patients in the common exercise ground. It has the advantage of keeping them out in the air instead of secluding them in the rooms. There is also a separate exercise ground attached

to the private or convalescent ward on the men's side.

The hospitals are built of the coral rock, which is the universal building material on these islands. It is of a light color, and houses stand out prominently and pleasingly from the mass of verdure by which they are surrounded. Even the roofs of the buildings are of the same alabasterlike material, probably because they reflect the rays of the sun and tend to keep the interior cool. They are also kept very clean, because they are used to catch rain water, which is the principal dependence for household purposes and is universally stored in cisterns.

At the time of my visit, three men were locked in their rooms, and one woman, as they were homicidal and violent. They are taken out several hours a day for exercise in the special court for dangerous cases. No appliance for mechanical restraint was used. The camisole is never used. The superintendent is opposed to the use of all kinds of mechanical appliances for restraint and uses almost no drugs. He says that he "simply talks to them" and keeps the patients in the fresh air as much as possible. He employs baths, but not the continuous bath. He spoke approvingly of the latter, however, and may introduce it if he can secure enough attendants. There are now five men attendants and four women, all living on the premises. They wear uniforms, and are white and evidently of a superior class to those usually seen in other institutions in the tropics.

As to the character of the patients, a large proportion seems to be mild cases of chronic insanity or dementia. Seven were committed by the court as criminal insane (three men, four women); they had all committed crimes of violence and nearly all were murderers. There is no law for the commitment of so called "habit cases," but some inebriates are received who are certified as insane. Sometimes the diagnosis is a little far fetched, but doubtless there is mental impairment with more or less organic change in all such cases; they are subnormal and technically insane. A considerable proportion of the patients are epileptic and feebleminded from birth. There are no cases of tuberculosis in the hospital at present. When they occur they are kept isolated. As regards causation, Doctor Harvey would place heredity at the head of the column, and alcoholism comes next. Owing to the limited population of the island, inbreeding in certain families is the custom, and this is one of the causes, even in the alcoholic class.

There are three or four cases of leprosy in the colony, but no case at present in the hospital. Where the relatives are able to care for these unfortunate patients, they are generally left undisturbed by the health authorities. When, however, they become a public charge, the authorities build a little hut for them to live in, and when they die the hut is burned. Rigid isolation is not practised.

There is very little venereal disease in the community and it does not figure in the reports as a cause of insanity. Very few of the patients have any evidence of infection. Uncinariasis has not been reported, and there are no known cases among the inmates. The same holds true of pellagra. Insolation and hot weather are recognized as possible causes of insanity, but Doctor Harvey has never met with a case in Bermuda.

As regards employment, there is not enough ground to give work to all of the patients. They have about twenty acres and raise some of the vegetables and fruit for the table. The women are employed in the sewing room and in housekeeping duties. Religious services are held every Sunday in the chapel, when the superintendent reads the Church of England service for the day. Music is supplied, an organist coming out from town for the purpose. About ninety per cent. of the inmates attend the services, and enjoy them. The effect is decidedly soothing and beneficial.

As regards the method of receiving patients, the procedure usually followed is to have the family physician sign the certificate, and if there is a consultant called in he also signs it. The forms are provided by the public authorities and are obtainable at the Government Building. These are to be filled out by the medical attendant, who gives a history of the case and the reasons for committing the patient to the institution, declaring further that the patient, in his opinion, is insane and is a proper subject for restraint. This certificate is then to be taken before a magistrate, who also certifies, after investigation, that the person is insane and is a fit and proper person to be detained. Then the Governor may order the patient to be received, or may direct the superintendent to examine the patient and report upon his mental condition before ordering his commitment. All patients are committed by order of the Governor, and are held until permission is granted for discharge. When a patient recovers, this fact is communicated to the Governor and his consent is obtained before the patient is permitted to go home. Exceptionally, the superintendent notifies the Colonial Secretary that the patient will be discharged upon a certain day, and if no objection is made, the patient is accordingly discharged. On account of the comparatively small number of cases treated annually, Doctor Harvey stated that no statistics as to proportion of cures could be given, but he discharged four cases as cured last year.

This hospital is situated near the military barracks, which has most attractive surroundings and is certainly one of the most healthful stations for troops imaginable. There is an army hospital here, which was said to be unoccupied at the time of my visit. In case a soldier should become insane, he would not be kept on the island, but would be sent home, as soon as possible, to England so as to be near his friends. There are no railroads nor trolley cars on the island, but excellent driving roads are found. The asylum is within half an hour's drive of the centre of the city of Hamilton. By special act of Parliament, automobiles are not allowed on the island.

BARBADOS LUNATIC ASYLUM, BRIDGETON, BARBADOS.

I visited this asylum, March 14, 1910, meeting Dr. C. J. Manning, the superintendent. This is one of the smaller institutions, and is the Government Hospital for mental diseases for the Island of Bar-

Lados. It is situated in the parish of St. Michael in the southeastern portion of the city of Bridgeton; the city mule cars pass the door. The institution was built seventeen years ago, and was opened in July, 1893, but there was an asylum before this situated in the northeastern suburb of the town.

Doctor Manning states that the number of patients resident in this asylum gives no idea of the amount of insanity in the colony, as the outlying parishes send in all cripples, all cases of senile dementia, and mental defectives. The asylum is a home for many patients who would never be admitted into the asylums of other countries because proper accommodation would be provided in specially built and equipped homes; and there are many patients quite well enough to go home, but, according to local law no patient can leave the asylum until some friend or relative writes to say he is willing to take charge of him. The police have to hold an inquiry and see that the relatives are well enough off to support the person before any patient can be discharged.

The buildings present a very attractive appearance. They are of white, or gray limestone (coral). The central building is two stories in height. With the exception of the infirmaries and hospitals, the wards or dormitories have all two stories. They have roomy porches and attractive exercise grounds, where the patients are kept in the open air all the time. The institution is about 1,700 yards from the sea, into which its sewer system discharges. The buildings consist of a central structure, with three ward buildings on each side, arranged *en échelon*, or as wild geese fly. The congregate dining room is situated in the rear of the principal structure. The infirmaries are on each side at the back. There is also a private ward building, but no nurses' home.

The population is 181 men, 204 women; total 385. The patients as a rule are colored and black. There are about forty white patients. The capacity of the institution is 448. About thirty-three per cent. of the patients are employed in the house and on the farm. There are about seventy acres of ground attached to the institution, about thirty of which are under cultivation. There is also a good dairy (insufficient). There are thirty-seven nurses. All are resident, but are allowed off duty every third night and every third Sunday. Eleven cooks, herdsmen, etc., are nonresident. Of the resident nurses, sixteen are men and thirty women. The nurses are trained and they are not all colored, being a mixture of white, colored, and black.

Temporary seclusion is resorted to (two men and fourteen women at the time of visit). There are six rooms adjoining the exercise courts, from which they are separated by iron bars which constitute the front of these rooms where violent and dangerous patients are kept out of harm's way. This gives opportunity for conversation, and enables the patients to have light and air, and see what is going on. The prolonged or continuous bath is not used as a means of treatment. Mechanical forms of restraint are not resorted to except for medical or surgical reasons. The camisole and mitts are used occasionally, but no other forms. Permission must always be obtained by an attendant from the superintendent, before using seclusion or restraint, and a report must be made to the Colonial Secretary. There is no one under mechanical restraint today in either department. Religious services are held every Sunday. About fifty per cent. of the patients regularly attend these services.

As to the cause of insanity, the physician and superintendent, Dr. C. J. Manning, very courteously made the following statements: Alcoholism is not regarded as a common cause, and exposure to heat or sunstroke, is regarded as a very rare cause of insanity. Doctor Manning stated that he had never known a case of mania caused by sunstroke. Heredity is accountable for the largest number. There are no cases of leprosy in the hospital. Insane lepers are not received, but are kept in a special ward in the Lazaretto Hospital. Epilepsy is common, there being, at present, fifty-three cases. Senile dementia is common. Many of these patients are harmless and should be kept in almshouses or homes. Consumption is common in this asylum. The consumptive insane are not isolated. Pellagra (or psilosis, as it is here called) furnishes an occasional case which is usually fatal. There are four or five suspected cases at present, but no well marked case. As to the form of insanity, it is usually of mild, delusional character. Melancholia is rare among the blacks, who are more subject to excited, noisy, and demonstrative delusional forms. Malaria is not a cause in Barbados.

The meals are served as follows: Tea with sugar, and bread at 6.30 o'clock, or coffee if the patients are workers. Breakfast is served at nine o'clock, consisting of a pint of cocoa, bread and butter, and fish; coffee may alternate with cocoa. Dinner at 2.30 p. m. consists of pea soup (Canadian peas), beef, sweet potatoes, and bread. Supper is at five, and consists of tea and bread. Workers have a ration of tobacco daily, and are also placed on the pay list, in order to encourage them, the amount being small, from a penny a week up.

Patients are committed in the following way: First, some one lodges a complaint with the magistrate, and he appoints a board of lunacy consisting of two physicians, who examine the patient and make out a certificate, which is then taken to the magistrate, who makes an order, which is finally signed by a Justice of the Peace. Thus the commitment and order for admission require four signatures for recent cases. When a patient is discharged from the hospital, he may be recommitted after examination by one physician, by order of the magistrate, provided he has not been out of the institution for a period longer than twelve months.

When a patient has recovered or is sufficiently improved to be allowed to go home, the superintendent notifies the Governor in executive committee, who will grant permission, which may be recalled. Patients cannot be discharged without this official permission. Patients are sometimes discharged who are not entirely restored, but who are able to work for their own living. In such cases, they are discharged as before stated, but the police authorities must be notified so that they may be kept under surveillance. About thirty per cent. of the

first admissions are discharged cured, or about ten per cent. of the population under treatment.

GOVERNMENT INSANE ASYLUM FOR TRINIDAD AND TOBAGO.

This institution was visited March 13, 1910; the visiting days are Sundays and Mondays. It is in St. Ann's Parish, Block Rock District, in the suburbs of the Port of Spain, Trinidad. The city street railway terminus is about half a mile away. The institution was formerly at Belmont, but, about ten years ago, the present buildings were erected and occupied. They consist of a central administration building, containing offices, store room, dining rooms, kitchen, and work rooms, flanked on each side by dormitories, which are separated by a long court in which are ornamented shrubbery and trees, and also a large one story open pavilion, with corrugated iron roof. The architecture is pleasing, the central building two stories in height, having a stone portico, and the front and sides having numerous large windows for light and ventilation. The windows are glazed, and have iron frames instead of outside bars. Two, in each window, can revolve vertically with adjacent panes of glass, so that air can enter, leaving openings about four inches clear on each side. The material is stone and concrete of a light gray color. The second floor of the administration building is used by the superintendent and physician, and also as dormitories for attendants, as store rooms, etc.

The ward buildings are of the same style as the central structure, and are also of two stories. They have a normal capacity of 270 in each, or 540 total. At present the male department has about 100 more than its normal capacity, and plans have been approved for another pavilion ward to provide for the excess. Each building is divided into three wards, but practically all the patients are kept in the exercise courts during the day, and all doors and windows are open most of the time. There are sixteen rooms on each lower floor, which are about ten by twelve feet with high ceilings. Light and air enter through openings near the ceiling which are closed with blinds. There is also an open transom over each door; the doors are solid. Patients are not permanently secluded, but only during times of excitement. The rooms are dark and without furniture. The dormitories on the second floor are open to the roof, which is of wood covered with slate. The central ridge pole is about twenty-five feet from the floor, slanting to each side. Light iron braces or ties cross the upper part, on the inside, and the birds are frequent visitors, showing free communication with the outside air. The infirmary is situated on the second floor. The bedsteads are of iron; cocoa fibre mattresses rest on flat strips.

The grounds connected with the institution consist of 120 acres, but only forty are suitable for cultivation. The patients raise potatoes, yams, and other vegetables and some fruit, but not enough to supply all that is needed and used. The women make and repair clothing. There is no systematic manufacturing conducted in this institution, beyond the clothing, all of which is made within the walls.

There is no separate building for nurses. Some sleep in the centre building, over the congregate dining room, but many sleep outside at their own homes. The present number of attendants is 100, about fifty of whom sleep outside. There are no trained nurses and there is no training school. All the nurses are natives. The men receive twenty-five pounds a year, the women twenty pounds. The number of actual attendants is fifty-eight (or about one to 6.5).

The total number of patients under treatment today is 615 (381 men and 234 women). Of these only four or five are pay patients; all the rest are paupers. All are committed by the court as paupers, but if it is ascertained that they own property, application is made to have a guardian appointed, and an order made for necessary expenses. Some patients pay as high as $37.50 (£7 10s.) a month, but these have a private room, and special attendants, when required. There are few criminal patients (two or three). There are no voluntary cases, and no inebriates, except those who are duly committed as insane. The daily cost for maintenance is twenty-four cents. The institution has a staff of two physicians, Doctor Vincent, who is the superintendent, and Dr. B. A. Percival, both of whom very courteously went through the wards with me, and very willingly supplied desired information. Patients are brought from all parts of Trinidad, also from Tobago, which is under the jurisdiction of Trinidad. There are very few whites in the institution; nearly all are of negro type, but a few are coolies.

Among the other patients using the same exercise grounds and sleeping in the same dormitories were observed ten or twelve lepers, in all stages of the disease. No attempt is made at isolation, beyond the voluntary avoidance by the other patients of the victims of this disease. It is said that their clothing is not washed with that of other patients, but they eat at the same tables. About twenty per cent. of the deaths are from pulmonary tuberculosis. There are now about fifteen cases of consumption in the hospital, but they are not isolated. The laundry is not separate from that of other patients. The clothing of lepers and of all patients with skin disease is washed separately from that of other patients.

There is no pellagra in the institution at present, and it is very rare in the records of admission. Hereditary influence is recognized in about fifty-five per cent. of the cases, and it is probably greater. Dementia præcox is rarely seen in typical forms. Alcoholism is not a prominent cause, except in cases with hereditary defects or tendencies to brain disease. Hot weather or sunstroke is believed to have very little to do with the production of insanity in this locality. There are about ten per cent. of the cases with a venereal history, or actually presenting syphilitic lesions. Hasheesh or hemp smoking is responsible for about two per cent. Formerly it was quite a common cause, but the Government enacted laws forbidding the cultivation of hemp, and since then the habit has almost died out. There are some cases of opium smoking Chinese patients; Doctor Vincent believes that it is

an active cause of insanity, but is merely responsible for the impairment of the general physical condition of the patient, and favors anemia and neurasthenia. The use of cocaine as a nerve stimulant is not known to the natives, and does not appear on the records.

Employment is given to between thirty and forty per cent. in the workroom and about the grounds. Working patients are given extras in the way of diet, but are not put on the pay list. The character of the cases is largely of an excited delusional type; there are few cases of melancholia and depressed states. Dangerous, homicidal, and suicidal cases are rare. The cures of recent admission are forty per cent. The death rate is sixteen per cent.

Everything must be reported to the Colonial Secretary, and patients cannot be discharged without his permission. Escapes occur occasionally and sometimes the Colonial Secretary criticizes the management for apparent lack of sufficient care. The records of the patients are kept in books, and photographs of every patient are taken upon his admission and pasted in the book. Regular medical histories are not written, as a rule.

Commitments are all made by magistrates. Upon information being lodged with the magistrate, he issues an order for patient's examination by a physician. When the physician reports to the authorities that the patient is insane, an order is made for his admission to the hospital. The superintendent must receive the patient. The same form of procedure is used for both pauper and pay patients. The magistrate must see the patient, and if the latter cannot be brought into court, the magistrate will go to the patient's house. In a proceeding for the appointment of a guardian for the estate of a patient, the patient must appear in person at the hearing. On this account the magistrate generally holds court for inquest at the hospital. There is no commission in lunacy. Reports are made to the Colonial Secretary. The superintendent must have consent from the latter before he can discharge a patient, after he has recovered.

There are no private institutions for the insane on the island and no other public hospital for the insane. Some years ago the authorities established a reception department in a different part of the city, as a psychopathic hospital for acute cases, such as those from the abuse of alcohol, puerperal insanity, etc. This was done so that many acute cases might be treated and cured in a month or so, without having the sufferers regularly pronounced insane and sent to the hospital by commitment. This ward has failed in its original purpose from lack of suitable medical management and control. It is now simply used as a reception ward and all the patients are sent almost immediately to the institution, without delay for diagnosis or treatment.

218 South Sixteenth Street.

The Goitre Question.—C. H. Mayo (*Surgery, Gynecology and Obstetrics*, March, 1914) believes that exposure of the thyroid is best obtained by a curved transverse incision through skin and platysma extending between the anterior jugular veins, with wide separation of the flaps, and midline vertical division of the muscles exposing the thyroid.

JUNG'S LIBIDO THEORY AND THE BERGSONIAN PHILOSOPHY.

With Illustrative Cases.

By Beatrice M. Hinkle, M. D.,
New York,
Assistant, Neurological Clinic, Cornell Medical College, and at the Post-Graduate Medical School.

The discussion of a medical problem in relation to a philosophical conception may appear at first thought to be merely a pleasant theorizing of no particular value, but in order to present and discuss intelligently certain pathological conditions, it is necessary to lay out a sort of psychological groundwork which has been found to have many points of contact with a modern philosophy. For one of the most valuable conceptions that the Freudian psychology has demonstrated is the idea of a common denominator of humanity, and that in the fields of the neuroses the abnormal manifestations in the form of symptoms are only extreme outward and visible expressions of what is found in lesser degree in so called normal people; the differences in reaction to the same stimuli depending in large part on the individual type born of heredity and nurtured by environment and training.

These ideas regarding human life in general have been evolved empirically through the direct study of individual psychology by means of the technic of psychoanalysis. It is most interesting, therefore, to find that a modern philosopher, Henri Bergson, has evolved a philosophy by an entirely different route, corroborative and analogous, in many of its conceptions, with that which analytical psychology has produced.

One of the fundamental postulates underlying the psychoanalytical methods is the belief in the inherent power of the individual to help himself in spite of unfortunate natural tendencies, if he so desires, and that he can be helped to use his libido or energy for that purpose, instead of in useless and wasteful symptoms and actions.

Bergson comes to the same conclusion in his discussion on intelligence and instinct, when he states that "an intelligent being bears within himself the means to transcend his own nature" and follows this with the wise remark that "he transcends himself, however, less than he wishes, less also than he imagines himself to do," a statement which very little psychological probing of oneself will prove.

In all psychoanalytical work it is recognized that intelligence and the production of an emotional reaction are both necessary for any constructive cure of permanent value, for psychoanalysis does not stop at the relief of a symptom nor does it consider that its work has been done until the individual has been made self conscious in a constructive way and has evolved for himself a true understanding of his needs and aims, and how best to satisfy them.

Bergson says that "the essential function of intelligence is to see the way out of a difficulty in any circumstances whatever, to find what is most suitable, what answers best the question asked."

The reason why intelligence alone, however, is not sufficient, is discussed a little farther on by Bergson, who formulates the result of his discussion thus: "There are things that intelligence

alone is able to seek, but which by itself it will never find. These things instinct alone could find, but it will never seek them." It seems as if there could be no better presentation of the psychoanalytic premise than this.

Perhaps the fundamental basis of psychoanalytic psychology is the conception of a primal force existent in humanity which Jung compares with the conception of energy in physics. This force he conceives as a living power used instinctively by man in all the automatic processes of his functioning, in his creative desires and interests, the varied processes being but different manifestations of this energy. By means of his intelligence and understanding the individual can consciously direct and use this power by virtue of its quality of movableness and flexibility.

Bergson expresses himself in an almost analogous manner when he speaks of "this change, this movement and becoming, this self creation, call it what you will, as the very stuff and reality of our being."

This psychic energy and driving power inherent in man, whether occupied as in the child, chiefly in nutrition and growth, in the developing adult in sexual aims, in his work, in the struggle for his more complete evolvement and expression in whatever form that takes, is called by Doctor Jung, the *libido,* and will be recognized as similar to Bergson's *élan vital* or "creative energy." In justification for the use of this word which custom has limited to a narrower meaning, Jung refers to the origin of the word and to its use in a like broad way by the Latin authors.

Jung has developed this theoretical conception entirely from an empirical standpoint and presents it as a working hypothesis toward the understanding of the varied manifestations of conduct and pathological symptoms for which the sexual theory alone is not sufficient. Instead of seeing sexuality as the underlying basis of life with fixation along the path of development, and the inability to fulfil certain erotic desires and their conflict with the ideals of the personality, as the chief factor in the production of the neuroses, he presents the interference, the obstacle in the path of progression of the psychic energy or *libido,* as the real cause of the neuroses. While there is no question that the sexual element occupies a large place regressively in practically every case, behind this there stands something else, which is the important and basic factor in life.

The sexuality so often expressed in dreams and fantasies can also be symbolic and no more means actual sexual desires than that the dream of eating means definitely a wish for food. If we say that one part of the dream or fantasy is symbolic, why not the other part? One must see in sexuality its symbolic meaning also, and the reason for this is clear. Sexuality stands really for the act of creation, that primal aim and purpose in all life. In the human being creation means, beside the purely animal function of producing children, something else: the self creation and creative work of man being equally necessary forms of satisfying his longing. However, the biological method still influences the unconscious processes expressed in dreams and fantasies.

Now, by this it is not meant to be understood that sexuality itself cannot be an actual problem, nor that it rarely occurs, for very frequently indeed it is of greatest importance, and as a problem it must be worked out thoroughly and given its proper place in order to free energy for application to life and its demands.

It will be realized that this application is much fuller and broader than Freud's original conception of libido, for while demanding a larger meaning for sexuality than its ordinary sense, he definitely defines libido as a sexual striving and longing, and sees in fixation of the libido at some point in the development of the individual, the cause for the later outbreak of the neurosis.

From this larger point of view the question asked is not from what psychic experiences or point of fixation in his childhood the patient is suffering, but what is the present duty or task he is avoiding or what obstacle in the path of life is he unable to overcome? What is the meaning of his regression to past psychic experiences and their expression in the form of symptoms?

It is obvious that the struggles of life are a normal and natural condition of humanity, so necessary to the development of the human being that if the outward circumstances and environment do not in themselves produce the struggle, the individual creates difficulties for himself. The degree to which he is able to overcome his difficulties, adapt himself to life, and develop his own possibilities, constitutes his degree of normality and vital accomplishment.

In this conception applied to the individual I must again call attention to Bergson's theory in *Creative Evolution.* He presents the evolution of life into individuals and species as dependent upon two series of causes, "the resistance life meets from inert matter, and the explosive force—due to an unstable balance of tendencies—which life bears within itself."

To the patient the symptoms seem the all important problem, but from the psychoanalytical standpoint this is only an outward sign of an inward conflict, great enough to produce interference with the normal ongoing of the individual, and the interest of the psychoanalyst is greatest in discovering the present difficult task confronting the patient, toward which life is urging him and before which he halts and cannot go on. This turning away from reality and inability to meet courageously the demands of his life or to find another path for himself, induces a damming up and turning back of libido, which then reanimates and inflates past psychic experiences and fantasies with a semblance of reality. This mechanism is called regression and it is the task of the physician to find the hidden libido in order to free it for application to life.

The psychic experiences and fantasies in which libido is found in the neurotic are in reality no different nor more extraordinary than those of normal people, and indeed following back through the mazes of childhood's sexual manifestations, called by Freud the polymorphous perverse sexuality, and by Jung the childish precursors of sexuality, to the

so called Œdipus complex itself, which is called the root or nuclear complex in Freudian psychology, and treated by Freud as a concrete sexual wish toward the mother, nothing strictly pathological can be found that cannot also be found in people with no neurosis.

These things can be proved by anyone having the technic to make an analysis and investigate the unconscious of normal people. Therefore Jung points out that the mere finding of these things in no way proves that they are causes of the neurosis. What we do find is that regressively libido is attached to them, they are inflated, given a false value, and thrown upon the screen as it were, so that they seem to be the all important factors.

In connection with this subject also, Bergson makes a similar observation in relation to species. He says, "the group must not be defined by the possession of certain characteristics, but by its tendency to emphasize them." So with the neurotic group; and the reminiscences only influence the form of the neurosis, but do not tell the motive nor the determining conflict. That must be looked for in the present.

In making this general statement that the neuroses are due to a present difficulty in life, the way out of which has not been found, either by giving the object up and turning the interest (libido) to something that is possible, or in overcoming it, perhaps enough emphasis has not been given to the process of regression, the damming up and flowing backward of libido, in the mechanism of which lies the creation of the symptoms.

It is the opposition within the self, when the individual through pride and egoism is unable to see his own nature or moral weakness, and refuses to acknowledge to himself that the fault is his or that only for him is the task really impossible but that actually it could be done. In this refusal to be really honest with himself, he is in a disharmony and conflict, and libido is used in a civil war rather than in a constructive development of the self or in a solving of the problem. In this condition will be recognized a very characteristic attitude of childhood, which is always ready to find in external circumstances or in others, the fault or blame for its own losses and shortcomings. Therefore, such an individual expresses his problem in an infantile manner; that is, instead of a courageous, manly recognition of weakness and the employment of libido to help himself to overcome his weakness or else to turn definitely to something within his strength, he replaces this real action by an infantile illusion. This is regression, and on the type of individual, the nature of the struggle, and the character of the fantasies depend the outward manifestations of the neurosis, the symptoms.

I am unable, for lack of space, to do more in these three cases, a hysterical monoplegia, an involutional melancholia, and an anxiety neurosis—each quite typical of its class, which I am presenting for your consideration in the light of the foregoing etiological hypothesis, than to point out briefly the meaning of the neurosis, which seemed to emerge clearly from the analytical work done. The complete analysis it is impossible to give in a paper of this kind, and although the results obtained in neurotic cases by no means determine the worth or truth of a conception, at the same time, as physicians, it is important that our theories produce practical results, therefore the fact that all of these cases responded completely to the treatment based on this standpoint, and are now living normal, useful lives is given for what it is worth.

Case I. The first case that I wish to present to you is that of a young girl, aged eighteen years, who came to Cornell neurological clinic complaining of an inability to use the right leg and great weakness, and who for nine months had been in a wheel chair unable to walk.

She gave a history of sudden onset, although there had been some weakness noticed before the complete disability occurred. There was no previous history of illness or of any special nervous symptoms. She was the eldest of five children to whom she had played the part of a second mother. She was of a serious, earnest nature, very quiet and over conscientious, had worked very hard all of her life in an effort to relieve her mother, to whom she was as devoted as she was disgusted with her father. He was a ne'er-do-well, lazy, and irascible, and to his shiftlessness the hard life of the mother and family was due. The patient only spoke of the father when pressed to do so and then struggled with her feelings toward him, saying over and over again "but still he is my father and I ought not to feel this way." She was very ambitious and had set a goal for herself—that of entering college. Her family were unable to keep her at school, so that for several years she had worked very hard in the summer at washing and the most laborious work in order to earn enough money to help her mother in the support of the family, and during school terms had worked out in a family for her board and the privilege of attending school.

The examinations were on for admission to college and it was in the midst of one of these, which she felt unable to pass that her breakdown occurred. When she looked at the difficult paper she felt very weak and unable to write, and when she attempted to rise from her seat she fell to the floor. She was unconscious for over an hour. She felt very much exhausted and was in bed for six weeks after this. She found that she was unable to hold herself up on the right leg; it ached and gave way under her. She also had emotional attacks of crying and depression. On examination the leg was found anesthetic to all tests, tactile, pain, and temperature; all reflexes were present; the muscles were flaccid.

This then was the unconscious solution of her conflict and she needed to make no further effort, for college was no longer possible because of her illness. I do not wish to convey the idea that from this time on she weakly yielded to the disaster that had come upon her. On the contrary, she tried very hard indeed to walk, felt bitterly disappointed that she had to give up her examinations, and tried faithfully all the methods proposed to her by physicians for her relief.

Her problem could be expressed thus: Her love for her mother was very great and she had identified herself with the mother to a marked degree so that the difficulties and troubles of the older woman became hers also. She felt an equal responsibility for the family and was divided between the desire to go to college and the almost insuperable difficulties connected with this wish, and the inability to reconcile herself to a separation from the mother and to no longer contributing to the care of the family. This really meant, psychologically speaking, a renunciation of the mother identification, and a separation into an independent life of her own. The mother in her girlhood had also this same strong desire to attend college and was disappointed in her ambition. Therefore if she succeeded, it meant practically an overcoming of the mother. The mother worked as an untrained nurse.

This was the conflict going on at the crucial time of examination—self abnegation on the altar of what she felt deeply was duty to the mother, unconsciously, gratification of the desire to remain attached to the mother, and, on the other hand, the effort for freedom and the development of her own life, the gratification of the ego wish, represented by college, which, however, was accompanied by such difficulties.

The effort was too great and she could not go on any longer. So, through her breakdown, her wish to stay with her mother was satisfied, the decision was shifted from her, but the ego avenged itself, and instead of the disregard of self, which was such a marked characteristic in her before, she now obtained all the attention and consideration because of her illness. I do not mean that this was a conscious process, indeed it was far from that, for consciously she was still fretting most because her weakness and inability to walk prevented her from again taking the college examinations and also made it impossible for her to assist in the care of the family.

The mechanism was worked out with great difficulty in this case, for she was a very quiet reserved child, entirely unaccustomed to expressing her thoughts or ideas and very resistant to acquaintanceship with herself. Nevertheless she realized the situation fairly quickly and, as is so frequent in the hysterical mechanism, the symptoms disappeared rapidly. She was able consciously to work out her problem and therefore passed her examinations successfully at the next opportunity. Now she was ready at least, but the economic difficulties attendant upon college were insuperable for the present, and therefore she turned her attention to what was possible, and decided upon becoming a trained nurse, entering a hospital for that purpose.

So she has fulfilled herself thus far, the mother identification dominating her choice of substitution and permitting her in this way to find a path for herself which is possible for her strength. This whole story illustrates very prettily the idea of regression just presented, and the way out.

Case II. A very intelligent woman, aged forty-nine years, complained of an intense feeling of unreality, that she was separated from everything and everyone, that the sensation of inability to act volitionally was overwhelming. She was made to get up and go about, otherwise she would like to lie in bed without moving or making any effort whatsoever. She said she was unable to think, unable to take care of herself, felt herself entirely cut off from life, said something had died within her, that she had lost her soul. Her intelligence told her that she must make some effort for herself and she tried, but said that she could not, for a heavy weight was pulling her back. This condition had been present with slight variations for three years or since in her own words "she did this awful thing." Questioned about "this awful thing," she told the following story:

Her mother had been an invalid for about five years, during which time she had been her constant companion and nurse. She had gone away at different times for a little vacation, but was never happy nor contented when away, and constantly had a sense of neglecting her duty and a feeling that she ought to be back. During the last two years, her mother had become more and more enfeebled and dependent, so that the mother could scarcely allow her out of her sight. She had help to relieve her, got away a little each day, but finally the idea came that she needed a rest and a little release from this care for some time.

This idea at first rejected as impossible, became more and more dominant in her, and she planned for several months as to how it could be done. Finally she decided to put her mother in a small sanitarium, where she would be cared for properly for two or three months. With great difficulty she arrived at the final day determined upon, and took her mother to the sanitarium. There was no resistance on the part of the mother, for she had gradually become apathetic to her environment and was only partly aware of what was going on.

When the patient returned home she suddenly felt, on looking around, as if something had happened, some change had taken place. The rooms looked unfamiliar and a sense of detachment took possession of her. Her relatives, with whom she had intended to spend her vacation, came and took her to their home, where she had formerly been very happy. Now, however, this too seemed unfamiliar and she a stranger. She spent her time crying and repeating over and over again, "Why did I do it, and [illegible] have been!" The consolation of her friends meant nothing to her. She seemed separated from them and shut out. She tried going out in the street, but there, too, she was a stranger. Her former friends were avoided; she could not meet them; for something had happened and her former sense of relationship had disappeared.

This condition continued, the sensation of separation becoming more definite and her isolation deepening. Everything was done, every effort was made to reach or to help her, and she herself tried in every way to find something to connect her with her lost reality. She was careless about herself, felt even her personal possessions were no longer hers, had no more feeling for them, and only did for herself that which she was forced to do. The idea of her sinfulness and of the necessity for annihilation took possession of her and she tried on several occasions to commit suicide with chloroform. At this time her mental state was one of bewilderment and confusion. She could not understand what had happened to her and felt that she was being punished for something. As she was a religious woman, she thought it must be because she had neglected her duty and put her mother into the care of others.

This case will be recognized as one of an ordinary *involutional melancholia;* but this term does not express the processes going on nor what really had occurred. When I saw her it was one week after she had attempted suicide by fire. She had set herself afire, burning all her hair off and one side of her head before it could be extinguished. She also made several attempts to injure some of the children in the family and was brought to me for the purpose of determining what could be done with her.

Inquiry into her life brought out the following ordinary story. She had always been well, was of a quiet self contained nature, had never had any nervous or hysterical manifestations of any sort, had lived a very quiet life with her mother in a New England town for some years. Her father died when she was nine years of age, and while she had very little distinct memory of his death, she remembers that from that time on her mother's active life seemed also to end and she turned to the patient as her greatest object of affection. Her childhood had been spent uneventfully in Boston. She had two older brothers, one married when she was twelve, and the younger not till some years later. She had never had any real love affairs, except in fantasy, but in this, as she admitted, she had lived the whole gamut of human experience. These fantasies were mostly attached to the person of a man whom she met a few times, but with whom there was not the slightest outward manifestation of interest. This fantasy love life lasted over a period of several years.

When her younger brother married, she admitted, she had felt very troubled and jealous. She had one intense affection for a woman when she was about twenty-four years old, which she expressed as her only real love affair. This lasted for a year. She said she felt all the affection or the love and emotion she imagined existed between lovers. It was brought to an end by some unpleasantness which arose. She had never made any attempt to do anything serious for herself, had gone to church and taken part in small affairs, and remembered vaguely wishing and longing for some of life's experiences, but had no idea of making an effort for herself. So she lived a colorless and passive life, her one real object of affection being her mother. With her she was identified completely, so that her family remarked, "we never thought about the one without the other. They were as one person." At the time of her mother's illness she became even more absorbed and withdrew in greater degree from outside interests and the world. She remembered during that time having occasionally feelings of disturbance, the thought occurred to her that she couldn't stand it, that she was dying, too, etc., but these feelings were quickly put away and covered by the idea of duty and love which arose.

In Jung's book, [illegible] occurs this passage: "Whoever renounces the chance to experience must stifle in himself the wish for it and therefore commits a sort of self murder."

During the six months previous to her visit to me, this patient had been trying to understand what had occurred to her, and in attempting to explain how she felt, she made this remark: "I committed mental suicide." The applica-

tion of the libido theory to this case made many of her experiences and explanations seem perfectly clear and logical. When asked what she meant by the phrase, "mental suicide," she explained that when she put her mother away she had killed something in herself, and then added, "I have never lived at all." Questioned about her attempt to destroy herself, she explained that as her soul was dead she must kill her body too. The agony was too great. In the light of the libido theory this was a real and significant statement. Her whole life had been devoted to her mother, in whose life she had found the only reality she knew, and to her mother her entire libido had been attached. The relationship was so close that even her friends and relatives could say "they both seemed one person." For a young person to be entirely absorbed in an older one and to have no separate life of her own, is admittedly abnormal. Yet this is what had occurred with no symptoms pointing to any bad consequences, until such a time as she made the attempt to free herself. In describing what led to her decision, she said "I seemed to be in a trance when I did this thing; it did not seem to be myself, but I was obsessed with the idea that I could not live through this without a rest any longer."

In thinking of this case one must not lose sight of the identification made with the mother. Her mother was dying and it was when she realized that it was only a question of time that the idea occurred to her, "I must tear myself away, I cannot live through this." Translated into psychological terms, it meant an unconscious effort to free her libido; for to allow herself to go passively on to the end, meant her death as well as her mother's. Her nature revolted against this. So for four months she struggled with the idea, until at last she made her decision, she would put her mother away, she would live. However, what had not been considered was the fact that her mother was the only real libido object she had ever known. She had no adaptation to reality except through her mother and therefore, although she rose to the supreme need in her life in an effort to free herself, when it was really accomplished physically, she found herself bereft and cut off from contact with life.

Viewed superficially what she did was merely having her mother cared for by others that she might have a short period of change and rest, a very natural and normal thing to do and in no way capable in itself of producing the tremendous effects which followed. That this act had a much deeper significance can be further understood by the fact that she was free at any time, did she so desire, to take her mother back again; and further, when her mother did die six months later, she felt no emotion about it, explaining this by saying "to me the death occurred the day I put her away." Although three years had passed since that day, the patient stated that never once had she lost the mental picture and image of her mother and her act of separation, that no matter what she attempted to do or what she spoke about or where she was, never was she free from this for a moment. Her sleep was interfered with at night and was only fitful; clear and distinct was this the first image in her mind in the morning when she awoke.

The whole story was told piecemeal with apparently the greatest effort and suffering, although she stated that she was incapable of feeling now.

To discuss this case only through the ideal homosexuality mechanism, which undoubtedly existed here, fails to offer an adequate explanation of all the elements composing this history, and to attribute it to the menopause likewise explains nothing, unless the libido theory is accepted.

For the support of the theory, the result of this case does not matter, but as a matter of fact her improvement was very remarkable, for an analysis based on that hypothesis gave her such an understanding and freedom that in a very short time she was able to put some real interest into life and feel her connection growing. She graphically described the libido theory herself, even to realizing the origin of the symptoms which she felt. Her whole life was lived without experience or growth. However, she managed to get along with no serious symptoms, although she admitted that she often felt restless and had vague pains and uneasiness, until the approach of her mother's death and the gradual failure of her mother's connection with life and her surroundings. Reality apart from her mother was strange, and so the great regression was made with her act of putting her mother away, the one great independent emotional experience of her life. Therefore, her symptoms took the character of those she saw and imagined her mother to be experiencing. Her description of being shut off from life was true. She was shut off, for her libido was withdrawn from the world and turned in on herself, and there was no connection anywhere with life.

During the analysis the revelation of the meaning of many of the acts and feelings was most interesting, and served to show the strength of the ego impulse. For instance, the desperate attempt to burn herself came out really as an effort to force a recognition of her feelings on the family, and also to incapacitate herself physically so that she would be freed from the influence and demands of one member of the family who she felt was again dominating her, and toward whom she had a great antagonism. Her cry of "what a wicked person I am and unfit to be among respectable people" was based on some of those underlying motives which she realized. The choice of fire as the form of destruction is also most significant, but it would take too long to go into those details.

Abnormal fears and phobias seem to be most frequently a protective measure, an unconscious reaction against the wholly sexual application of libido: a conflict between the egoistic instinct of self preservation, and sexuality, representing the instinct of propagation of species, and in which lie possibilities of destruction. The other aims and possibilities of sublimation for libido are not sufficiently recognized and felt by the individual, and so seem inadequate to carry the flood of energy, the life *élan,* therefore anxiety and fear are produced. The form this takes, or the object to which it is attached, may be determined by the particular exciting factor at the onset of the neurosis or by a retrogressive application of the fear to former experiences, real or fantastic. The anxiety is a very complex mechanism, entangled with many elements, which it is necessary to unravel in order to find the real origin.

Case III. This patient, a girl, unmarried, aged twenty-three years, came to the clinic complaining of violent nausea, nervous fears, headaches and dizziness, and a constant feeling as though she would fall on the street. She had an abnormal fear of meeting people she knew when she went out, and of having to speak to them, and so had given up entirely all pleasures or anything that called her out on the street, or brought her in contact with her acquaintances, the whole condition being accompanied by a marked anxiety. She gave up all attempt to work two years previously, when she found herself unable to control herself longer and the panic she experienced became unbearable. Prior to that time, she had been constantly struggling with her fears and had even forced herself because necessity was so great, to make many attempts at working, but was unable to accomplish this. If she went near a window she felt like falling out. In the beginning she thought she was going to die, and felt this as an obsessing fear for some time, which, as she didn't die, changed to a certainty that she was becoming insane.

She stated that prior to the onset of these symptoms, six years before, she was well and had been working steadily at stenography for two years. A physical examination showed nothing of interest, and there was no family history of value. The condition describes an ordinary anxiety neurosis.

On being questioned more closely, she said that a few days before the onset of these marked fears, she had a frightening experience in the office in which she was employed. During her employment there she became acquainted with a woman who was the friend of her employer and who frequently came to his office to see him. This woman became more or less friendly with the patient and told her of her relations with her employer and her affection for him; likewise her fear that he was getting tired of her. This woman often acted in a very peculiar and erratic manner, and expressed herself as in constant fear of some catastrophe. The patient frequently saw her employer trying to avoid the woman when she was coming in to see him. One evening as she was getting ready to go home, this woman rushed into the room where she was, shut the door forcibly, turned off the electric lights and screamed, "Oh, save me!" in a highly excited state. She stated that someone was coming to put her in an asylum on the ground that she was insane, and that it was her brother who had employed this person to come after her. She had rushed to this man's office to implore his protection and telephoned him to come to her aid. The patient was very much frightened and tried to turn on the lights, but was prevented from so doing, and also, when she tried to escape, found the door locked by the frightened woman who threatened her for making the attempt to leave. Soon someone came to the door and the woman, thinking it was her lover, opened it to find her brother who took her off. In the confusion our patient escaped. She was aware that instead of the brother, it was really her employer himself who had taken this means to free himself from his unwelcome friend.

She was very frightened and upset by this incident, and although she returned to the office for two or three days following, she trembled and found difficulty in settling herself to her work. In less than a week she developed marked phobias, a feeling that she was going crazy, and a strong fear of speaking to men or that a man would address her.

Going further back into her history, it was brought out that she had always been more or less timid, had had many fantasies and neurotic symptoms, none of which, however, was strong enough to inhibit her conduct or produce disability. She also admitted that she was very unhappy at home. She lived with her mother and brother, the latter of whom supported the family, and between whom and the patient there was a marked antagonism.

The treatment of this case consisted in developing step by step from this girl herself, through her fantasies and through her dreams, a realization of the real meaning of her fears. During the period of analysis the following facts developed:

She admitted that frequently she had had erotic fantasies and feelings toward her employer. He was very kind and considerate of her, but at no time did he himself give her any cause for thinking he had any interest in her other than as an employer. She stated that she always put these thoughts away from her as foolish and that he was not for her. She had had some attention from a man in her own circle, but prior to this interest in her employer, she decided that he was unacceptable and let him go. She stated also that she had envied the woman friend of her employer, and that this woman had acted queerly at times and seemed afraid.

The definite breakdown came while she was alone in the office, some days after the fright, when she found herself repeating the same words that the woman had used during that scene. In other words she had identified herself with the mistress of her employer whom she had often envied, and was reproducing the same condition.

These statements brought the admission that she had frequently in past times had difficulty with the question of sexuality, and at such times she often had a sensation of fear accompanying it. She had been denied many of the normal outlets and pleasures of girlhood, had had to work hard ever since childhood, and had little time for the following out of her pleasure instincts.

In every way this girl showed that she was very highly sexed; this meaning that she had a large amount of libido in sexual aims which were unsatisfied. Therefore when this experience brought to her mind a concrete picture of the possibilities which lay ahead of her because of the erotic interest she also had felt for her employer, she unconsciously identified herself with the woman and acted as if already this had been her fate.

It was not, however, this experience which developed the neurosis, it was merely the exciting cause or the determining moment for its outward manifestation. The neurosis itself was involved in her character and her fantasies all through her life. Nevertheless, until this particular experience impressed her soul with the sense of danger which lay in her unconscious nature and she tried to free herself from her interest in her employer, she was able to conduct herself properly and live an apparently normal life.

Her education and station in life made her problem of how to be creative other than through sexuality a difficult one, and she had not realized that it was possible for her to direct her energy by conscious understanding and effort in a way that would enable her to gain a control and mastery over her feelings and instincts, without being overwhelmed by them. Therefore the development of these fears particularly directed toward men in whom she saw instinctively always a possible enemy, were a protective measure for herself and served as an attempt at a solution of her problem. The gradual analysis of these symptoms and unfolding of the problem proceeded together with a gradual building up of a self understanding and development as to her duty to herself and adaptation to life.

In order for this result to be obtained, however, this understanding of the self which can be proved and accepted intellectually has to be experienced with emotional conviction. This was clearly demonstrated in this case, for she recognized intellectually the problem for some time before she was able to experience it and feel it as reality, and it was not until that occurred that the symptoms subsided and she was able again to relate herself normally to life. Bergson again expresses his condition when he says "one must understand in the fashion in which one loves."

It is this definite recognition and use of the emotions and feelings in the service of the patient himself which constitutes one of the many great differences between the so called persuasion and advice giving reeducational methods, and psychoanalysis. In the latter method no advice nor persuasion, nor suggestion of any sort is given. Everything must come from the patient and be felt and understood by him for himself.

From out of all this there seem to emerge very clearly several fundamental facts regarding the human being, which must be considered seriously and kept in mind in the elucidation of these psychological problems, the neuroses.

First, the primal relationship of the human being with all life, that even though he is a specialized form, he is "ever tormented by the need of more and more extended and effective action." The urge of creation is within him,-therefore obstacles and difficulties within and without which he must overcome, for his development is commensurate only with his experience and adaptability.

If we can lay aside our ethical ideals for a moment and realize that—I quote from Bergson once more—"each individual retains only a certain impetus from the universal vital impulsion and tends to use this energy in its own interest. In this consists adaptation. The species and the individual thus think only of themselves—whence rises a possible conflict with other forms of life." And again, "each species of life behaves as if the general movement of life stopped at it instead of passing through it. It thinks only for itself—it lives only for itself.

Hence the numberless struggles that we behold in Nature."

Then will seem clearer and more definite this theory that in the failure of the individual to adapt himself to his needs or to accept and complete the task his life has brought him, and the consequent regression of his libido, lies the real basis for the neurotic manifestations in their varied forms.

In this theory also and in the transference mechanism is found the explanation of the efficacy of the various forms of cure which have been successful in diseases of hysterical and neurotic foundations from time immemorial.

If one can accept the fundamentals of Bergson's *Creative Evolution*, one can accept Jung's libido theory and his modification and extension of Freud's psychology, and inversely, if one has been able through working with these psychological conceptions in a definite way, to accept them, one can appreciate and understand Bergson's philosophy.

One complements the other in a striking manner.

[illegible] PARK.

THE LEGAL STATUS OF TRAINED NURSES IN THE ADMINISTRATION OF ANESTHETICS.*

By ALMUTH C. VANDIVER,

New York,

[illegible]

So far as I know, nurses in the administration of anesthetics, unless possibly in emergency cases, have no legal status other than as nurses in the common acceptation of the term, there being no definition of nurses or nursing on our statute books. Consequently, I ask indulgence in what I have to say, which perhaps properly should be characterized as a discussion of the administration of anesthetics by nurses and the recognition or prohibition of this practice by the Legislature of the State of New York.

I begin this discussion with the assumption that many hospitals, sanitariums, and surgeons are now employing nurses, instead of registered physicians, in the administration of anesthetics, and that such institutions and surgeons are convinced that this service now being done by nurses is efficient and satisfactory. So far as I know, there is no direct authority in the Public Health Statutes, or elsewhere in the Statutes, specifically authorizing nurses to perform this part of the practice of medicine which up to recent times was performed by registered physicians. On the other hand, there is no direct prohibition in the statute against the administration of anesthetics by nurses. Further, there is no provision of law and no decision of the Courts known to me, to the effect that the administration of anesthetics by nurses, standing alone, constitutes the practice of medicine as the same is defined in Section 160 of the Public Health Law.

In view of the prevalence of the practice and its increase, it seems to me that there can be no doubt that there should be an amendment of that portion of the Public Health Law defining the practice of medicine expressly to permit or prohibit the administration of anesthetics by persons other than registered physicians. The same result could be obtained by amending the Public Health Law in relation to nurses, by defining nursing, and permitting or prohibiting the administration of anesthetics as part of the practice of nursing. Whether this practice shall be permitted or prohibited, however, is a question upon which the sense of the medical profession, after mature deliberation and discussion, should prevail.

The sum total of the arguments in favor of permitting the practice, so far as I am informed, is that nurses administer anesthetics with efficiency equal to registered physicians, and that they are less diverted from their attention to the patient by the operation. I assume, also, that the administration of anesthetics by nurses instead of physicians is more economical. The objector's view of the administration of anesthetics by nurses is that the Legislature has not provided, as one of the qualifications of nurses, the ability to administer anesthetics, and has not provided that training schools for nurses should furnish either practical or theoretical instruction in the administration of anesthesia for their students, and consequently by education and training they are not fitted nor qualified to administer anesthetics without endangering in many instances the life and health of the patients.

Nurses under our present statute are required, after at least two years' study in a training school, to answer questions in examinations on the following: 1. Elementary bacteriology; 2, elementary materia medica; 3, elementary anatomy and physiology; 4, diet cooking; 5, medical nursing, including contagious diseases; 6, surgical nursing, including gynecology; 7, obstetrical nursing; 8, nursing in children's diseases; and, 9, genitourinary diseases.

Training schools for nurses registered by the Regents are required to provide both practical and theoretical instruction in the following branches of nursing: 1. Medical nursing (including materia medica); 2, surgical nursing with operative technic, including gynecological; 3, obstetrical nursing (each pupil to have had the care of not less than six cases); 4, nursing of sick children; 5, diet cooking for the sick, including (a) twelve lessons in cooking in a good technical school or with a competent diet teacher, (b) food values, and feeding in special cases, to be taught in classes, not by lectures; 6, a thorough course in theoretical instruction in contagious nursing where practical experience is impossible; 7, bacteriology.

Physicians, after four years' study in a professional school, are required to take examinations for license to practise medicine in the following subjects: 1. Anatomy; 2, physiology; 3, chemistry; 4, hygiene and sanitation; 5, surgery; 6, obstetrics and gynecology; 7, bacteriology and pathology; and, 8, diagnosis. The minimum standard required in each subject is seventy-five per cent.

Further argument is unnecessary to indicate the vast superiority of the professional training of the physician over that of the nurse, and also to indicate that, so far as educational training is concerned, the nurse is not fitted to administer anesthetics, unless it could be contended that instruc-

*An address to the New York Society of Anesthetists, May 8, 1913.

tion in "surgical nursing with operative technic" and examination in "surgical nursing including gynecology" sufficiently fit the nurse for the responsibility resting upon anesthetists. Her qualifications to administer anesthetics, therefore, must, it seems, be entirely acquired after she becomes a registered nurse. The degree of efficiency, therefore, it would also seem, depends entirely upon the opportunity of observation of physicians in the induction of anesthesia, and the training which physicians might be able to give in their hospital or private practice. This of course would vary with the individual.

Let us now consider for a moment the possible illegality of the administration of anesthetics by nurses. Section 250 of the Public Health Law authorizing the existence of registered nurses also provides: "Nothing contained in this article shall be considered as conferring any authority to practise medicine or to undertake the treatment or cure of disease in violation of article 8 of this chapter." Section 160 of Article 8 of the chapter referred to defines the practice of medicine as follows:

A person practices medicine within the meaning of this act, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate, or prescribe for any human disease, pain, injury, or deformity or physical condition, and who shall either offer or undertake, by any means or method to diagnose, treat, operate, or prescribe for any human disease, pain, injury, deformity, or physical condition.

There is one further provision of law which should be considered in this connection. It is Section 1752 of the Penal Law, Subdivision I of which is as follows:

A person other than a duly licensed physician or surgeon engaged in the lawful practice of his profession, who has in his possession any narcotic or anesthetic substance, compound, or preparation, capable of producing stupor or unconsciousness, with intent to administer the same or cause the same to be administered to another, without the latter's consent, unless by direction of a duly licensed physician, is guilty of a felony, punishable by imprisonment in the State prison for not more than ten years.

It is obvious that the administration of anesthetics by a nurse under the immediate supervision and direction of a registered physician is not in violation of the last mentioned section. It is equally obvious that it was not the intention of the Legislature, by recognizing registered nurses and fixing their status, to confer any authority upon such persons to practise medicine, or any part thereof, or to undertake the treatment or cure of disease within the prohibition of the law regulating the practice of medicine. We are consequently reduced to the inquiry as to whether or not the administration of anesthetics by a trained nurse, in the presence and under the direction and supervision of a registered physician, comes within the definition of the practice of medicine quoted hereinabove. Under these circumstances, certainly the nurse does not hold herself out as able to treat the patient if she is acting under the direction of the physician. But it is unquestionable that she treats by the means and method of anesthetics the physical condition of the patient. I assume this is also done under the direction of the physician. The question that arises upon this point is whether or not a physician may delegate his authority, in the absence of emergency, to a nurse or other legally unqualified person.

I do not undertake to say to you that such action on the part of the nurse constitutes the practice of medicine. I do say, however, that in my opinion any doubt or uncertainty as to the legality of this practice should be resolved by definite legislative enactment, and at once, before the practice becomes any more prevalent than it is now. Mr. Lawrence Irwell, of Buffalo, N. Y., who, though not a physician, is much interested in this question, has heretofore advocated, but without success, an amendment to the Public Health Law, specifically including the administration of anesthetics within the definition of the practice of medicine. The language of his suggested amendment is the following:

The administration by any process of any substance, liquid or gas, commonly known as a general anesthetic, for the purpose of producing unconsciousness, shall constitute the practice of medicine and surgery, even if such administration is undertaken in the presence of and by direction of a registered physician or surgeon, with the following exceptions: (1) A registered dentist may administer general anesthetics for dental operations, such as the extraction of teeth, but not for any operation which is unconnected with dentistry, even if a registered physician is present and directs the dentist to administer such anesthetic, except as is hereinafter provided. (2) In any case of sudden or severe illness or sickness in which the registered physician or surgeon in attendance upon the patient conscientiously believes that the delay necessary to obtain the services of another registered physician to administer a general anesthetic will endanger the life or health of the patient, that attending physician or surgeon may employ any reliable person to administer such general anesthetic in his presence and under his instructions, but not in his absence. The employment in this manner of any person other than a registered physician to administer any general anesthetic must be limited to emergencies, and must not be habitual.

I commend this suggested amendment to your consideration. In my opinion, the legal status of nurses administering anesthetics should be fixed, definite, and certain, and should be established by the Legislature at your instance. Whether it should be permitted, or whether it should be prohibited, rests with you. If permitted, proper courses of study in nurses' training schools should be prescribed with proper practical experience thereafter. If prohibited, an amendment to the Public Health Law, relating to the practice of medicine or to the practice of nursing, should be passed.

HYDRORRHŒA NASALIS

A Case Apparently Cured.

By JOHN GUTTMAN, M. D.,
New York,
Surgeon, New York [illegible]; Ear Clinic, Vanderbilt Eye [illegible]; Surgeon, Beth David Hospital; Visiting Ear Surgeon [illegible]; Mount Morris Hospital, [illegible]

Cases of true hydrorrhœa nasalis are sufficiently infrequent, so that a report of such a case, especially when followed by an apparent cure, seems to the writer not to be unwarranted. Following is the history of such a case:

CASE. The patient, a colored woman, aged about thirty years, sent me the following account of her ailment: "The sickness began in April, 1910. I went to bed one evening, well and strong. The next morning on arising, I felt very warm and had a peculiar feeling in my head. As I stooped

*Presented at the Laryngological Section, New York Academy of Medicine, December [illegible], [illegible].

over, I felt a stream of clear water flow from my right nostril. The flow continued all that day and night, without any let up. The next evening when I went to bed, I had to place towels under my nose to drain off the discharge, otherwise the water would run down my throat and choke me when I lay on my back. I had to use ten to twelve towels a night. On the second day of the dripping, my head began to ache. I heard noises in my head, which sounded like crackling of matches. There were noises in my ears, like the ringing of bells; a funny twinkle came into my right eye, that almost blinded me. It showed the colors of the rainbow, and had a dark edge. It lasted from five to ten minutes. My memory was not as good as before I became sick. The headache lasted for twenty-two days and the nasal flow continued for about four weeks, after that the dripping stopped, my head felt right again, and I felt just as if I had recovered from a severe sickness.

A few weeks later, the discharge appeared again and with some remissions continued for several months. I tried various dispensaries and hospitals, but with little success. The discharge finally stopped of its own accord. In August, 1911, I had again a very severe attack of discharge from the nose, and headache. After having taken some medicine internally, the dripping stopped until December, 1911, when the discharge from the nose started again. This attack lasted for six days, then it stopped until April, 1912, when the nose began to drip again. The first three days the discharge was thick, later it became thin, colorless and waterlike. I went to the hospital and stayed there for three weeks, where all kinds of tests were made. I was advised to have an operation on my spinal column performed, which I refused. I then had myself treated by Doctor Guttman, who in July, 1912, operated first on the left side of my nose without any effect whatever. One week later, he operated on the right side of my nose. One hour after this operation the discharge from my nose ceased. Since then I feel perfectly well, and my head feels lighter than ever before."

The most noteworthy feature of the foregoing case is its apparent cure after an excision of the anterior tip of the middle turbinated body. The cure in this case is probably the result of the severing of the ends of the ethmoidal nerves during the excision of the middle turbinated bodies of both sides of the nose. In these cases it is advisable to sever the nerve ends on both sides on the same theory that we cocainize the superior laryngeal nerves on both sides whenever we want to bring about a regional anesthesia of the larynx.

One reason why I excised the anterior tip of the middle turbinated body of the left, or the healthy side of the nose, was, first, because I wanted to see whether the trauma, the operation *per se*, was the curative agent, as we sometimes heal a sciatica by cauterizing the ear lobule; or whether the underlying cause was hysteria, a functional disturbance of the nervous system, or whether a real anatomical affection was the cause of this disease. Inasmuch as the first operation on the healthy side had no effect whatever on the disease, it seemed to be quite rational to conclude that the ethmoidal nerve, a branch of the first branch of the trigeminus has been the primary cause of the affection. By severing these nerve ends on both sides the reflex circuit was broken, the discharge ceased, and the patient was cured.

Hydrorrhœa nasalis is really not a disease, but only a symptom which, according to Bosworth, belongs to the class of reflex neuroses such as hay fever and rhinitis nervosa, which are probably brought about by a paresis of vasomotor nerves, or perhaps by irritation of the sympathetic system of nerves. The watery secretion in hydrorrhœa nasalis is sometimes confounded with the cerebrospinal fluid, because their chemical and physiological properties are nearly identical.

The secretion of hydrorrhœa nasalis can be differentiated from cerebrospinal fluid only in cases where some other severe intracranial complaints are encountered, and St. Clair Thompson differentiates the two fluids in the following way:

In hydrorrhœa nasalis the flow comes almost invariably from both nostrils, although sometimes more from one than the other, it is not influenced noticeably by the position of the head, and it ceases during sleep. It is, as a rule, preceded or accompanied by other signs of irritation of the mucous membrane, such as sneezing, lacrymation, photophobia. The flow is variable, and seldom continues for more than a few hours, or a few days at a time. Headache is not relieved by the flow, on the contrary, it is as a rule made worse. Cerebral symptoms are not marked. Ocular symptoms, with the exception of some conjunctival irritation, are unknown.

The history of the foregoing case differs in many respects from the diagnostic features enumerated by St. Clair Thompson, notably on the points that the flow came only from one nostril, that it was not influenced noticeably by changing the position of the head, and it did not cease during sleep.

Looking over the literature, I could find only one other case, the one cited by Lichtwitz (*Archives cliniques de Bordeaux*, 7), which is somewhat similar to the case just reported. The reflex cause in that case was in the right frontal sinus. Puncturing the right frontal sinus from the nose relieved the general symptoms, and the watery flow from the nose ceased. Aside from this I could find no other case in which the discharge ceased promptly after surgical interference in the nose, and in which the cure is apparently permanent eighteen months after the operation.

The foregoing is substantially the report of this case as read by me before the Academy of Medicine, December 17, 1913. But now, two months later, it becomes necessary to supplement this report with the statement that on February 15, 1914, the patient's symptoms recurred for the first time, although in a much milder form.

This raises two important questions: Why did the symptoms disapear for a year and a half after operation, and why have the symptoms so suddenly recurred? At present no answer to these questions can be given. I hope at some future date to report this case again.

60 St. Mark's Place.

THE MEDICAL COLORS.

By Samuel P. Gerhard, A. M., M. D.,
Philadelphia.

In a retrospect of the progress of medicine we find ourselves glancing from chemistry into alchemy, from astronomy back to astrology, and from history into the depths of legend and superstition. From these remote spheres medicine has emerged to its present scientific position.

Hence it is in this direction that we seek for the colors that are associated with the medical profession. In *Notes and Queries*, 1879, some one asked

the question, What are the medicinal colors? and William George Black answered by referring to Pettigrew's *Superstitions in the History of Medicine*. According to this writer, Avicenna, an Arabian physician and philosopher, 1037, contended that, as red bodies moved the blood, everything of a red color was employed in the disturbances of the circulation. This idea led to the use of white as refrigerant, and red as hot; red flowers for disorders of the blood and yellow ones for the biliary system. The old physicians ordered red bed coverings, furniture, the hangings about the room; in fact everything the patient looked upon, ate, or drank was of a red color.

John of Gaddesden, physician in ordinary to Edward II, in the treatment of smallpox directed that everything about the room, the dresses of the nurse and patient, should be scarlet. Wraxall, 1765, states that the Emperor Francis I was treated in a scarlet blanket for smallpox. Kaemffer in his *History of Japan* states that the Mikado's children were ordered to have everything in sight of a scarlet hue during an attack of variola.

In the last century during occasions of state, the physician wore a scarlet cloak to distinguish him from the other professions. Also in the *Canterbury Tales*, the doctor is described as clad "In Sangwin," which was a stuff of a blood red color.

In the rural districts of Massachusetts a red flag was displayed from the farm house to notify the physician on his rounds that his services were required. Taking a glimpse into alchemy, it is interesting to find that the philosopher's stone, when known as the elixir of life, was a red tincture, and, as the key of wisdom, was a red powder.

The object of the alchemists was to transmute or convert the baser metals into gold, to remedy all diseases, and to prolong human life to an indefinite period. They mention particularly a red stone thus.

> They said that within the centre of incomplete white
> Was hid our red stone of most delight.

Science has been greatly benefited and received great impulses, and most important discoveries in the science of medicine have been made by this visionary pursuit of the philosopher's stone, even by such men of enlightenment as Sir Isaac Newton and Sir Francis Bacon.

Gerber, the father of chemistry, who wrote in the seventh century, personifies the metals thus:

> Gold was the only pure and healthy man,
> The others were as lepers or diseased ones,

and the alchemist regarded gold as the most perfect metal and compared it to the sun and gave it the symbol of the orb.

Gold administered in triturate or in aqua regia was considered of wonderful power, hence Chaucer says:

> For gold in physick is a cordial.

In *King John*, Shakespeare writes:

> To solemnize this day, the glorious sun
> Stays in his course, and plays the alchemist;
> Turning, with splendor of his precious eye,
> The meagre, cloddy earth to glittering gold.

John Browne, physician to Charles II, 1684, tells us that when the royal touch was administered a piece of gold was given to the sufferer, not so much as a cure, but as a symbol of his majesty's well wishing toward recovery; therefore, gold became associated with the royal gift of healing as a sign of the sovereign power to cure. No less a personage than Dr. Samuel Johnson was sent by his physician, Sir John Floyer, to undergo the ceremony.

In the light of present day chemistry and its revelations, we learn how nearly André de Villeneuve (1781-1852), a celebrated physician and medical writer of his time, struck the mark when he predicted "That in the nineteenth century the transmutation of metals will be generally known and practised. Every chemist and every artist will make gold Kitchen utensils will be of silver and even gold, which will contribute more than anything else to prolong life, poisoned at present by the oxides of copper, lead, and iron which we daily swallow with our food."

Sozinsky in his research on *Medical Symbolisms* mentions that "the color red has long served the purpose of an amulet." To this day a red string is occasionally seen around the necks of children to ward off disease. By many red flannel has a special virtue in various conditions. Red is certainly a warm color and the impression of it on the mind is stimulating. Of the color yellow, he speaks as follows: "It is a well known fact that yellow is a characteristically medical color."

To indicate the presence of a physician a yellow signal flag was displayed at lazarettos. From astrology we learn its significance, where this color was that of the sun, which orb had the greatest influence over disease. Searching through the *Handbook of Legendary and Mythological Art*, under symbolism of color, we come upon this statement:

> Red the color of the ruby, speaks of royalty, fire, divine love, the holy spirit, creative power and heat.

Yellow or gold was the emblem of the sun, the goodness of God, marriage, and fruitfulness. We may ask what two colors could we select whose virtues and attributes would be better? Shakespeare believed as the old alchemists did, that it signified wisdom, when in *Macbeth* we read:

> I have bought
> Golden opinions from all sorts of people.

Hawthorne, in the *Scarlet Letter*, relates the superstition of the old pilgrims where the sight of a crimson shower predicted pestilence, serving as a warning to take precautions against disease.

Taking these historical facts from alchemy, astrology, and legend we can readily choose the significant and appropriate medical colors to be *scarlet* and *gold*.

639 North Sixteenth Street.

CAPITAL PUNISHMENT IN THE ELECTRIC CHAIR.

By S. R. Klein, M. D., Ph. D.,
New York.

I had the opportunity to observe the working of the death chair in Sing Sing, on April 13th last, when the four so called "gunmen" were put to death within thirty-eight minutes. The first "candidate of Lucifer," an Italian, twenty-two or twenty-three years old, was brought in at 5.45 a. m., accompanied by his spiritual adviser. Two shocks were given. After the first, the right pupil still reacted, but not

the left. There was a sound heard over the right ventricle of the heart. The carotid was still—let me say—"working." The second shock finished him. "Whitey Lewis," the next in the chair, was talking up to the last second. He was brought in by the rabbi, praying and gesticulating in a lively manner. He made a statement while in the chair. His voice was strong, under the circumstances very strong; every word could be heard. He was not excited nor trembling, and met his death with bravado, in what we call in German *Galgen Humor*. He died more quickly than the first victim, but his face was extremely cyanotic, and after rigor mortis set in, nearly black; probably the shock acted in this case more on the centre of the tenth nerve than in the other cases. "Gyp the Blood" was a poor figure, consumptive, extremely anemic, in poor health. He died very quickly, I think in a few seconds; only one shock of 1,800 volts was applied. The last of the four was Rosenberg. He was the healthiest of all, the strongest, the most intelligent; he went to the death chair like an East Side hero. The State electrician had to turn his terrific machine on four times before the prison physician pronounced him dead. In each case, the excretions left the body partly before and partly during the execution. Urine was found on the floor, below the chair; no blood could be detected at any place on the bodies or the chair. The feces left the intestines, but only the clothing was soiled; semen was ejaculated. When I examined Frank Cirofici, after the first shock was given, the carotid showed pulsation and the left pupil was still a little sensitive for reflex. The most broken among the four was Dago Frank; it was rumored that he was a drug fiend. I may repeat that the urine of the executed men was not bloody, but contained a large amount of albumin.

No changes of color could be detected on any of the bodies, except on the face of Whitey Lewis, as I remarked above, on account of his speaking until the last fraction of a second; his lips, as I saw myself, were moving during the full action of the first shock. The heart of an executed body is broken, looks like a lump; there is no atrium and the ventricles can be easily separated. The great arteries are all in a broken shape; there is no real rupture, but in many places perforations. The bowels are emptied and the bladder is pale, bloodless, violently shaken up. Liver and spleen show no change. The lungs are filled with blood. The brain shows hemorrhage and ruptures of both arteries and veins. The temperature rises as high as 132° F., and in Lefty Louie's case it reached 140° F. The electrode, put on the right leg, partly cut the muscles and other tissues, but the bones remained intact. In each body there was a sign of regurgitation in the throat, probably from suffocation. It is very interesting to know that the urine, a few drops of which it was possible to collect from the clothing, showed a large amount of albumin and an immense percentage of calcium phosphate crystals. The blood changes are remarkable in regard to the collapse of the red blood corpuscles, although no change could be seen in the leucocytes. It was impossible to make further scientific examination from other standpoints. Having noted the pathological changes after executions by the rope and guillotine in Austria, Germany, and France, I am sure that the electric chair produces more alterations than any other kind of legal killing.

I had the opportunity to attend the execution in the electric chair of a colored man, E. Brown by name, in the State Penitentiary at Columbus, Ohio His weight was 220 pounds, his strength terrible; about a dozen prison officers were needed to bring him into the death chamber. His execution took nearly seven minutes. When he was finally strapped to the chair, the warden asked him, "What do you wish to say before you die?" Brown replied, "One minute more." He meant, to let him live just one minute more.

2321 Cambrelling Avenue.

Therapeutic Notes.

Nascent Iodine in the Treatment of Pulmonary Tuberculosis.—E. G. Reeve, in the *Practitioner* for September, 1913, reports the results obtained among 76 cases in a large infirmary by the intensive liberation of iodine in the organism through the interaction of chlorine on potassium iodide. Chlorine water is first prepared by allowing two drams (8 grams) of concentrated hydrochloric acid to act on one dram (4 grams) of potassium chlorate in a dry 24 ounce (one litre) bottle. When the colored gas reaches the neck of the bottle, the latter is tightly corked and the reaction allowed to continue for fifteen minutes, after which water is gradually introduced and shaken with the gas, until the bottle is filled. The treatment consists in giving the patient 30 grains (2 grams) of potassium iodide in a half pint (250 c. c.) of water at breakfast time—7 a. m.,—and four hours later, one ounce (30 c c.) of chlorine water in a half pint of lemonade. At first, 3 ounces of chlorine water are given daily, at two hour intervals. This produces signs of iodism, which pass off after four or five days. At the end of three weeks the dose of chlorine water is increased to 4 ounces, and later to 5, without further ill effects.

This treatment produces a marked inflammatory reaction around all infective foci in the body. This results in an initial rise in temperature in nearly all cases, most pronounced about the third day. Later, the temperature shows an improvement. The beneficial effects of the treatment appear very rapidly, the sputum becoming steadily more mucous, and decreasing in quantity to a practically insignificant amount. Corresponding improvement in the cough, with eventual complete cessation, and relief from insomnia, takes place. All but three of the patients gained in weight, the increase being about 12 ounces a week in favorable cases. The appetite was augmented. One third of the cases treated for three months became free from tubercle bacilli in the sputum. Mixed infection in the sputum was overcome in each of a series of thirty cases in which it had been found to exist. In those patients whose condition was known by physical signs, there was great improvement as regards the moist sounds, though the dullness showed little change, and in a few cases increased. On the whole, the effects of the treat-

ment are beneficial, though the author is not as yet able to state whether it will produce permanent cures. An advantage of the plan is that after the first week the patient does not need to be under constant surveillance and can continue to work.

Treatment of Impetigo.—Gougerot, in *Progrès médical* for July 19, 1913, recalls the fact that what has been termed dry impetigo, or pityriasis faciei, consisting of small, rounded, scaly areas sometimes observed on children's faces, was shown by the researches of Sabouraud to be due, like true impetigo, to streptococcic infection, and not to represent, as previously thought, a form of eczema. Treatment of this condition should at first consist merely in washings with boiled water in which borax or sodium bicarbonate has been dissolved. The face should be washed with a soap containing borax and tar, after which cold cream or starch glycerite should be applied. Where these measures do not suffice, applications of the following solution with cotton should be made:

℞ Acidi salicylici, ...gr. xv (1 gram);
Alcoholis, ...ʒiii (10 grams);
Aquæ sterilisatæ, ...ʒiii (90 grams).
M. et ft. lotio.

After applying this lotion a weak calomel ointment should be used:

℞ Hydrargyri chloridi mitis, } ..āā gr. v (0.3 gram);
Acidi tannici, ...}
Petrolati, ...ʒi (30 grams).
M. et ft. unguentum.

The quantity of excipient in this formula should be gradually reduced to 5 or 2.5 drams (20 and 10 grams), in order to obtain a more active ointment. In rebellious cases, ointments containing sulphur, tar, or oil of cade may be prescribed. The following preparation is useful both in the disorder under consideration and in seborrheic eczema:

℞ Hydrargyri oxidi flavi, ...gr. xv (1 gram);
Picis liquidæ, ...ʒiss (6 grams);
Petrolati, ...ʒivss (18 grams).
M. et ft. unguentum.

Treatment of Tuberculous Pericarditis.—Jacob, at a meeting of the Paris Surgical Society (*Revue de chirurgie*, June, 1913) reported two cases of tuberculous pericarditis with serofibrinous effusion in which pericardotomy without drainage was performed with successful results. Exploratory puncture, he holds, is contraindicated in such cases, as the effusion in the majority of instances is situated behind the heart, this involving both uncertainty as to diagnostic results and some danger of puncturing the heart. In operating, the author resected the fifth and sixth left costal cartilages, left the pericardial wound wide open, but sutured the muscles thus diffuse into the surrounding tissues instead of again compressing the heart.

Indications for the Use of Digitalis.—A. Martinet, in *Presse médicale* for August 27, 1913, is credited with the assertion that digitalis, correctly administered in cases of threatened or established cardiac weakness, does not raise, but always lowers the diastolic blood pressure. The systolic pressure may be either increased, lowered, or unaffected. As a rule, the pulse pressure, or difference between the systolic and diastolic pressures, is increased. Simultaneous observation of the blood pressures, viscosity, and urinary output lead to the conclusion that digitalis acts as a diuretic, both indirectly through its cardiotonic effect and directly by inducing renal vasodilatation. The drug is clinically indicated in certain conditions in which its use has hitherto generally been considered inadvisable, viz., 1, cardiac decompensation with high systolic pressure; 2, some cases of arterial hypertension the result of cardiorenal sclerosis; 3, angina pectoris, in which digitalis is useful as a preventive measure.

Treatment of Gastric Hyperacidity.—Wegele, in the recently issued translation by Gross and Held of his work on *Therapeutics of the Gastrointestinal Tract*, points out that when two or three alkaline drugs are given in combination, smaller doses will suffice to bring about a given degree of effect than if a single drug is used. Among suitable combinations he mentions the following:

I.

℞ Magnesii oxidi, .. }
Sodii bicarbonatis, ...āa ʒv (20 grams);
Calcii carbonatis, . }
Extracti belladonnæ foliorum, ...gr. v (0.3 gram).
M. bene et ft. pulvis.
Sig.: One teaspoonful two hours after meals.

II.

℞ Magnesii oxidi, }
Rhei pulveris, . } ....āā gr. lxxv (5 grams);
Sodii bicarbonatis, }
Sacchari lactis, .. } ....ʒv (20 grams).
M. et ft. pulvis.
Sig.: One teaspoonful after meals.

The following preparations have been recommended by Boas:

III.

℞ Magnesii oxidi, }
Sodii citratis, .. } .....āāʒss (15 grams);
Extracti belladonnæ foliorum,
gr. iss-iii (0.1-0.2 gram).
M. bene et ft. pulvis.
Sig.: One teaspoonful one to two hours after meals.

IV.

℞ Magnesii oxidi, .. ʒss (15 grams);
Bismuthi subnitratis, }
Sodii carbonatis .. } ..āā gr. lxxv (5 grams),
Extracti belladonnæ }
foliorum, ... } āā gr. iss-iii (0.1-0.2 gram).
Extracti nucis vomicæ, }
M. bene et ft. pulvis.
Sig.: One teaspoonful half an hour after meals.

Rosenheim prescribes as follows:

V.

℞ Magnesii oxidi, }
Sodii bicarbonatis, } ..āā gr. lxxv (5 grams);
Potassii carbonatis, .. gr. xl (2.5 grams),
Extracti belladonnæ foliorum.....gr. v (0.35 gram).
M. bene et ft. pulvis.
Sig.: One half teaspoonful half an hour after meals.

Autoserotherapy in Cancer.—Lewin, in *Therapie der Gegenwart* for June, 1913, reports two cases of breast cancer, with repeated recurrences notwithstanding operative treatment, in which the subcutaneous reinjection of 2.5 drams (10 c. c.) of ascitic fluid obtained from the patients themselves resulted in apparent cure in both instances. The measure is recommended as an adjuvant to other treatment in cases of cancer with ascites.

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EDITORS

CHARLES E. DE M. SAJOUS, M. D., LL. D.

CLAUDE L. WHEELER, A. B., M. D.

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NEW YORK, SATURDAY, MAY 28, 1904.

THE GOOD POSTURE SOCIETY.

A society has recently been organized with the purpose of making us all sit up straight. This organization has a large and important field in which it can at least keep things agitated. The field is broad, extending from the study and prevention of inherited faults to the mitigation of fatigue and the suppression of the manufacture of uncomfortable furniture. Bad posture is begotten by atavism, by heredity, by improper and insufficient food, by lack of exercise, by occupation, by trauma, by disease, by poor sight, by fatigue, by imitation, by bad lighting, by chairs which are ill adapted to the sitter, by heavy and ill fitting clothing, etc. We have the lordosis and accompanying cyphosis which result from a mesentery attached, as in our four footed ancestors, so low down as unduly to distort the lumbar spine. No amount of corrective exercises can compensate for this fault, which is in itself a compensation for mechanical arrangements within the body. This hereditary condition may possibly be handed from parent to child, and there is at least a cyphosis which, no matter what its anatomical origin, is hereditary. A congenitally long or short iliofemoral ligament, allowing the pelvis to tip too far back or to be drawn too far forward, is undoubtedly the root of much bad standing posture, and there are faults of the spine from congenitally ill shaped vertebræ. We recently examined a case of marked cyphôsis in an otherwise normal boy of ten years, in whom we found no detectable cause for the deformity until we glanced at the father. The cause was then evident, for the posture of the child was a counterpart, save that it was not so bad, of that of his father. What heredity had to do with this case we do not know, though we suspect that imitation had much more. The imitation of a favorite teacher or other friend who stoops is a not uncommon helping cause to bad posture. We all straighten our spines more in erect company, and relax in relaxed company.

Not so much spinal deformity results from rickets as one might imagine, but inadequate food and too much exercise help to bring on fatigue, and fatigue is at the bottom of much bad posture. The long maintained attitudes demanded of the young at school bring on fatigue of the muscles of the spine, which ends in stretching of the spinal ligaments, with resulting abnormality. It is not so much the shape of the school seats which is at fault; the disuse of certain muscles and the stretching which may go with it are a cause of "angel wing" scapulæ and of the round shoulders and cyphosis which may accompany this condition. The near sighted person projects his head and neck forward in an unconscious effort to get nearer the object of vision, and the head and neck tend to stay forward. In some manual trades—if there are any left—the work itself brings on bad posture, and in our factories the ill fitting seats, together with fatigue, are responsible for much deformity in frail women.

Ill fitting chairs are a source of much bad posture. We make an effort, often with mistakes, to have the child properly fitted with clothing and shoes, but little thought is taken to have his chair of proper size and shape. There are high chairs and rockers for infants and all manner of chairs for adults, usually fitless. For chairs between these extremes, for chairs for growing children, you will search the furniture stores in vain; possibly our new society can induce them to put chairs for the period of adolescence upon the market. It would be a great boon to the race also if they could be induced to make chairs that fit adults.

Bad posture is often the result of the complex of many factors and can be helped only by getting at the causes. The Society for the Improvement of Posture will be worth while if it does nothing more than impress upon the public that the correction of bad posture cannot be brought about by merely telling the patient to sit up straight.

THE MODERN TREATMENT OF OCULAR SYPHILIS.

Not until recently has the problem of the relative value of salvarsan and mercurial treatment in ocular syphilis approached a definite solution. On some points there is still diversity of opinion, and it is hoped that soon the aggregate of clinical data bearing thereon will become so large as to leave no room for doubt. That simultaneous administration of salvarsan and energetic mercurial treatment, as Wechselmann maintains, is always dangerous, and that mercury should never be given before, but only a number of days after the last salvarsan injection will doubtless seem questionable to many. At all events, the second of these strictures need not necessarily apply to ocular syphilis, for in his recent report before the French Society of Ophthalmology (*Presse médicale,* May 13, 1914), L. Dor, on the basis of a comprehensive study of the entire question, recommends in syphilitic, plastic, papular, or gummatous iritis, the administration of mixed mercurial and iodide treatment for a few days *before* giving neosalvarsan. Careful use of atropine is, of course, also required. In cyclitis and gummata of the ciliary body, intensive mixed treatment is first indicated together with atropine and hot compresses, again to be *followed* by the administration of neosalvarsan. In acute optic neuritis, on the other hand, salvarsan should be given first, as advised by de Lapersonne, and only afterward a series of twelve intravenous injections of mercury cyanide. Likewise in primary syphilitic involvements of the lids and conjunctiva, the immediate use of salvarsan is indicated. In scleritis and in choroiditis, mixed mercurial and iodide treatment appears to be alone required, though its efficiency is far greater in the former than in the latter condition.

In the interstitial keratitis of congenital syphilitics, Dor has not found salvarsan perceptibly superior to mercury alone; neither has the conjoint use of the two drugs proved curative. The essential point in connection herewith is to detect latent syphilis in apparently normal children by means of the Wassermann reaction, and to apply prophylactic treatment in the form of mercurial inunctions or, where knowledge of the condition is to be withheld from the mother, by giving calomel internally in doses of 0.01 to 0.04 gram, according to age, mixed with 0.49 to 0.46 gram of milk sugar. The use of a suppository containing 0.05 gram of neosalvarsan once weekly is also advised. Both interstitial keratitis and optic nerve atrophy in the child can thus be prevented.

Apart from the question of the localization of ocular syphilitic disease as influencing the treatment required, stress should be laid on the virulence of the spirochete in its local effects. De Lapersonne accordingly divides cases of ocular syphilis into three groups. In the first, comprising cases of tabetic atrophy, chorioretinitis, and iridochoroiditis of long standing, relatively mild treatment, consisting of intramuscular injections of one to 100 mercury bichloride in oil, or of mercurial inunctions, is indicated. In the majority of cases of ocular, as well as of cerebral syphilis, comprising the second group, more energetic treatment is required—series of twelve to fifteen intravenous injections, on alternate days, of a one to 100 solution of cyanide of mercury, followed by three to four weekly injections of 0.25 to 0.35 gram of salvarsan or 0.3 to 0.4 gram of neosalvarsan in twenty c. c. of sterile distilled water, and after this a fresh series of the cyanide injections. Finally, where still more prompt and intense treatment is required, as in beginning optic meningitis, three to four injections of salvarsan should be given at the outset, followed by mercury cyanide. Salvarsan, according to Dor's studies, in general acts better when employed after mercury than before or with it, although, he adds, this cannot yet be positively established. In ocular syphilis with albuminuria the use of salvarsan is permissible; according to some, it is better borne than mercury and acts more favorably on the secondary syphilitic nephritis.

On the whole, Dor finds grounds for concluding that there are many syphilitics who would now be blind if they had not received salvarsan, but only mercury and iodide. The new arsenic compound does not succeed, however, in curing all forms of ocular syphilis. Mercury and iodide are still indispensable to the ophthalmologist, and for progressive optic nerve atrophy some new and efficient remedy, perhaps a phosphorus compound, is still a crying need.

DEATH AFTER NASAL OPERATIONS.

Deaths after nasal operations have been stated by Killian to be very uncommon. Perhaps they are; but we have come across a good many in recent literature. Let us, however, carefully distinguish. It would be grossly inaccurate to assert that such cases were frequent unless we define what we mean by nasal operations. We quote from the article of Félix in *Archives internationales de laryngologie, d'otologie et de rhinologie,* 58, 1914. "I include," he says, "among these operations, not only operations strictly speaking, but even manipulations, such as the exploration of the frontal sinus with a probe, puncture and lavage of the maxillary sinus." Generally, it appears, the danger of these operations has been underestimated, and doctors have performed them too freely in reliance on a margin of safety not definitely fixed. At the present time,

operations that were once supposed to be innocuous are known to produce very serious or fatal results Resection of the nasal septum, perforation of the maxillary sinus, washing, inflation, are responsible for fatal cases in children and adults. Death is sometimes very sudden, as in Killian's case (*Verhandlungen des Vereins deutschen Laryngologen,* XXXI, 217, 1913). He ascribed it to vagus stimulation, a view supported by experiment, but autopsy in this and other cases, as Oertel states, shows how very uncertain the cause of these deaths may be. For instance, air embolism as a cause has been generally discredited. Meningitis, on the other hand, after probing of the frontal sinus and cribriform plate of the ethmoid bone, is common enough. The relation of the frontal sinus and cribriform plate increases the difficulty of estimating the danger of probing the former. In England and America a large number of cases of sudden death after these operations, after the injection of adrenaline, after the use of the electric cautery, have been reported. An interesting mention of some is made in this JOURNAL for April 26, 1913. Others may be found in the papers of Hays in the *American Journal of Surgery* for November, 1909; of Logan Turner, in *Archiv für Laryngologie,* 25, 270, 1911, and in Jonathan Wright's *History of Laryngology,* 1914.

WHO CAN TAKE AN ANESTHETIC?

Modern surgery has robbed the most difficult surgical procedure of its dangers. The surgeon wizard of today can enter any of the body cavities with comparative safety and perform feats of dexterity little short of marvelous. Yet any operation, however slight, is fraught with danger to life, owing to two incidental factors—surgical shock and anesthesia. Even in the hands of experts an anesthetic may prove fatal in a given case, the possibility of such a calamity being in inverse proportion to the experience of the anesthetist. No wonder the patient dreads the anesthetic, while the surgeon is continuously hunting for a safe agent which is yet to be found. While it is generally true that ether is safer than chloroform, yet some surgeons have operated on hundreds of patients under chloroform without a single fatality, while others have experienced fatal results from ether. Generally, the contraindications to general anesthesia are known, yet, in a given case, it is difficult to foretell the possible effect of the anesthetic. Patients with valvular heart disease, renal disease, atheroma, and other conditions which are supposed to contraindicate the use of a general anesthetic, have been carried through even prolonged anesthesia safely. One thing, however, is certain, and that is that general anesthesia is particularly dangerous to persons suffering from myocardial changes, a condition which does not permit of ready recognition. For this reason the simple test suggested by Dr. W. A. Schtange (*Roussky Vratch,* January 18, 1914) will be welcomed by the anesthetist, if further experience should verify the doctor's assertions. This test is based on the fact that a healthy person can suspend breathing from thirty to forty seconds. This, the author states, depends, not on the lung capacity, but on the vigor of the heart muscle. In persons with weak hearts the time is shortened to twenty or even ten seconds. The patient, seated in a chair, is told to take a moderately deep inspiration and with the mouth closed to hold his breath as long as he can. The shorter the time the patient can suspend breathing, the greater the danger of an anesthetic, the latter being contraindicated if the time is less than twenty seconds. The Schtange test should prove of great value to life insurance medical examiners who are always on the lookout for ready methods of determining the physical condition of the applicant.

A SOLUTION OF THE BICHLORIDE PROBLEM?

Dr. William Edward Fitch, editor of *Pediatrics,* announces in the June issue of that periodical that, as a result of his investigations, he proposes Federal and State legislation to limit the sale of mercury bichloride in its pure form to physicians and hospitals. When the poison is sold to the laity, the law should compel the manufacturer to put it up in tablet form of 7.3 grains of mercury bichloride, 7.7 grains of ammonium chloride, and 1.25 grain of tartrate of antimony and potassium, so compounded that the tartar emetic will exert its action on reaching the stomach before the corrosive sublimate can begin to produce its violent, irritant, and deeply caustic effects. This combination, according to Doctor Fitch, will in no wise hinder the bactericidal, germicidal, disinfectant, or antiseptic action of the bichloride of mercury, but, on the contrary, the tartar emetic will have a synergistic action. The physiological action of tartar emetic is to produce prolonged nausea, violent and repeated vomiting and retching, completely evacuating the stomach contents. No matter whether such a tablet is taken accidentally or with suicidal intent, Doctor Fitch holds that the result will be the same in all cases, prompt and complete evacuation of the stomach contents and the saving of life.

A GERMAN JOURNAL OF SEXUAL SCIENCE.

A most interesting periodical has just reached us —the *Zeitschrift für Sexualwissenschaft.* It has two distinguished editors, Professor A. Eulenburg

and Doctor Iwan Bloch. With such an introduction we have looked at the first two numbers with great attention. The April issue has a preface or exordium by the editors, and we are told that the *Zeitschrift* is the official organ of the Medical Society for Sexual Science and Eugenics. Its object is the scientific study of sex problems as they are known in medicine, natural history, and ethnology. A glance shows that the contributors are of the highest position. There are papers by Abderhalden, Biedl, Haeckel, Neisser, Havelock Ellis, A. Marie, and others. As the editors remark, this journal has long been promised. It is our pleasant task now to speak of fulfilment.

STATE SOCIETY PRIZES.

According to the *New York State Journal of Medicine* for May, 1914, the Lucien Howe prize was awarded at the recent meeting of the State society at the Hotel Astor on April 27th, to Dr. Mark J. Schoenberg for his essay on A Contribution to the Experimental Study of Ocular Anaphylaxis. The Committee on Prize Essays took occasion to remark on the value of the essay and paid the unusual compliment of awarding it the prize although no other essays were submitted in competition. We congratulate the young prize winner on his success and trust that other recent graduates will be stimulated to compete for this and similar rewards, notably the Merrit H. Cash Prize, also within the gift of the State organization.

THE LATE JACOB A. RIIS.

Jacob A. Riis, whom former President Roosevelt once called "New York's most useful citizen," died at Barre, Mass., on May 26th, after a life spent along lines singularly like those of the ideal physician; his years were passed in service to others and he was apparently without thought of material rewards. His importance to the medical profession lay in his unwearying efforts to better living conditions in the old New York slums and in his practical application of the suggestions of visiting obstetricians, hygienists, and other physicians who understood the importance of municipal cleanliness in lowering the death rate.

News Items.

Changes of Address.—Dr. W. Hunt, to 1816 Crotona Park East, corner of Southern Boulevard and 174th Street, New York.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, June 1st, Academy of Surgery and the Philadelphia Clinical Association; Wednesday, June 3d, College of Physicians; Thursday, June 4th, Obstetrical Society; Friday, June 5th, Southeast and Kensington Branches of the County Society.

New York Neurological Society.—At the next regular meeting of this society, to be held Tuesday evening, June 2d, Dr. Paul Federn, of Vienna, will speak on the Elements of Masochism, and Dr. William J. M. A. Maloney will read a paper on the Relationship of Syphilis to Tabes. All members of the medical profession are invited.

The Harrington Lectures of the Medical Department of the University of Buffalo will be given by Professor Ludwig Pick, of Berlin, on the evening of June 2d and the afternoons of June 3d and 4th, his subject being Some Recent Advances in Pathological Anatomy. The lectures will be illustrated by lantern slides and many Lumière plates. The medical profession is invited.

Philadelphia Civil Service Examinations.—Among the positions for which the Philadelphia Civil Service Commission will hold examinations on Friday, June 5th, are the following in the medical service: Assistant physician in the Department of Health and Charities, salary $800 a year; assistant in the pathological and bacteriological laboratory, Department of Health and Charities, salary $720 a year; head nurse, Bureau of Health, salary $600 to $900 a year; pier nurse, Department of Health, salary $900 a year.

Model Dairy at Otisville Sanatorium.—In connection with the sanatorium at Otisville, N. Y., the department of health maintains a model dairy. All the cattle are high grade Holsteins and tuberculin tested. With the establishment of a bacteriological laboratory at the sanatorium, arrangements have been completed for regular weekly examinations of the milk supplied to the patients. The first bacterial count showed that the milk dispensed from the sanatorium dairy contained less than 10,000 bacteria per c. c.

Personal.—Dr. Edgar Fahs Smith, provost of the University of Pennsylvania, was presented with one of the Elliott Cresson medals by the Franklin Institute, Philadelphia. Doctor Smith delivered an address on Scientists from the Keystone State. The other Elliott Cresson medal was awarded to Dr. Orville Wright.

Dr. Smith Ely Jelliffe, of New York, has been elected a corresponding member of the Paris Neurological Society.

Dr. and Mrs. William Lintz sailed on May 16th for Europe.

New Quarters for the Brooklyn Antirabic Clinic.—The Brooklyn Antirabic Clinic now conducted at the Brooklyn Borough Office, will be transferred on June 1, 1914, to 29 Third Avenue, Brooklyn. It will be open on week days from 10 a. m. to 1 p. m., and on Sundays and holidays, for all cases from all boroughs, from 10 a. m. to noon. The present quarters of the clinic are entirely too small. The waiting room cannot accommodate the patients who attend on Sundays and holidays from all boroughs.

Missouri Medical Association.—The fifty-seventh annual meeting of this association was held in Joplin on May 12th, 13th, and 14th, under the presidency of Dr. E. H. Miller, of Liberty. The following officers were elected: President, Dr. H. C. Shuttee, of West Plains; vice-presidents, Dr. J. A. McComb, of Lebanon; Dr. G. O. Cuppidge, of Moberly; Dr. W. G. Estill, of Lawson; Dr. T. A. Coffee, of Springfield; Dr. W. A. Clark, of Jefferson City; treasurer, Dr. J. S. Welch, of Salsbury; secretary, Dr. E. J. Goodwin, of St. Louis. St. Joseph will be the meeting place next year.

The Reporting of Infectious Diseases.—The Department of Health of the City of New York calls attention to the fact that difficulty is frequently experienced in finding the cases of infectious diseases reported by physicians. For example, in one day of twenty cases of diphtheria and ten cases of scarlet fever, five of the former and one of the latter could not be found by the nurses, even after diligent inquiry. To a considerable extent this is due to illegible writing and inaccurate information furnished by the physicians. The department feels sure that the mere statement of these facts will lead physicians to exercise greater care in reporting their cases.

Medical Association of the Greater City of New York.—A joint meeting of this association with the Richmond County Medical Society, under the direction of the chairman for the Borough of Richmond, will be held at the Hotel St. George, Staten Island, Monday evening, June 1st. The program will include: Artificial Pneumothorax, by Dr. Charles R. Kingsley, Jr.; Valvular Disease of the Heart in Children, by Dr. Robert Abrahams; Essential Points in Infant Feeding, by Dr. Edward S. Rimer. Among those who will take part in the discussion are Dr. Henry Illoway, Dr. George Dow Scott, Dr. George P. Jessup, and Dr. Frederic H. Bartlett.

Florida Medical Association.—At the forty-first annual meeting of this association, held in Orlando on May 13th, 14th, and 15th, the following officers were elected: President, Dr. F. Clifton Moor, of Tallahassee; first vice-president, Dr. C. D. Christ, of Orlando; second vice-president, Dr. Thomas Truelson, of Tampa; third vice-president, Dr. J. A. Simmons, of Arcadia; secretary and treasurer, Dr. Graham E. Henson, of Jacksonville; librarian, Dr James B. Pasco, of Jacksonville; Dr. John MacDiarmid of De Land, was elected delegate to the House of Delegates of the American Medical Association. The association has decided to publish a monthly journal for the purpose of stimulating interest in organized medicine in general, and in the State organization in particular. De Land was selected as the place for holding the next annual meeting.

Alienists and Neurologists to Meet in Chicago.—The Chicago Medical Society will hold its third annual meeting of alienists and neurologists of the United States for the discussion of mental disease in its various phases, on July 14th to 18th. There will be a scientific program and the titles of the papers already received indicate that the meeting will be instructive to every physician, whether connected with an asylum or a sanatorium, or engaged in private practice. The society aims to be educational to the public as well, and one meeting to which the public is invited is to be devoted to a discussion of the prevention of insanity and the conditions causing mental defectives. Arrangements have been made with the postgraduate schools of Chicago to give a complimentary course in all lines of work during the remainder of the month, and superintendents and attending physicians are invited to avail themselves of this opportunity. All communications should be addressed to Dr. William T. Mefford, 2159 West Madison Street, Chicago.

The Menace of Cancer.—In view of the undoubted increase in the mortality from cancer, the department of health is seeking in every way to educate the general public as to the importance of early recognition and treatment. It is usually not known that the general death rate of persons over forty years of age *is higher* now than it was thirty years ago. X rays and radium are often valuable adjuncts to surgical treatment, but alone they are useful only in the skin cancers and other superficial forms. In Europe, where the popular furore about radium appeared earlier than in this country, great numbers of dishonest and fake money getting radium cure establishments have made their appearance. There is danger of the same thing occurring here unless the public heed the warnings of competent authorities.

The evidence brings a message to the people who seek help in the later stage of cancer; even when the hope of cure is remote, surgery looks toward the prolongation of useful life and the relief of much suffering.

Rejected Sanatorium Applicants.—In order to determine the ultimate disposal of applicants who are refused admission to tuberculosis sanatoriums, and thereby arrive at some approximate estimate of any bearing such cases may have upon the control of the disease, the following data regarding the last 165 cases rejected in examining for the Otisville Sanatorium have been collected.

Of the total of 165 cases, 66 had negative sputum and do not play an important part in the spread of tuberculosis. The vast majority of these 66 negative sputum cases were rejected because careful and repeated examination showed that they either did not have clinical tuberculosis or were suffering from some other disease which overshadowed an insignificant tuberculous lesion. The remaining 99 rejected patients had positive sputum and were too far advanced to be admitted to Otisville (although more advanced cases are admitted to Otisville than is customary with most other sanatoriums). All of these positive sputum patients are urged by the physician in charge of the admission bureau to enter a hospital, but only 62 of the 99 said they would enter. The actual number who found their way into a hospital within one month after being rejected was certainly not more than 62.

The remaining 37 patients remained at home and at large, in streets, cars, and parks—known active distributors of tubercle bacilli. Only 9 could be induced to attend day camps, where moderate control could be exerted. Nothing but increase in the infirmary capacity of our sanatoriums will provide for this class.

Arizona State Medical Society.—At the annual meeting of this society held recently in Tucson, under the presidency of Dr. John E. Bacon, of Miami, the following officers were elected: President, Dr. J. W. Flinn, of Prescott; first vice-president, Dr. Ray Ferguson, of Bisbee; second vice-president, Dr. A. J. Murrieta, of Jerome; third vice-president, Dr. W. W. Wilkinson, of Phœnix; secretary, Dr. C. F. Yount, of Prescott; treasurer, Dr. R. D. Kennedy, of Globe. Prescott was selected as the next place of meeting.

New Hampshire Medical Society.—The 123d annual meeting of this society was held in Concord on Tuesday and Wednesday, May 12th and 13th, under the presidency of Dr. Abram Mitchell, of Epping. There was an unusually good attendance and the meeting was one of the most successful in the history of the organization. An interesting feature of the program was the report of the committee appointed at last year's meeting to investigate the tuberculosis situation in the State and to confer with the committee on legislation to prepare a bill embodying recommendations for legislation. The following officers were elected: President, Dr. Herbert K. Faulkner, of Keene; vice-president, Dr. Edgar O. Crossman, of Lisbon; counsellors, Cheshire County, Dr. Charles S. Walker, of Keene; Sullivan County, Dr. E. M. Fitch, of Claremont; trustee, Dr. John M. Gile, of Hanover; board of medical examiners, Dr. John F. Robinson, of Manchester; anniversary chairman, Dr. Frank W. Evans, of Coos.

Graduate Courses in Medicine at Stanford University.—The trustees of Stanford University have approved the plan for a graduate course in medicine to be given during the summer months. In offering this work the trustees and the medical faculty are endeavoring to open to the profession during vacation the clinical material and the laboratory and hospital facilities enjoyed by the regular Stanford medical students during the college semesters. The various courses have been so arranged that one may choose several without conflict and so cover considerable ground in the six weeks devoted to the work. Those registering in the clinical courses will be accorded the freedom of the special clinics in all regular hours, although such hours do not appear on the schedule. The fees for this work have been arranged according to the cost of the materials and the time required in the preparation and presentation of the work. On request, medical students may be permitted to attend these courses if they possess the necessary preparation, although primarily they are designed for the benefit of the profession. No certificates or university credits will be given for attendance. The Lane Medical Library of Stanford University (35,000 volumes) is open to the profession. All correspondence should be addressed to Dr. W. W. Boardman, Lane Hospital, Clay and Webster Streets, San Francisco.

New York Civil Service Examinations.—Among the positions for which the New York State Civil Service Commission will hold examinations on June 20th are the following:

Assistant medical officer, Health Officer's Department, Port of New York. $1,500. This position is in the detention and hospital service at the quarantine station, Staten Island, N. Y., and requires a knowledge of cholera, plague, yellow fever, smallpox, and epidemic cerebrospinal meningitis.

Supervising nurse, State Department of Health. $1,200. Open to women only. Applicants shall possess the following qualifications: 1. They shall be registered nurses; 2, they shall submit satisfactory evidence of training and experience of not less than two years after graduation, in one or more of the following lines of work: (a) Maternity work, (b) infant welfare work, (c) social service, (d) tuberculosis work, (e) care of communicable diseases, (f) school nursing.

Laboratory assistant, State Department of Health. $720 to $1,200. Open to men and women. The duties of this position are to assist in the work of the laboratory.

Physician, Bronx County Jail. Compensation $1,000 per annum. Candidates must be legally licensed medical practitioners and residents of Bronx county.

Applications must be on file at the office of the commission, Albany, on or before June 12th. Attention is called to the fact that the commission, in September, 1913, issued a new form of application blanks for competitive examinations, and this new form must be used.

Pith of Progressive Literature.

ZENTRALBLATT FÜR CHIRURGIE.

April 4, 1914.

New Operation for Varicocele.—Richard Frank makes a typical inguinal incision laying bare the external oblique fascia to the outer inguinal ring. The testicle is then luxated from the scrotum without dividing the fascia or the tunica vaginalis. The lower pole of the testicle is fixed by the inferior scrotal ligament, which is divided between two artery clamps, and the ventral stump brought up and sutured to the outer inguinal ring, thus securing an artificial inversion of the testicle.

Disadvantages of Steinmann's Nail Extension.—P. Ewald found difficulties in several cases in which he applied extension on nails driven into bone. The nails usually remained in three or four weeks; they had to be removed sooner in one case because of inflammation, in one because of pain, and in one because of a curving of the bone. In eighteen, the wounds healed quickly in from two to four weeks; suppuration took place in four after three months, in three after five months, and two required ten and twelve months to heal. In one an abscess formed near the site of the nail hole two years after recovery. Pain was frequently complained of; sometimes it was worse than that of the fracture. He says he does not wish to bring the method into discredit, but to warn against errors in technic. In one case the nail was too large, and the hole it made in the calcaneus did not heal; in six the nails were placed too close to the ankle.

April 11, 1914.

Hyperneurotization; Muscular Neurotization; Transplantation of Muscles.—Philipp Erlacher reports a number of experiments which show that nerve fibres, when properly cared for, regenerate and grow as well as the muscle fibres in transplanted muscles.

April 25, 1914.

Strangulation of a Loop of the Intestine.—Robert Vogel reports the case of a woman who had undergone laparotomy for removal of an ovarian cyst some months before, and had since suffered from attacks of colic and vomiting. Laparotomy was finally performed again because of intestinal occlusion, and a loop of the intestine was found to be strangulated by a silk ligature. Recovery followed its removal.

PARIS MEDICAL.

April 25, 1914.

Internal Use of Liquid Paraffin.—A. Manquat asserts that liquid paraffin or petrolatum intended for internal use should possess neither the taste nor odor of petroleum, should not exhibit marked fluorescence, and should be neutral in reaction. Its viscosity should be that of simple syrup and its specific gravity about 0.875. Too thick an oil is not desirable, as it fails to permeate the fecal material, this being an even more important effect than lubrication of the intestinal wall. The preparation used, when heated to its boiling point, must give off no acrid odor, and when heated on a water bath with an equal weight of sulphuric acid, should not darken the latter. Few specimens of liquid petrolatum satisfy these requirements, and Vicario found that impurities obtained by treatment of American oil with sulphuric acid and extraction with chloroform were decidedly toxic to guineapigs. Manquat has become convinced that liquid paraffin is not only useful as a lubricant in the intestine but as a means of healing superficial lesions in the mucous membrane, especially if it is taken on an empty stomach. The whole large intestine is relieved from the prolonged contact of irritant and septic matter; the oil inhibits bacterial growth, as shown by improved health and appetite, and marked reduction of skatol and related products in the urine, in patients suffering from enterogenous autointoxication. In painful hyperchlorhydria, liquid petrolatum is of distinct value, though not quite as efficient as either bismuth or tepid olive oil. In constipation, lack of success with it is sometimes due to excessive doses. In some patients, a tablespoonful taken before breakfast passes through too quickly, and much better results are obtained by giving two teaspoonfuls before breakfast, at 11 a. m., and again at 5 p. m. or at bedtime. In tuberculous enteritis, small amounts of a mixture of one part of bismuth subnitrate with four parts of liquid paraffin caused rapid diminution of pain, diarrhea, rigidity, and fever. In cases of enteritis without diarrhea, paraffin may be given pure. In cases of hemorrhoids, reduction of the piles is facilitated by its use, and pain and bleeding soon cease. In two cases of lung tuberculosis with intestinal disturbance, dietetic treatment, with calcium carbonate and liquid paraffin internally, caused surprisingly rapid improvement. In affections of the kidneys, heart, liver, and biliary passages, in arteriosclerosis, in psychoneuroses with constipation (melancholia, mania), in migraine, in neurasthenia, in hysteria, and even in epilepsy, the detoxicating effect of liquid petrolatum in the intestine is likely to prove of value. The oil should not be taken with food, as it may then cause a feeling of weight in the stomach, borborygmi, and even intestinal pain. Vicario has shown that in vitro the oil slows the digestion of butter by pancreatic juice.

Therapeutic Reflex Epilepsy.—H. Dufour refers under this heading to cases in which epileptoid phenomena develop in connection with such procedures as the intravenous injection of drugs, lumbar puncture, removal of blood for diagnostic purposes, etc. The exciting factor in such cases is the apprehension attending these procedures, and the predisposing cause a neurotic tendency. Of seven cases observed by the author, two were latent epileptics with fits at long intervals, two had epileptic sisters, one had two brothers who died of general paralysis, one was a hypochondriac neurasthenic, and the seventh had occasional "absent" periods with ocular convulsions. Whenever the announcement of an intended injection or puncture is seen to cause abnormal apprehension in a patient, he should be carefully reassured beforehand or the injection, if possible, deferred.

PRESSE MÉDICALE.

April 25, 1914.

Diagnostic Exploration of the Right Hypochondrium.—F. Lejars discusses, in an illustrated article, inspection, palpation, and percussion of the right hypochondrium. He refers, among other procedures, to three methods introduced by Chauffard for diagnosing large hydatid cysts of the upper segment of the liver. The first consists in placing the left hand under the right side of the thorax of the recumbent patient and with the right hand percussing with short strokes the anterior wall of the thorax as well as the epigastrium. Transmission of waves or vibrations to the left hand through the thorax indicates the presence of cystic disease. In another procedure—suprahepatic ballottement—the left hand is placed on the anterior aspect of the thorax at the level of the second and third intercostal spaces, while the right is made to hook round the lower margin of the liver and attempt to drive it upward by a series of sharp pulls. At each pull the left hand perceives, in cystic disease, a slight impulse transmitted up toward it. The third sign—transthoracic hydatid fremitus—is elicited with the patient in the erect posture. The left hand, placed across the back below the lower angle of the left scapula, perceives, in hydatid disease, a series of light undulatory vibrations when the fifth or sixth rib is percussed anteriorly with the right index finger.

ANNALES DE DERMATOLOGIE ET DE SYPHILIGRAPHIE.

April, 1914.

Is a Positive Wassermann Reaction of Absolute Value?—J. Nicolas and J. Gate found the Wassermann reaction positive in thirty-nine per cent. of the nonsyphilitics examined, and draw the following conclusions: 1. Wassermann's reaction is positive in syphilis with more or less frequency. In no case does a negative reaction allow the denial of the existence of the disease or show a cure. It is influenced very irregularly by antisyphilitic treatment to which it can in no case serve as a guide. The reactivations of Wassermann's reaction by treatment are likewise irregular and inconstant. The reaction is positive without doubt in persons who present no sign of syphilis, and have no specific history, in whom the reaction is an isolated symptom. By reference to the table which the authors put at the end of their paper, it will be seen that in a number of cases the test was made twice on nonsyphilitics; the reaction was positive at one time and negative at another, sometimes very positive at first and then negative; sometimes very negative at first and later positive.

REVUE MÉDICALE DE LA SUISSE ROMANDE

[illegible]

Membranous Pericolitis.—P. Wanner arranges the symptoms of this condition, in their order of frequency, as follows: 1. Attacks of abdominal pain, of very short duration or persisting at most for one or two days. 2. More or less marked pain in the right side of the abdomen, especially near the lower costal margin and in the ileocecal region. 3. Obstinate constipation, with copious evacuations at intervals. 4. Progressive loss of weight, in three fourths of the cases. 5. Vomiting or nausea, repeated at short intervals. 6. Febrile temperature To these manifestations may be added anorexia, coated tongue, nervousness, mucous stools, flatulence, tenderness and impaired resonance of the cecal region, and dilatation of the cecum, colon, and sometimes of the stomach. The treatment should usually at first be medical, but later, if it fails, surgical.

Medicosurgical Notes from the Balkan Wars.—N. Guerdjikoff calls attention to the unexpected benefit in cases of gas bacillus infection—"gaseous phlegmon"—from mere evacuation of the gas through small incisions, experience indicating that gangrene in tissues thus involved is due less to the infection itself than to pressure by the gases. The tendency to generalization of the infection is also lessened after such relief from pressure. Of course, in advanced cases broad and deep incisions are required. Wet antiseptic dressings proved far preferable to dry ones in the treatment of infected wounds and other inflammations. Dry dressings should be allowed only when there is no further danger of suppuration. For disinfecting the skin adjacent to wounds, a solution of iodine in benzine was extensively used, and for irrigating wounds, abscesses, and phlegmonous processes boiled water with three to five per cent. of tincture of iodine added, proved remarkably efficient. A mixture of one part of balsam of Peru with four parts of sterilized petrolatum was used in dry dressings.

Bottini's Operation in Prostatic Hypertrophy.—C. Perrier asserts that the brilliant results obtained with Freyer's transvesical prostatectomy have led to undue neglect of Bottini's procedure, which consists in making one or more grooves in the enlarged organ by means of a special galvanocautery introduced through the urethra. Excellent results were obtained in his three cases. The Bottini procedure is carried out without general anesthesia and involves no operative shock or prolonged stay in bed, and its trial is therefore indicated in weakened patients in whom untoward results from the more serious operation of prostatectomy are apprehended.

BRITISH MEDICAL JOURNAL

May 9, 1914.

Cause and Cure of Cancer.—W. S. Lazarus-Barlow suggests that radium in the tissues is the cause of cancer. This view is supported by several observations of the author. It is well known that minute quantities of radium are capable of materially stimulating many forms of living cell. Radium is very widely distributed in nature in amounts which are capable of causing the multiplication of cells. Bacteria suspended in a fluid containing radium or its salts, attract it to themselves. Cancer is conceded to occur most frequently in parts of the body subjected to chronic irritation and inflammation, and it may be accepted that these parts also harbor bacteria in greater amounts than normal tissues. Such being the case, radium in the body would be associated with its accumulation by bacteria in such sites. The alpha rays are known to cause disappearance of Altmann's granules from

cells, and the author states that such granules are always absent from true cancer cells. Radium may be demonstrated in normal tissues, but always in smaller amounts than in cancerous tissues. Gallstones, which are not associated with carcinoma of the bladder, do not contain radium, whereas those found in such association contain relatively large amounts. Exposure to the x ray is a frequent cause of cancer. The opposite of these propositions is also true; larger amounts of radium, instead of tending to accelerate growth and multiplication of cells, are directly destructive of cells. This is particularly true of cancerous cells. The action of radium on cells is selective, not all types of cells being equally vulnerable. Its curative action on cancer does not depend solely on destruction of cells by direct action of the radiations; it has been shown in animal experiments that destruction of a portion of the cells by radium gives rise to an active immunity. This leads to the further regression of the growth, but without immunity cure cannot be expected. If destruction of the cancer cells has been too extensive, no immunity is produced and a recurrence may be expected. In spite of his belief in the curative powers of radium, Lazarus-Barlow advises strongly against its use in any case in which operative measures are possible.

Intramedullary Tumor of the Spinal Cord.—J. Michell Clarke and R. G. P. Lansdown report the case of a young woman with a rapidly growing tumor of the lumbar cord. The symptoms increased rapidly and a laminectomy was performed, but it was found impossible to remove the growth. After a few weeks, during which the symptoms continued, a tube of fifty mg. of radium was placed in the spinal canal over the tumor but outside of the dura and left in place for twenty-two hours. Almost immediately the symptoms ceased to advance and retrogression set in, and the patient was fast regaining the use of her legs, which had been totally lost, when she succumbed to the colon bacillus infection. No post mortem examination was permitted, but it was evident that radium had caused the tumor to stop growing and had brought about considerable reduction in its size.

X Rays and Radium in the Treatment of Cancer.—Francis Hernaman-Johnson compares the value of these two agents. X ray is to be preferred in early cases, whether before or after an operation. In tumors which are not amenable to operation, a tube of radium should be placed in the centre of the growth, and the x rays should be used on the surrounding area. There is little evidence to show that radium is productive of better or more lasting results than the x ray in the general run of cases.

Painful Shoulders.—John J. Grace says that almost all cases of this condition show tenderness in one of four points: 1. At the posterior fold of the axilla over the interval between the two heads of the triceps, through which the circumflex nerve passes. 2. Over the infraspinatus, due to a neuritis of the suprascapular nerve. 3. Over the supraspinatus, from the same cause. 4. Over the deltoid. Other cases have more extensive neuritis of the nerve trunks, and show decided muscular wasting and scattered points of tenderness, while still others may be due to rheumatoid arthritis. In a few cases the condition is due to a chronic inflammation of the subacromial bursa, such being best treated surgically. A few cases show no tender points. The treatment advocated consists in discovery of the tender points by means of the spark from the vacuum tube of a static machine, using about one inch of spark. These points are exposed to the light from a 500 candle power carbon filament lamp for twenty to thirty minutes. Then the patient is placed on the insulated platform of the static machine, a soft metal electrode is moulded over the painful region and connected to the positive pole, the negative being grounded. The spark gap is then cautiously opened until the patient feels a sensation like a tap on a bruise at the passage of each spark. With each succeeding treatment the gap can be widened until a spark of five to six inches is used, by which time the condition is usually cured. The treatment is usually given daily until decided improvement is secured, when the intervals are rapidly lengthened.

LANCET.

May 4.

Massive Collapse of the Lungs.—T. R. Elliott and L. A. Dingley report eleven cases of this accident after abdominal operations; all agreed closely with the original description given by Pasteur. An important point is that all the patients had mucopurulent sputum and a temperature between 101° and 103° F. before the collapse. This fever makes the resemblance to pneumonia very close, and is caused by a purulent bronchitis which is possibly due to a preceding infection of the bronchi. "Together with this some unknown cause, either thoracic or abdominal, a reflex immobility of the diaphragm is produced, and as the combined result of these two disorders of respiration the lower lobe of the lung undergoes passive collapse throughout its mass. This may occur at any time in the first week after the operation." Owing to the smaller volume of the collapsed lung, the heart is displaced to the affected side and the opposite lung is overdistended. When displacement is rapid and very marked, both pain and cyanosis develop. The chief diagnostic points are greenish mucopurulent sputum, fever, and displacement of the heart. Treatment should be instituted at once, to produce diminution of bronchial infection and forcible expansion of the lung.

Hyperacute Streptococcic Infection.—Geoffrey Jefferson reports two cases of this rare condition, both occurring in young children, and both within twenty-four hours after an operation for the removal of tuberculous cervical glands and sinus. Symptoms followed rapidly after the operation; there were chills, high temperature, very rapid pulse, unconsciousness, and death, in the one case in twelve, in the other in twenty hours after operation. From one case, a pure culture of a streptococcus was obtained from the heart's blood, and a similar organism was found in the wound. Jefferson believes that death was due to massive infection from the field of operation, but whether introduction of the organism took place from without,

or from a focus of infection cannot be determined. He cites two other deaths recorded in the files of the hospital, which resemble these very closely, and he suggests that occurrence of this condition is not recognized, or is diagnosed as due to some other cause.

Crucial Ligaments in Hemarthrosis.—Edred M. Corner says: "1. Partial rupture of the internal lateral ligament (of the knee) is produced by the crucial ligaments withstanding the strain of the accident and preventing complete rupture. The results of treatment will be satisfactory. 2. Complete or severe lacerations of the internal lateral ligament will always be accompanied by a rupture of the crucial ligaments, even to the complete rupture of the anterior crucial ligament. The results or treatment vary *pari passu* with the extent of the laceration of the crucial ligaments. The convalescence may be long and the final result unsatisfactory." He says that the synovial membrane is tightly bound to these crucial ligaments and that their rupture, either partial or complete, is the cause of the rapid hemorrhage into the joint in such injuries. Hence, when swelling follows rapidly after traumatism, the rupture of these ligaments is to be presumed, and the outlook for recovery is less favorable than when there is no such rapid swelling. Operation should be performed at once through a vertical incision and longitudinal splitting of the patella.

Aspiratory Function of the Heart.—H. Walter Verdon says that there are two aspiratory mechanisms by which the action of the heart is promoted. The first is the filling of the thoracic veins by the negative intrathoracic pressure. This keeps the veins full and the circulation favorable for the kinetic aspiratory function of the ventricles. The kinetic aspiratory function is intermittent and occurs only during systole of the ventricles. By it the blood is sucked into the auricles out of the pulmonary and thoracic veins. When it is deficient, as through any condition which lowers the negative intrathoracic pressure, there is venous stasis, dyspnea, cyanosis, and the apex beat is much reduced. Anything which serves to elevate the diaphragm also leads to the same results, and this is the explanation of the fact that emphysematous and asthmatic patients assume a posture which tends to cause the liver and abdominal organs to fall and to lower the diaphragm, thus increasing the intrathoracic negative pressure.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

May 1, 1914.

The Mentally Defective.—G. S. Mundie says that mental deficiency is a defect of the brain, not a disease. It cannot be cured, but the condition of the child can be improved to a greater or less degree by careful and suitable treatment and training. The greatest etiological factor is heredity; other important factors are the condition of the mother during gestation, tuberculosis, alcoholism, and injuries after birth. All mental defectives should undergo a thorough medical examination and any defect in vision, hearing, or enlarged tonsils and adenoids should be corrected. Training should be carried out in institutions, and the teaching should be objective.

BOSTON MEDICAL AND SURGICAL JOURNAL.

May 14, 1914.

Cerebral Circulation and Its Role in the Psychoneuroses.—J. W. Courtney thinks that, in spite of discrepancies, the bulk of evidence establishes the existence in the brain of a special vasomotor nervous arrangement comparable to that of a secreting gland. When we consider the highly differentiated brain areas, either singly or in groups, and the wide variations of their activity, while others, either adjacent or remote, are practically quiescent, it is impossible to believe that the cerebral circulation passively follows changes in the general arterial and venous pressures. Nature provides for local waste and repair in the form of circulatory autonomy, and it is incredible that this is not so in the brain. As soon as we establish the existence of the power of independent dilatation and contraction on the part of the vessels of the brain, we may logically assume that the brain, in common with other parts of the economy which are provided with an identical autonomic circulatory apparatus, receives normally a supply of blood nicely proportioned in quantity to the functional activity of the moment, and when we consider that this activity is constantly changing with regard to both area and intensity, it is safe to assume a territorial autonomy in cerebral circulation. There is much physiological evidence in favor of this idea, and two forms of pathological evidence, direct and indirect. The direct evidence is manifest when the cranium is opened, the indirect is derived from observations in regions other than the brain, whose vessels are supplied by the autonomic system. The evidence adduced may not suffice to prove the existence of a territorially autonomic cerebral circulatory system, but it is at least material.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

May 16, 1914.

Symptomatology of Trifacial Neuralgia.—H. T. Patrick analyzes his 221 observations. In 62.4 per cent. of cases, the trouble began on the right side, in 37.1 per cent. on the left, and in one case, 0.5 per cent., simultaneously on both sides. As to the incidence of pain, he concludes that pain limited to the supraorbital region is probably not neuralgia at all. When two branches were involved, the combination was always first and second or second and third, the latter being almost twice as frequent as the former. The pain of trifacial neuralgia, while severe, is essentially shortlived; to this rule he has known only a single exception. A striking feature, and one of diagnostic value, is that pain is started by relatively slight peripheral irritation. Trifacial neuralgia is essentially chronic, with no tendency to recovery. During paroxysms of pain, mild vasomotor and secretory signs are often seen; in the author's experience these have been confined to flushing, lacrymation, salivation, nasal flow, and perspiration. The appellation tic douloureux is a misnomer, as the motor element in the affection is nonessential and secondary. Next to migraine, he regards coincident or preexisting infections about the face as the most interesting complications.

Syphilis as a Public Health Question.—H. J. Nichols concludes: 1. The application of Koch's etiological method has greatly increased our knowledge of syphilis during the last ten years. 2. A strictly medical campaign against syphilis is neither practicable nor desirable; a modified medical campaign both practicable and necessary. 3. The prevalence of the disease can best be ascertained by Wassermann reactions carried out by municipal and hospital laboratories. 4. The most hopeful result of recent work is the early diagnosis of syphilis and radical cure; a possibility still largely unrealized from lack of facilities in dispensaries and hospitals. 5. Much more definite knowledge of efficient treatment and cure has resulted from tests. 6. In most cases syphilis is a preventable disease, and this fact is an additional warrant for penalizing those who contract it.

Chaparro amargosa in the Treatment of Amebic Dysentery.—P. I. Nixon reports ten cases of undoubted amebic dysentery, of from three weeks' to four years' standing, all of which were cured with Chaparra amargosa, a small thorny bush of Southwest Texas and Northern Mexico, the matured fruit of which is a red berry about the size of a pea. Nine of the patients were given the infusion, and one the detannated fluidextract. There has been no recurrence, so far as can be ascertained; the period of freedom from symptoms ranging, except in one recent case, from ten months to two years. In only one instance was a living ameba found in the stools after treatment. There were no liver abscesses nor other complications. Experimental data, the author states, no less surely than clinical results, prove the amebicidal action of Chaparro amargosa; the drug undoubtedly having an elective affinity for the protoplasm of Entamœba histolytica.

Etiology of Typhus Fever and of Brill's Disease.—H. Plotz thought it desirable to search for an anaerobic organism as the etiological factor in the acute disease of unknown origin which Brill differentiated from typhoid fever. In Brill's disease he obtained, with anaerobic methods, the same organism in five out of six cases; but the case in which it was not found was investigated only after the crisis. Inasmuch as Brill's disease is probably a mild form of typhus fever, he decided to apply the same methods to the study of the latter. Through the kindness of the health officer of the port of New York, he was enabled to study six cases of typhus fever at the height of the disease, and from all of these he recovered an organism which appears to be identical with that isolated from the cases of Brill's disease. Many control cases were studied, and the organism was absent from all. The organism is Gram positive, a pleomorphic bacillus, from 0.9 to 1.93 microns in length. It is not acid fast, has no capsule, and polar bodies can be demonstrated with appropriate methods.

MEDICAL RECORD

May 16, 1914

Polycythemia in Duodenal Ulcer.—G. A. Friedman says that the blood of patients with nonbleeding duodenal ulcer differs from the blood in gastric ulcer. Further studies have indicated that in gastric ulcer and chronic appendicitis moderate anemia is the rule, and polycythemia the exception; in duodenal ulcer the reverse obtains. Hence in duodenal ulcer he offers a new diagnostic aid—polycythemia; when confirmed by a large number of cases, it may prove of even greater value than x ray examinations.

Mechanical Support of the Feet in Locomotor Ataxia.—W. J. M. A. Maloney and V. E. Sorapure state that the abducted feet of the ataxic tabetic are sometimes overpronated, and in such cases both anteroposterior and transverse ligaments usually yield; so that such a foot affords a wretchedly inadequate support. When the feet are separated, so that each external malleolus is in the plane of a line dropped vertically from the great trochanter, and the long axis of each foot is directed forward so that the feet are parallel, the feet are in the position which confers the greatest amount of stability in standing. The authors endeavored to brace the tabetic foot in such a position that the full weight was borne, in standing and walking, on the natural tripod consisting of the internal tubercle of the os calcis, the sesamoid bones and head of the first metatarsal, and the base of the fifth metatarsal. In order to do this precisely, it was necessary, in addition to correcting the diminution in the longitudinal arch along the lines indicated by a cast of the foot taken in a position of rest, to obtain a cast of the foot in the act of bearing the full weight of the body. A comparison of this cast with that taken of the foot at rest, shows exactly the points on which the weight is falling, the degree to which the natural arches have given way, and the amount of spread in all directions which has resulted from the overstretching of the ligaments and muscles. Having described the manner of taking plaster casts of the foot in action and at rest, they state that, with these two casts as guides, they build a third, the effort being to utilize the normal pressure points in the foot and to restore, as far as possible, the normal bony arrangement of the foot, the pressure tripod. For this purpose they use a replica of the cast of the foot at rest; adding plaster to it at points where it is desirable to avoid pressure, scraping away plaster at points where it is desired to allow pressure. This third cast is the model of the foot upon which the brace maker fashions the plate. The type of brace used is a modification of the Whitman brace—the inner lip being curved below the level of the scaphoid. By means of exercise the tone of the weakened muscle is increased until the muscles themselves are capable of maintaining the bones in the correct position.

Prophylaxis of Laryngeal Tuberculosis.—A. R. Solenberger speaks first of the twofold nature of this in point of time—first, before the larynx is involved; second, after its involvement. To the laryngologist, he says, there need hardly come any lesson with respect to the part that surgery must play. He is now fairly busy in clearing up the diseased segments of the upper half of the circle—faucial, lingual, and pharyngeal tonsils, nasal cavities, cervical glands, etc. Prophylactic work in childhood is here made logically and scientifically;

and this applies not only to laryngeal, but to general tuberculosis. If the laryngologist is alert, he will usually find a time in the general condition of the patient when, by well selected surgical methods, he can safely eradicate diseased tonsils, restore equilibrium of nasal respiration, correct septal deformities, or drain a pus reservoir in a nasal accessory cavity. Referring to early signs of laryngeal involvement, the author urges early and constant use of the laryngoscope.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

May, 1914.

Medical Diagnosis in Relation to Surgery.—D. Riesman emphasizes the value of medical examination in obscure, and in plain, surgical cases. The physicians might find diabetes, nephritis, grave anemia, bronchitis, or serious heart disease; any one of which would influence the surgeon in his work. Many delayed deaths after operation might thus be averted. He feels that in medical cases, which may at any time assume a surgical aspect, the surgeon should be consulted long before an operation becomes imperative. The domain of surgery has been so widened in our own time that there is scarcely a medical condition which may not in some of its phases become a surgical one. Medical diagnosis not only involves the recognition of the existence of a surgical condition, but also a careful study of the patient as a surgical risk. In order to increase his diagnostic skill, the physician should make it a rule to be present at all operations on cases which have come before him. In all spheres of life the best work is team work, and the best team for the cure of human ills is the great medical triumvirate—the laboratory man, the surgeon, and the sane, levelheaded physician.

Association of Uterine Growths with Goitre; Typical and Atypical Exophthalmic Goitre.—H. L. Elsner calls attention to the large proportion of uterine growths associated with goitre, typical and atypical exophthalmic goitre. The frequency of atypical cases attests the need of thorough examination of the body organs in goitre. If this is done, the number of associated anomalies will be found to be surprising.

A Peculiar Undescribed Disease of the Nerves of the Cauda equina.—F. Kennedy, C. A. Elsberg, and C. I. Lambert state that during the past five years, in a large number of spinal operations under their observation, among which were many cases of diseases of the terminal spinal segments, they have met with five cases (full details of which are given) so alike in their histories and clinical findings, and in the morbid appearances, that they have been led to class them together, in the belief that there is here a definite clinical and pathological entity. In 1909 Marek published the report of a disease in a horse, with autopsy, which was in all respects similar to the disease in their patients; describing the conditions as a neuritis of the cauda equina. The clinical condition closely corresponded, and the findings at operation were very like those of the post mortem examination. They have therefore been forced to the suggestion that their cases, and perhaps some of those in the literature with like histories, are examples of a true toxic neuritis of the caudal nerve roots.. The probable existence in man of such a disease, it is stated, has been denied by several writers; the affection has been produced experimentally by Orr and Rows, who have repeatedly found toxins capable of traveling from the sciatic and other nerves to the posterior root ganglia, along the spinal roots, and upward in the cord.

Mechanism of Prostatic Retention.—E. L. Keys, Jr., emphasizes the points that in theory, as always in practice, the problem of prostatic retention is mechanical; the bladder neck, and especially the elevation of its inferior lip, is the important mechanical obstruction. Prostatectomy, suprapubic or perineal, total, subtotal, or partial, should be performed.

Primary Tissue Lesions in the Heart Produced by Spirochæta pallida.—A. S. Warthin's studies indicate that primary cardiac lesions produced by the spirochete may be either parenchymatous or interstitial. The former lesions are a peculiar pale degeneration, fatty degeneration, simple atrophy, and necrosis; interstitial lesions are the occurrence of a peculiar form of edema (myxedema), vascular and perivascular infiltration, and localized myxomalike formations. Purely parenchymatous lesions are found especially in virulent congenital and active secondary and early tertiary syphilis; in milder and older infections the interstitial changes, particularly the vascular and perivascular proliferations, predominate. The author has found the cardiac location of spirochetes to be more common than the hepatic; it is of great importance to know that the heart is so frequently the seat of disease. The organisms may be found in great numbers in the heart, when no others can be discovered elsewhere in the body. Syphilis can produce purely parenchymatous lesions; primarily in the myocardium, which opens up the possibilities of this infection as a factor in the increasing myocardial affections of unknown origin. His experience leads him to believe that syphilis, congenital and acquired, is the most common etiological factor in endocardial and myocardial disease.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

May, 1914

Spinal Anesthesia in Pelvic Surgery.—Anspach, reviewing his experience in thirty-six cases, believes that spinal anesthesia is the best method in selected cases. A general anesthesia may be undesirable or dangerous. Cardiac, pulmonary, or renal lesions may be of such a nature that general anesthesia will embarrass or injure the circulatory, respiratory or urinary systems. In toxic states the excretory organs have already been taxed to the utmost; the addition of another poison will mean excretory insufficiency. The technic, that of Babcock, is given in detail, and difficulties of administration are clearly discussed. Emphasis is laid upon the necessity of immediately lowering the patient from the sitting position as

soon as the injection is given. This necessity obtains particularly when a solution of lighter specific gravity than the spinal fluid is used. Attention is called to comparison of fatal results in spinal and general anesthesia. Postoperative morbidity, and deaths from pneumonia, kidney failure, etc., are more numerous after ether or chloroform anesthesia. Anspach does not believe that there is much immediate danger to the cord when the technic is carried out properly. As to the possibility of late degenerations with motor or sensory paralysis, he does not speak from personal observation, but he knows of no authentic instance and considers them very improbable.

Sarcomatous Change in Uterine Fibromyoma.—Geist in a study of 250 cases of uterine and cervical fibromyoma, found twelve that showed sarcomatous changes of various types, 4.8 per cent. In most instances, the myomas were multiple with but one focus of sarcomatous change. In but one instance were sarcomatous areas multiple. This change appears to be most common about the time of the menopause; treatment should be influenced by that fact. The Röntgen ray treatment of myomas has rapidly grown in popularity, but Geist holds that it is not a safe method. Hemorrhage is often stopped by it and consequently no operative treatment is employed. The sarcoma is probably uninfluenced, the condition is recognized with great difficulty, if at all; and hence the tumor becomes so extensive that nothing can be done. The proper procedure is undoubtedly operative; the operation should be a panhysterectomy. The older operation, a supravaginal amputation, is undoubtedly the cause of the relatively frequent recurrences.

Necrosis of Uterine Fibroma.—Shoemaker believes that the best treatment of necrotic fibromas is preventive, in other words, removal of all large or growing tumors or those which cause symptoms before they become necrotic. He holds that the x ray is a temporizing expedient which will result in many deaths, either from overlooked cancer or late complications. Whenever possible, tumors should be removed by the vagina; the uterus, if possible, is left and the ovaries are left if hysterectomy is done.

Immediate Repair of Perineal Lacerations.—Baughman agrees with most of the obstetricians that immediate repair of perineal lacerations, no matter how slight, should be insisted upon. He then illustrates with pictures and text the Robins method by means of which his results have been good in almost every instance.

A Simple Method of Testing for Formalin after the Administration of Urotropin.—Kaufmann quotes Burnham that formalin must be in a solution of at least one to 20,000 to have an inhibitory effect on microorganisms. The drawback of previous tests was that they were too delicate; they would give a reaction for urotropin but not for formalin. Burnham devised a test that differentiates between urotropin and free formalin. By a series of experiments, Kaufmann found that each individual must be tested as to the dose required; some required over 100 grains daily, without any apparent ill effects before free formalin was found in the fluids.

AMERICAN JOURNAL OF TROPICAL DISEASES AND PREVENTIVE MEDICINE.

April, 1914.

Ankylostomiasis.—C. M. Fauntleroy, discussing the treatment of this condition, urges that before attack on the parasites is begun, the patient should be carefully examined as to his internal organs. If practicable, the degree of anemia should be accurately determined, as thymol is dangerous in patients with diseased organs or extreme anemia. In the average case, after dieting and catharsis with magnesium sulphate, on the preceding evening, one gram of thymol should be given in the morning at 6 o'clock, another gram at 8, and a dose of magnesium sulphate at 10. No food should be given until 11, when tea without milk or a little broth may be allowed. Upon taking the thymol, and until a half hour after the second dose, the patient should lie down—at first on the right side to favor rapid entrance of the drug into the intestine. If the bowels do not act vigorously in about four hours after the last dose of thymol, another dose of magnesium sulphate should be given. The treatment should be repeated, if necessary, once or twice a week until the ova can no longer be found in the feces on repeated microscopic examination after two or three weeks. A mixture consisting of oil of eucalyptus, 30 minims, chloroform, 15 minims, and castor oil, 10 drams, is recommended instead of thymol in children and debilitated adults. It is safer, and can be repeated on successive days. The bowels are cleaned out by a saline purgative the evening before, and the foregoing mixture is given in halves at a half hour interval. The area of skin showing the eruption—"ground itch"—should be cleaned with green soap and water and then dressed with a lotion of one in 50 or one in 100 phenol, or with a phenolized salve. The infected area should be bandaged and the patient required to wear shoes and stockings. Iron should be given internally upon completion of the thymol or other parasiticide treatment.

ANNALS OF SURGERY.

March, 1914.

Prostatism.—Henry Wade draws the following conclusions as regards the treatment of prostatism from the standpoint of the pathology of the diseases: Three outstanding varieties of disease lead to prostatism, prostatic hypertrophy or chronic lobular prostatitis, prostatic fibrosis or chronic interstitial prostatitis, prostatic carcinoma. The first is by far the commonest cause of prostatism and was present in eighty-two per cent. of the author's specimens. Chronic lobular prostatitis is a senile hyperplasia, an aberrant overgrowth of tissue that is not the result of the appearance of an independent new growth, but is liable to develop into one. Chronic lobular prostatitis in the majority of cases produces prostatic hypertrophy. It virtually always develops in the middle lobe and is almost uniformly confined to the middle and lateral lobes. The writer believes that the operation of suprapubic prostatectomy by blind enucleation is unsuitable in cases of prostatism due to other causes than advanced chronic lobular prostatitis. These cases should have the perineal route.

Suprapubic versus Perineal Prostatectomy.—John B. Deaver summarizes the advantages of suprapubic over the perineal operation: 1. The approach to the prostate is simple and practically bloodless. 2. The enucleation of adenomatous growths is accomplished with ease. 3. The working field is large and under perfect control. 4 The prostate is accessible and can be made more so by digital pressure on its rectal surface, and without the danger of injury to the bladder from the use of tractors necessary in the perineal operation. 5. The muscular control of the bladder is not disturbed, since the internal sphincter may be avoided and the compressor urethræ lies outside the line of cleavage. Incontinence is therefore less frequent following this technic. 6. Permanent fistulas are less frequent after the suprapubic operation. They never occur in fact if bougies are passed regularly. 7. Stones can more easily be removed. 8. Sexual potency is maintained as frequently after the suprapubic operation as after the perineal and the question of sterility is rarely of any consequence. 9. The mortality is, in properly selected cases, no greater, and the percentage of uncomplicated cures is larger.

ARCHIVES OF INTERNAL MEDICINE.

April, 1914.

Systemic Blastomycosis.—A. M. Stober discusses at length the pathological, bacteriological, and clinical features of systemic blastomycosis. Of the twenty-nine cases collected, two thirds occurred under the age of thirty-four years and all but two were in men. In at least fourteen cases, the first symptoms were referable to the lungs, suggesting the respiratory tract as the usual route of infection. Pulmonary symptoms occurred sooner or later in all cases. The diagnosis must be based on demonstration of the blastomycetes in the sputum or in the pus of various lesions; the organisms are easily overlooked in stained preparations. Blastomycosis should be ruled out in all cases of chronic pustular or ulcerative skin lesions, wasting pulmonary disease, spontaneous superficial or deep abcesses, especially when connected with the bones, suppurative arthritis, and suspected Pott's disease. The prognosis in systemic blastomycosis is bad, only three cases of the series ending in recovery. In treatment, the influence of food, climate, and hygiene is important. Potassium iodide in large doses seemed to cure one of the three patients who recovered. For the cough, pain, and insomnia, codeine is especially valuable. Excision of cutaneous lesions, aspiration and drainage of abcesses give good results. Solutions of copper sulphate and iodine were found useful for irrigation of abcesses. Vaccination with a filtrate or suspension of triturated membranes of the organism, grown at room temperature in bouillon for two to six months, was practised in two systemic cases. One patient recovered, and the measure is considered promising by the author. A von Pirquet test performed with the suspension was found of diagnostic value, a distinct papule, persisting four days, being produced.

Multiple Primary Malignant Tumors.—F. K. Bartlett, from a review of ninety-five cases, asserts that multiple primary tumors occur in about 0.2 per cent. of all cases of malignant tumors. Some multiple tumors, arising close together in one type of tissue, indicate a local tendency to malignant degeneration; others are essentially bilateral, occurring in the ovaries, testes, kidneys, and adrenals; still others indicate a systemic involvement, affecting mainly the reproductive, gastrointestinal, and cutaneous systems; in a fourth, smaller group, the tumors are distributed miscellaneously, and apparently have no common features.

Fatty Infiltration of the Auriculoventricular Bundle.—F. Nuzum states that while replacement by adipose tissue—lipomatosis—is regularly found in the bundle of His in elderly people, it is not extensive enough to cause symptoms. Fahr, however, has reported a case of such lipomatosis sufficiently marked to cause Adams-Stokes symptoms and finally death. Nuzum's case was one of sudden death, with lipomatosis of the bundle of His apparently alone responsible.

Blood Pressures and Physical Efficiency.—J. H. Barach and W. L. Marks, in addition to observations of the maximum and minimum blood pressure in 656 healthy young men, report that in eighty-eight per cent. of a series of 629 cases, the pulse pressure ranged between twenty and seventy mm. Hg. There was no constant relation between pulse and diastolic pressure, nor between physical efficiency (meaning also circulatory efficiency), and the ratio of pulse pressure to diastolic pressure.

Cardiac Displacement in Pulmonary Tuberculosis.—M. Fishberg asserts that in far advanced phthisis, seventy-five per cent. of cases show cardiac displacement, and in moderately advanced cases between one third and one half. The dislocation is usually caused by traction from the affected side, which may be increased by emphysema of the lung on the opposite side. Often one can determine on which side the tuberculous lesion is situated; in bilateral lesions, the older or more extensive lesion is found by determining the position of the heart. About two thirds of all displacements are toward the left, but in far advanced cases dextrocardia exists in about one half. Often the heart is not only dislocated but also rotated on its vertical axis. Its base may be brought nearer the chest wall, and the apex pushed or pulled away from it. Where one finds only one point of cardiac impulse, it is usually the right ventricle that pulsates and not the apex, the latter being turned away from the chest wall. Cardiac displacements are to some extent responsible for the tachycardia and dyspnea of phthisis.

ARCHIVES OF OPHTHALMOLOGY

May, 1914

Successful Treatment of a Corneal Tumor with Radium.—Albert F. Mattice reports the case of a man aged fifty-three years, who had two flesh colored, granulationlike masses situated partly in the bulbar conjunctiva, partly in the cornea. The clinical appearance was that of epithelioma, but the patient objected so strongly to anything like surgical intervention, that none of the tissue was obtained for microscopical examination. The growth had appeared about three and a half years before as a

little white pimple at the lower margin of the cornea; it gradually grew larger and spread over the surface. Vision on admission was light perception at twenty feet, projection uncertain. Tension: 1. Radium barium carbonate was applied in a square box with a mica cover containing five mg. The eye was cocainized and held open with a speculum, while the mica cover was placed directly upon the tumor and held on each of the masses for six minutes. No discomfort was produced. The first change noted was a rather intense injection of the eye, which appeared the next day, accompanied by some pain. This injection gradually increased until on the third day the conjunctival vessels around the tumor masses and in the pannuslike tissue covering the cornea were very much swollen. Measurements taken at this time showed that the two masses were slightly reduced in size. One week from the first application, two others of twelve minutes each were made to the two growths. On the next day, a marked conjunctival injection had appeared, accompanied as before by some pain, which at times seemed fairly considerable. On the fourth day, the eye had become intensely injected and the two tumor masses, as well as the intermediate growth covering the cornea, were seen to be covered with a thin whitish membrane, which by the following day had become a thick pseudomembrane. Pain was intense. This condition persisted for a few days and then began to improve, the injection diminishing, and the membrane commencing to peel off. Two weeks after the second application the eye was only moderately injected, the membrane had disintegrated into shreds, and the two tumor masses had greatly shrunken; the iris was indistinctly visible. The patient could see movements of the hand. Five weeks from the beginning of treatment, the two tumor masses were reduced to two small remnants, the pseudomembrane had disappeared, the cornea was fairly clear, though covered by a very thin, transparent, pannuslike membrane containing many fine vessels. Six weeks from the beginning of treatment, the third and last application was made, each tumor getting fifteen minutes' radiation. A week later the condition had not materially changed, and the vision was fingers at one metre. Three months later no trace of the tumor was to be seen aside from a few maculæ and superficial vessels in the cornea. The vision was 20/70. Mattice calls attention to the duration of the sittings, which were much shorter than the thirty to sixty minute periods advised by Koster, which, to judge from the reaction obtained in six minutes, would have been dangerous to the eye. It would therefore seem to be necessary that the strength of any particular brand of radium should be carefully tested before it is used extensively in ophthalmology.

Anatomical Study of Temporal Conus (Coloboma) in a Hyperopic Eye.—E. V. L. Brown gives the results of his examination of a case of this nature. Essentially he found a crescentic defect in the pigment epithelium, the choroid, and the inner layers of the sclera along the temporal border of the disc. Almost the entire defect was bridged over and filled out by a fold or a duplicature of the retina which was a direct continuation of the two nuclear layers. The nerve fibres did not dip back into the conus at all, but went directly over into the nerve head in the usual way. The sclera was nowhere ectatic. From these findings he concludes that Elschnig's theory of excessive proliferation of the margins of the secondary optic vesicle and subsequent interference with the development of the choroid, sclera, and sheaths, offers the best explanation of the cases of atypical coloboma or conus of the optic nerve entrance heretofore reported, as well as of the findings reported by himself.

SOUTHERN MEDICAL JOURNAL.

May, 1914

Investigation of Malaria by the United States Public Health Service.—R. H. von Ezdorf gives a summary of this work in the States of Alabama, Arkansas, Mississippi, North Carolina, South Carolina, Georgia, Florida, and Tennessee, under the heads of statistics, types of infection, distribution of anopheles mosquitoes, surveys and malarial index, educational agencies, antimalarial work of communities and State boards of health.

Malaria as a Public Health Problem.—H. H. Shoulders says that malaria may be intercepted at different points in its route if various principles are adopted, each of which, if thoroughly carried out, might accomplish the eradication of the disease. These principles may be classified as follows 1. Individual protection from infected mosquitoes; 2, mosquito destruction; 3, preventing infected persons from infecting mosquitoes. Immunization with quinine might be mentioned, but this is really destroying the infection as it enters. He proceeds to the measures which may be employed in following the principles named.

Treatment and Cure of Malaria.—C. C. Bass states that quinine is destructive to the asexual cycle of malarial plasmodia, but neither quinine nor any other drug is known to have the slightest destructive effect on the sexual form of the parasite. Quinine cannot be expected to destroy any parasites except those with which it is brought into contact, and, therefore, it destroys those in the circulating blood. The asexual parasites of the different species vary widely as to the length of time spent in the circulating blood and that spent in the capillaries. The amount of quinine necessary to kill all asexual plasmodia circulating in the blood does not in any case exceed thirty grains during each twenty-four hours. Tertian plasmodia are nearly always killed by twenty grains a day, and sometimes by a much smaller quantity. Since thirty grains a day are borne by most adults, this amount should be administered in all except very rare instances; and the dogmatic statement may be made that all asexual plasmodia of any species will be killed by thirty grains daily for three days. There is some kind of reproduction not now understood of sexual parasites in the human body, which takes place in seven and multiples of seven days; giving rise to the relapses which occur on such days. These sexual parasites must either reproduce or die of age. It has not been definitely determined how long they may live without reproduction, but the time is probably between two and four weeks. Though

quinine cannot kill sexual parasites, in proper amount, it will kill their products. All that is necessary entirely to sterilize the blood of a patient is to give him thirty grains of quinine on every seventh day for four weeks or, perhaps, for six weeks. Occasionally cases of malaria are met with in which a very great proportion of the red cells are infected, so that life may seem to depend upon getting some quinine into the blood at once; or, again, very ill patients may vomit anything given by the mouth. In such instances, the intravenous route may be resorted to. A soluble salt, such as the bihydrochloride, should be selected, and it should be well diluted with salt solution. Ten grains at a dose will kill as many plasmodia as a larger amount, and twenty grains may prove dangerous. Quinine should be given intravenously only until it can be given by the mouth. The hypodermic injection of quinine has no place in the treatment of malaria and may be harmful.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held at the New York Academy of Medicine, December 2, 1913.

The President, Dr. Smith Ely Jelliffe, in the Chair.

Subcortical Visual Aphasia.—Dr. C. C. Beling, of Newark, N. J., presented a man, sixty-two years old, married, who was referred to him on February 28, 1913, by Dr. F. W. Webner. His family history was unimportant. The patient was a teacher, a highly educated man, whose habits had always been moderate. He had been engaged at his profession for over forty years, and at the present time was superintendent of the public schools in a large city. Between the ages of forty-two and fifty years, he spent hours and days in the investigation of armor plating and the study of electricity as a recreation and diversion. He afterward thought that these diversions were not of the right sort, as they were too brain racking. Excepting for an attack of inflammatory rheumatism twelve years ago, he had always enjoyed good health. There was no venereal history. On February 23, 1913, the patient first noticed some difficulty in reading his morning paper, and on the following morning he could not read at all. On the same day he consulted Doctor Webner, an ophthalmologist; in the afternoon he visited a neighboring city to attend an educational meeting for which he had prepared a paper. He found that he was unable to read his paper, and it had to be read for him. When Doctor Beling first saw the patient on February 28, 1913, he complained of a feeling of constriction in the left temporofrontal region, together with a failure of vision and inability to read. The pupils were regular, of equal size, and reacted normally. The fundi only showed evidence of disease due to myopia. Color recognition was very much impaired, and it was almost impossible for him to distinguish one color from another. There was a right homonymous hemianopsia.

The patient's vocabulary was much more limited than normal, especially without distinct conscious effort. Pronunciation and speech were fluent; words or syllables were not displaced and the interpretation of nouns and verbs was accurate. He could write spontaneously, but writing meant nothing to him. He read many letters incorrectly. He did not understand written questions nor commands that were shown to him, yet their letters and forms were distinct to him, but not their names and sounds. He could repeat the alphabet readily. He was unable to copy from printed to written letters, but he could copy from print to print and with difficulty from writing to writing. He could write from dictation words that he heard and could repeat them correctly. Objects seen he could name only with the greatest difficulty, and by a process of roundabout association. He was unable to estimate distances correctly. There were no visual hallucinations.

The patient had a systolic murmur at the apex, with marked accentuation of the second aortic sound. The blood pressure was 250 mm. Hg.; pulse, 60. The reflexes of the upper extremity were active. The patellar reflexes were exaggerated, especially on the right side. There was no Babinski: no ankle clonus; no rectal nor vesical involvement. No sensory disturbances to touch, temperature, or pain. The examination was otherwise negative. The patient stated that he had a subjective loss of equilibrium. There were no evidences of ataxia.

The diagnosis in this case was subcortical visual aphasia (pure word blindness or alexia), associated with right homonymous hemianopsia and hemiachromatopsia, indicating a subcortical lesion beneath the left angular gyrus, probably hemorrhagic in nature, cutting off the afferent visual impulses from both half vision centres to the visual word centre, and to some extent implicating the optic radiation.

When the patient himself was invited to give a description of his symptoms, he said that it seemed queer to a man who had been engaged in school work all his life to find himself unable to read even the simplest words. He stated that his vocabulary had not been greatly impaired, but his chief difficulty was in recalling proper names, even those of his relatives and intimate friends. General terms came to him quite easily, and he had less difficulty in recalling the first name of persons he knew intimately than the family name. He was now gradually trying to reeducate himself, and had arrived at a stage where he could recognize two or three letters of a word at a time. At first he found it necessary to learn one letter at a time. It had been impossible to read words as "wholes" except words of one or two letters, and a few of the commonest words of three letters, as boy, dog, etc. In general, he had found it necessary in reading to name the letters of a word one by one until all had been named, or enough to infer the rest of the word. This act consisted in essentially converting visual percepts of letters into auditory percepts. He had found that some letters were recognized more readily than others. Thus the capitals A, O, W, and X were among the most easily recognized. Certain letters became very easy to identify after

their peculiar marks had been fixed in the memory. For example, G became easily recognizable by the thickened part at the lower extremity; g by its variation from the o.

Among small letters, d and b had been difficult to discriminate. They were discriminated as visual percepts, but the difficulty was in *naming*. He had found helpful the device of describing letters sometimes employed in teaching children, as, for instance, "round O," "crooked S," "dotted i," "crossed t," etc.

In reply to a question as to whether throughout his life the visual or the auditory had predominated in his perception of language, he said that as a small boy his memory for spoken words was very acute, and after listening to even long sentences, he could repeat them accurately. In the course of years, however, he had come to rely more upon his visual perception than upon the auditory, and had even schooled himself to inhibit auditory impressions that did not particularly appeal to him. In short, he had increased the power of the eye at the expense of that of the ear.

Brain Neoplasm with Unusual Features.—Dr. Louis Casamajor presented a negress, fourteen years old, who was admitted to the Neurological Institute, third division, March 7, 1911, with a history of failing sight and hearing, and partial inability to use the right arm and leg. Her symptoms dated back several months and were growing progressively worse. The patient's family history was negative. The mother had had no miscarriages, and both parents were in good health. Two children had died in infancy and there were two other children, alive and well. There was no history of epilepsy, insanity, or other nervous disease, and with the exception of measles in infancy, the child had always been in good health until August, 1910, when she began to complain of headaches, and became cross eyed. She was taken to the Vanderbilt Clinic, where glasses were ordered, and her symptoms disappeared within six weeks. In November, 1910, it was noticed that the child slept more than usual and complained of occasional headaches. A month later there was some loss of function in the right arm; the fingers were stiff and numb, and within a fortnight she began to complain of weakness of the right knee and stiffness of the leg. Subsequently, her sight and hearing became impaired and grew progressively worse. Physical examination showed a dull, undersized negress, with a well marked right hemiplegia, with increased reflexes on this side, but no Babinski. An examination of the eyes made by Dr. Ward A. Holden showed papilloedema of three to four diopters on each side, with beginning atrophy. Vision was 20/70, right and left. The visual fields were normal; the Wassermann test was negative, as was also the uranalysis.

The operation was performed March 11, 1911, by Dr. Charles A. Elsberg. A right subtemporal decompression showed that the intracranial pressure was markedly increased. The operation was followed by a hernia cerebri, which grew to the size of a croquet ball, and the patient's condition became progressively worse. She gradually became totally blind, so that she would ask whether the sun was shining or not, and could hear only very loud sounds. Her right hemiplegia progressed, and by June, 1911, she was practically bedridden, blind, and deaf. In September, the mother, who objected to the large hernia cerebri chiefly on cosmetic grounds, began to bandage the head tightly. With this, the patient immediately began to improve. The hernia became smaller and the child much brighter. The sight and hearing gradually returned, but the hemiplegia remained about the same, and at the present time the girl was able to see as well as before the operation, although the optic discs looked very much atrophied. There was no deafness of any account. The hemiplegia was evident, the right arm being more affected than the leg. She walked with a slight right limp, while the right hand was contracted and useless. The decompression opening was soft, and there were no evidences of any increased intracranial pressure. Doctor Casamajor said this patient was presented in the hope that some of the members would be able to tell him what had happened in this case.

Doctor Sachs, more than ten years ago, saw a case in which Dr. Arpad G. Gerster had operated for him to relieve symptoms of intracranial pressure similar to those in the case shown by Doctor Casamajor, and attributed to a neoplasm. Upon trephining the skull and incising the dura, a vascular tumor of enormous size presented itself. On account of the patient's condition, no attempt was made to remove the growth, and after this simple decompression the patient recovered from all her symptoms, excepting that there was no improvement in the double optic atrophy which had existed prior to the operation. In the case shown tonight, as in his own case, there may have been a vascular neoplasm which underwent a process of retrogression and which may have been hastened by the constant pressure applied by the child's mother.

Doctor Abrahamson said that in the case shown by Doctor Casamajor there was probably a cyst near the ventricle, which, aided by the pressure applied, may have emptied into the ventricle; or else a localized posterior basic serous meningitis, with retention of fluid in the larger cisterns; here the increased pressure from without was the means of reestablishment of the circulation of the cerebrospinal fluid.

Muscular Atrophy on a Syphilitic Basis.—Doctor Casamajor presented a man, twenty-eight years old, a German soda water clerk, with paralysis and marked atrophy of the muscles of the right shoulder girdle and arm. The patient's previous history was negative, excepting a syphilitic infection six years ago, which was insufficiently treated. About the end of September, 1913, the patient noticed that his right arm and shoulder were getting weak. He first had difficulty in reaching objects over his head. This weakness gradually increased, and in the middle of November he was compelled to give up his work, as he could no longer raise the arm. On November 24th, he was admitted to the Neurological Institute. He had never had any pain in the arm or elsewhere. Physical examination showed a well built and nourished

young man with marked atrophy of the right arm and shoulder girdle. There was total flaccid paralysis of the deltoid and other shoulder muscles. Extension of the elbow was fairly strong, but flexion was practically lost. The forearm and hand muscles were much weaker on the right than on the left side. Measurements showed that the right arm was one-inch smaller in circumference than the left. The reflexes were much diminished in the right arm. There was no sensory loss. The electrical test showed a partial reaction of degeneration in the right shoulder girdle muscles, and the other muscles of the right arm were electrically hypoexcitable. There were no abnormal signs in the rest of the body. Serological examinations gave the following results: Blood serum, Wassermann positive. Cerebrospinal fluid, Wassermann positive; globulin normal; cells, 149 lymphocytes per c. mm. The patient had made slight improvement under active antisyphilitic treatment.

Dr. I. Strauss said the case was in line with the investigations made by Spiller in connection with progressive muscular atrophy; he found syphilitic changes in the cord in many of those cases. This case was in some respects even more important, because Spiller's findings were based on post mortem material, while here the Wassermann and other tests left little doubt as to the nature of the lesion.

Dr. Frederick Tilney, of Brooklyn, had seen two cases of muscular atrophy with positive Wassermann reactions in the blood and spinal fluid. In both instances the atrophy was progressive. The trouble started in the shoulder girdle, then extended to the biceps and triceps, and to the muscles of the forearm and hand. One of the cases, after eight years, showed distinct involvement of the sternocleidomastoid and trapezius, and the man now had the characteristic deformity resulting from the involvement of those muscles. In one of the cases, that of the longest duration, the muscles showed complete reaction of degeneration, while in the others there were some indications of degenerative changes in the muscles.

Etiology of Mental Torticollis.—Dr. L. Pierce Clark said that not the least important fact brought out by the modern analysis of mental disorders was the enormous significance of a closer study of infantile life. A few years ago it was thought that little or no mental note bearing on the after life was taken by the child before five or six years of age. It had been conclusively proved to most of them, however, that it was precisely the early childhood that was most important in the formation of physical and mental habits. From a neurological and psychiatrical standpoint the nursery life of the child was of the greatest importance in determining the trends that in later life made for safe voyaging or mental shipwreck. To many, these statements might appear more or less trite and commonplace, but at the risk of restating the obvious, the speaker wished to call attention to these views with the hope that studies of the infantile mental life might be a matter of more frequent report in their study of the neuroses and psychoneuroses. As the latter class of nervous disorders made up the major portion of neurological practice, the practical value of these remarks was evident. It mattered little for the purpose of this discussion whether all types of torticollis were classed with pure spasm, or whether some of them were tics in their real nature, as he would confine himself to that sort of muscular spasm of the spinal accessory distribution which behaved like a tic in that it was a reflex, defensive, or voluntary movement which had assumed an imperative character, had been long enduring and was not of a simple reflex origin nor of the rheumatic type. He then reported the case of an unmarried man, thirty-four years old, a bookkeeper, who was referred to him two years ago for study and treatment by Dr. Reginald H. Sayre, with the history that for the preceding three years the patient had suffered from a severe degree of spasmodic torticollis of the tic type which had defied all lines of treatment, even to that of full nerve resection of the spinal accessory. Aside from some degree of neurotic instability in the patient's immediate family, and a moderate degree of alcoholism in the father, who died of Bright's disease, the family history was negative. The patient suffered from no physical defect aside from a gradually increasing and severe left sided spasmodic torticollis. For a year he had received inhibitional and medicopedagogical training, which only ameliorated the torticollis.

In reporting this case, he would lay special stress upon the psychical history of the patient, the personality study, and habit formation. Briefly, he was always of a nervous temperament and especially lacked self confidence. He was given to rigid self examination and worry before each new task, even while at school, and this same feeling of inadequacy followed him in business life later. An analysis of the sexual life showed that he had little sexual curiosity until about thirteen years of age. The embryo formation of sex hunger, however, showed itself at a very early age in his firm attachment to his mother, who died when the patient was but a child. When he was five and a half years old, while at school, he began the habit of stroking the left side of the occiput with the left hand. This rather common habit persisted throughout the whole of the patient's adolescent and adult life until about one year before the torticollis appeared. At this latter time the whole habit forming movement became for the first time a fully conscious one, and the patient made up his mind that the habit was purely mental. After considerable trials and self conscious effort, he succeeded in breaking himself of raising his left hand to his head, but each time he checked the hand he noticed a slight instability, a sort of shaking tremor in the head, the maximum excursive movement of which was to the left. In the patient's words, "it seemed to be teasing for the petting movement of the left hand, as of old." Upon more definite analysis it was learned that in his home instruction by an elder sister, the patient used to recite to her, and during such recitations her right hand kept up a caressing movement of the head which was afterward maintained by the patient himself, as he imagined this head stroking enabled him to gain confidence and learn easily.

Briefly, then, they had to deal with a neuropathic

individual in whom this torticollis of the tic type seemed to have been precipitated by the character of his work, but which had its essential origin in the order of its development from an infantile, pleasurable stroking movement started by his mother and continued after her death by his sister and himself through school, adolescent, and adult life until brought into the conscious life, when the patient strove to break himself of the habit. Then the head acquired a symbol or fragment mechanism, and continued to perform its part of the act after the hand had ceased to cooperate in its part of the habit. Even a short summary of the genesis of this single case of torticollis showed the enormous pains one must take in unraveling the complicated mechanisms concerned in this form of psychoneurosis. Nor was the end yet. When the patient was given the full benefit of this analysis several months ago, there was an astonishing and immediate improvement. The old feeling of tension to hold the head steady largely disappeared, but still the patient had not fully recovered. He still showed feelings of inadequacy, and under difficult situations the torticollis returned, less completely and intensely, it was true, but at times the tic was still present. Analysis was now in progress to root out the central core of inadequacy of feeling and will, etc., as far as possible. He was justified in saying that the central core of habit movements in this case was an autopleasurable act or acts based upon an inherent defect, and that the modern analysis of the tics and habit movements proved that the two were at bottom essentially alike in genesis, and that they were but a part of a large class of obsessive neuroses, and should be handled and treated as such.

Dr. REGINALD H. SAYRE's experience with these cases of convulsive tic had convinced him that comparatively little could be done for them by surgical intervention. He recalled one aggravated case, a man who made horrible salaam movements and yet could ride the bicycle remarkably well, who improved for a few days after his posterior nerve roots were cut; then his head again began to wabble and subsequently the abdominal muscles became involved, so that he was worse off than before. The patient described by Doctor Clark was put through a course of gymnastics, with only temporary benefit. He was then referred to an ophthalmologist, and glasses were ordered, but with no result. Doctor Sayre then divided the right spinal accessory and the posterior roots of the upper three cervical nerves. For a time the patient seemed better, but soon relapsed and was practically in the same state as before the operation, and it was not until Doctor Clark took him under his care that he was able to hold his head at all quietly for any length of time. Doctor Sayre said that when he last saw the patient he could go for several days without a convulsive tic, whereas before Doctor Clark treated him the tic occurred about every twenty seconds. It seemed to him that these cases should be treated by the neurologist rather than from a surgical standpoint.

Doctor KENNEDY said that the paper recalled to his mind several cases of this type, one that of a ship's carpenter in the English navy, whose work compelled him to watch a lathe for many hours each day. When he passed the age of fifty years he retired from the navy, and one day his boy was accidentally drowned. The father was greatly shocked when he heard the news, and that night became subject to a peculiar head movement, apparently watching an imaginary lathe, as he had done for so many years. Various methods of treatment were unsuccessfully tried, and finally, an extensive nerve section was done with disastrous results. In that case psychoanalysis would probably have shown that these head movements were of subconscious origin, and took the man back to a time of life when his boy was still with him.

A second case was that of a woman of fifty years, who for upward of twenty years had suffered from a serious form of torticollis. She had consulted numerous physicians, had taken large quantities of drugs, and had submitted to posterior nerve cutting. Upon investigation it was learned that as a girl she was very fond of the violin, and had determined to make that her life profession, but she was the daughter of a strait laced New England teacher who objected so strenuously to her proposed profession that she gave up playing the violin entirely and soon afterward showed this inclination of the head toward the side on which she formerly held the instrument.

Dr. H. W. FRINK said they must not forget that psychoanalysis really consisted in two processes—a process of investigation and a process of interpretation. As a searching and exhaustive method of investigation it had not yet been equalled. In one of his cases, for instance, he had seen the patient for at least an hour every day for a year. No other situation in either professional or private life gave the patient such an opportunity to disclose extensively what he really thought about, or so encouraged and favored this disclosure, as did treatment by psychoanalysis. The analyst had, therefore, an opportunity to collect facts which was not offered by any other means of study yet devised. On this account, the report of information brought out by a psychoanalysis should be regarded with no small respect, and if it contained observations that did not accord with certain notions popularly entertained, one should be slow to deny the correctness or significance of these observations until he had employed a method of study that was equally careful and equally favorable for the disclosure of intimate facts.

Doctor SACHS said that if any sense of self superiority had been shown in connection with this general subject, it had been entirely on the part of the psychoanalysts, who seemed to have lost their common sense altogether. If any of the members present had, perchance, smiled in listening to a paper of this character, the speaker thought they were perfectly justified. He was entirely willing to include himself among that number, and he did not hesitate to say that he would continue to smile at any attempt to ascribe the symptoms of spasmodic torticollis, coming on in adult life, to sex hunger or head stroking in childhood. Such a course of reasoning seemed to him little less than an absurdity; it was revolting to the mind of any man trained in ordinary logic, and if this indicated the future

trend of their present day neurology, then the less they heard of it, the better.

Dr. I. Abrahamson found it hard to conceive any connection between a torticollis and head stroking in childhood, and if they accepted such an etiology, surely this condition would be almost universal. One might as well go back to intrauterine life and make the assertion that the torticollis was the result of a breech presentation in which the child's arms were clasped about the neck.

Doctor Kennedy said the etiology of torticollis was so obscure that they should be rather cautious in rejecting or beating down any hypothesis that had been carefully thought out and presented for their consideration. The mere assertion that a hypothesis was untrue did not prove it so. While Doctor Clark had not proved the truth of his hypothesis, it was presented in good faith and might help them in solving the problem of the etiology of torticollis. Perhaps they might never find it, but this at least gave them a basis on which to work.

Doctor Sayre said that while this discussion between the psychoanalysts and antipsychoanlysts was very interesting, the fact still remained that Doctor Clark, in gaining control over this patient's mind, had also gained control over the movements of the head. Previous to that, there had been some improvement after a course of gymnastic exercises taken by the patient before a mirror, but the treatment had been less effective.

Doctor Leszynsky, some years ago, took a great deal of interest in the treatment of torticollis, and had an impression that the condition was not as frequent now as formerly. The important point in the treatment of these cases was to gain control of the patient and teach the latter how to control himself. This, apparently, Doctor Clark had done with the expenditure of a great deal of time and work, and the result, seemingly, had justified his efforts. Doctor Leszynsky recalled a very severe case of torticollis in a girl, a bookfolder, with a clonic movement of the head occurring with great frequency. In that case he gave intramuscular atropine injections, increasing the dose up to one sixth of a grain, when she made a complete recovery. The case was reported in the *Medical Record* over twenty years ago. Subsequently, he found atropine effective in other cases, but not invariably. In two other cases the patients were referred to Doctor Kruna, and were given psychomotor reeducation treatment with very good results. There was no excuse, the speaker said, for surgical intervention in these cases, and he was surprised that the method was still practised.

Doctor Clark had presented his paper with considerable hesitation, but as it also showed the gradual transition of his own mind from the older view of holding the tics as defenses against unpleasant situations of life to that of being really pleasurable gratifications to the psyche, it was worth while as an exposition of the manner by which his own conversion had been brought about. It showed the successive stages or orders of treatment for the tics from nerve cutting to psychoanalysis. When the reporter allowed himself to assume more of a passive role and really permitted the patient to evolve something of his own difficulties and the manner of development of the diseased tic, he was on the right road to cure the patient, who was now practically well of the tic, but still had much readjustment of his whole life, its mental infantilism, to set right.

Letters to the Editors.

WANTED, AN ALKALOID OF GELSEMIUM FOR MALARIA.

Fort Pierce, Fla., *May 25, 1914.*

To the Editors:

The value of ipecac in dysentery has been known for one or two centuries, yet only lately we have learned how to use emetin to kill the ameba and still avoid the undesirable effects of ipecac. The old reliable observers found that gelsemium would at times cure malaria. On test, I find that that depends only on the question: Can the patient take enough without the undesirable effects? In case of toleration of massive doses, one, or at most two days' treatment will kill all malaria in the blood; this holds good for all varieties and in all stages, also acute or chronic. How much longer must we wait for an alkaloid of gelsemium that can be used safely. I think it would be well to have a scientific board of government experts to do such work; now, each doctor must test the theory on his own patients. Give us Team Work! C. G. Roehr, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Tuberculosis. Its Cause, Cure, and Prevention. A Revised Edition of "The Great White Plague." (A Book for Laymen.) By Edward O. Otis, M. D., Professor of Pulmonary Diseases and Climatology, Tufts College Medical School; late President of the Boston Tuberculosis Association, etc. New York: Thomas Y. Crowell Company, 1914. Pp. xv-326. (Price, $1.25.)

This book is replete with commendable features, and it is far from an easy task to select those which are most deserving of mention. Doctor Otis merits special praise for the success with which he has combined a presentation of the scientific aspects of the cause and cure of an unattractive disease in an interesting narrative for the layman. While he has kept the size of the volume within desirable limits, he has done so without having omitted a single aspect of the subject, and he writes in such a cheerful and hopeful mood that when one lays the volume down one does so with a sense of great refreshment. Yet the serious sides of tuberculosis are discussed so plainly and so forcibly as to make an indelible impression on the minds of all except those who *will not* be impressed. His frequent references to the dangers of spitting should be brought to the attention of the host of thoughtless and selfish persons who dwell in our large cities and indulge their filthy habits at all times and in all places. His chapters on the contagious nature of tuberculosis, on the seed and soil, the early symptoms of the disease, and its treatment and curability are worthy of special mention. He sounds a much needed warning against the belief in the curative powers of this or that much lauded remedy, and aptly dubs such medicines "useless remedies." The discussion of the home treatment of tuberculosis contains many suggestions which it would be quite as well for the normal person to heed as for the victim of tuberculosis. Upon the basis of his discussion of the causes of tuberculosis and the means by which the disease can be controlled, Otis makes a serious and able plea for the establishment of a National Bureau of Health, and sows the seed of understanding which should bear fruit in due time. To him who is not a victim of tuberculosis the volume might be of value because it gives an understanding of the disease which should go far

toward staying its spread. To him who is already a sufferer the book bears bright messages of cheer and hope which should make recovery the quicker for mental ease and contentment.

Paul Ehrlich. Eine Darstellung seines wissenschaftlichen Wirkens. Von H. APOLANT, Frankfurt a. M.; H. ARONSON, Berlin; H. BECHHOLD, Frankfurt a. M.; J. BENARIO, Frankfurt a. M.; L. BENDA, Frankfurt a. M.; A. BERTHEIM, Frankfort a. M., etc. Festschrift zum 60. Geburtstage des Forschers (14. Marz 1914). Mit 1 Bildnis. Jena: Gustav Fischer, 1914. Pp. viii-668.

The drawback of writing the *gestes* of a living man is illustrated in this extremely learned and sincerely thoughtful collection of scientific memoirs by a syndicate of experts. Uttered in the flow of a Festschrift, the enthusiastic assertions and half reached truths are borne along by a quick current and given a ring of finality on the score of momentary aptness and extenuating circumstances. But the effect of so much personal declamation is to weary the critic; he is fatigued by the lengthening panegyric, the tumid flattery and Teutonisms. The central object is magnified to gigantic size, and the fine tooling and delicate tracery of time are lost upon a figure of such colossal proportions. The book is divided into seven parts. From the first thesis of Ehrlich down to the last work and eulogy, this is a record of stupendous study and success. Every chapter deserves careful reading. Doctor Bertheim's chemistry of the arsenic compounds is practical and not too difficult. Dr. A. Neisser's opinion that mercury is needful is noteworthy and should please the man of common sense. Of great importance is his remark, "It does not suit me to expound a rule, should I have to choose between using mercury alone or salvarsan alone, that I would choose salvarsan" (p. 527). Contrast this cautious opinion with the extravagant optimism of Professor Benario (p. 614). Professor von Wassermann has a fine excursion into the side chain theory. We are sorry that we are quite unable to do justice to this and other papers. From the whole we get the impression of a man, of much energy of mind and singleness of conviction, glorifying the laboratory and wallowing in popularity.

Defective Ocular Movements and Their Diagnosis. By E. & M. LANDOLT (Paris), Translated by ALFRED ROEMMELE, M. B., Ch. B., and ELMORE W. BREWERTON, F. R. C. S. London: Henry Frowde (Oxford University Press), Hodder & Stoughton, 1913. Pp. 99. (Price, $2.)

The authors of this little book have a genius for condensation. The amount contained in the few pages devoted to the anatomy and physiology of the muscles is remarkable, but the condensation is equally great anywhere in the book. The pithy sentences are full of "meat" and very interesting to anyone well acquainted with the subject, however they may seem to those who are less well informed, for it takes a considerable mental effort to grasp information given in so concise a form. The method employed is excellent; beginning with the symptoms and having these lead up to the diagnosis. It is the way in which these problems are presented to us in practice, and the writers say truly that these problems are much more complicated than those of optics. The cerebral portion of the oculomotor system and the whole nervous system also must always be taken into account. The illustrations are good and helpful.

Clinical Diagnosis and Uranalysis. (The Medical Epitome Series.) A Manual for Students and Practitioners. By JAMES RAE ARNEILL, A. B., M. D., Professor of Medicine and Clinical Medicine in the University of Colorado; Physician to the Denver County Hospital, St. Joseph's Hospital, and St. Luke's Hospital, Denver, etc. Second Edition, Revised and Enlarged. Illustrated with 83 Engravings and a Colored Plate. Lea & Febiger: Philadelphia and New York. Pp. vi-270.

The second edition of this convenient little book embodies all the recent advances, presented in concise though clear language. Beside the customary tests of the blood, stomach contents, feces, sputum, and urine, space is found for such procedures as Wright's coagulation test, cryoscopy, tests for anemia, leucemia, trypanosomiasis, and leucocytosis, Thalman's gonococcus strain, and spinal fluid tests for albumin and dextrose. It reviews briefly serum reactions, including discussions of the Widal, Wassermann, Noguchi, butyric acid, and cobra venom tests.

Interclinical Notes.

Among the titles borne by the late physician to King George, Sir Francis Henry Laking, who died on May 21st, was that of surgeon apothecary to the king and Prince of Wales. In the reign of James I, when it was enacted that no grocer should keep an apothecary's shop, it was also ruled that no surgeon should sell medicines, and it would be interesting to know when the special exception was made in the favor of the royal medical attendant. The long fight for privileges in England between the apothecaries on the one hand, and the chemists and druggists on the other, strange as the distinction may seem to us, is full of interest to the medical historian; it was not until a comparatively recent date that the present lines were drawn between surgeons, physicians, chemists, and druggists.

* * *

In her long career Harvard University has graduated 5,980 lawyers, 4,296 professors and teachers, and 3,375 physicians.

* * *

Not the least useful of the free lectures given to New York people by the board of education, described in the *Outlook* for May 23d by Charles F. Horne, are those on medical subjects, first aid to the injured, for example, in which practical demonstrations are given and use is made of a skeleton and anatomical charts. Audiences at these lectures sometimes number 1,400.

* * *

Henry Farrand Griffin, in the handsomely illustrated double number of the *Outlook* for May 23d, writes, in The Motor Vagabond, that he conceives it to be the finest achievement of the motor car that it should more and more become a democratizing agent. It may indeed democratize the small section of our population which enjoys an income of $5,000 and upward, that is, make them feel equal to one another, having this effect particularly on the owner of the smaller car.

* * *

Beyond competition among magazines, as usual, are the illustrations in the June *Century*. It is somewhat of a shock to find this eminently conservative periodical publishing a story in collaboration with a moving film company, but George Bronson Howard, second of that name, is a coming writer who doubtless knows the coming proprieties, and after all, moving pictures make capital illustrations for moving accidents and hairbreadth scapes. Friend Villon, who has done so much for playwrights, players, and fiction writers, is the hero of Mr. Howard's Romaunt of the Rose.

* * *

The long arm of coincidence takes on a really extravagant reach in Young Abner, by Agnes and Elliott Balestier, in *Young's Magazine* for June; the *jeune premier* is Dr. Philip Rayburn and there are two trained nurses for heroines, while Abner plays the heavy lead. It is a good story if the powerful tonic effects of joy, so dear to the story writer, but of inferior therapeutic merit in real life, are permitted by the not too exacting reader.

Meetings of Local Medical Societies.

MONDAY, *June 1st.*—German Medical Society of the City of New York; Utica Medical Library Association; Niagara Falls Academy of Medicine; Brooklyn Hospital Club; Hornell Medical and Surgical Association.

[illegible] (Section in Dermatology); New York Neurological Society; Amsterdam City, N. Y., Medical Society; Lockport Academy of Medicine; Syracuse Academy of Medicine; Ogdensburgh Medical Association; Oswego Academy of Medicine; Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Medical Society of the County of Yates; Medical Society of the County of Tioga; Medical Society of the County of Orleans.

[illegible] Anesthetists; Society of Alumni of Bellevue Hospital; Harlem Medical Association (annual); Bronx Medical Association; Elmira Academy of Medicine; Psychiatrical Society of New York; Society of Alumni of St.

John's Hospital, Brooklyn; County of Rockland Medical Society; Long Island Society of Anesthetists.

THURSDAY, *June 4th.*—New York Academy of Medicine (stated meeting); Brooklyn Surgical Society; Practitioners' Club, Buffalo (annual); Geneva Medical Society; Glens Falls Medical and Surgical Society.

FRIDAY, *June 5th.*—New York Academy of Medicine (Section in Surgery); Manhattan Dermatological Society; Corning Medical Association.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending May 30, 1914

Brooks, S. D., Senior Surgeon. Detailed to accompany the health officer of Los Angeles, Cal., on inspection of Owens River water supply system. **Brown,** B. W., Surgeon. Directed, on the expiration of his present leave of absence, to proceed to Portland, Ore., and assume charge of the Service at that port, relieving Surgeon G. M. Magruder. **Cofer,** L. E., Assistant Surgeon General. Granted three days' leave of absence from May 20, 1914. **Cumming,** H. S., Surgeon. Detailed to attend the meeting of the Oyster Growers and Dealers' Association of North America at Atlantic City, N. J., May 19 and 20, 1914. **Ebersole,** R. E., Passed Assistant Surgeon. Granted seven days' additional leave of absence from May 21, 1914. **Fox,** Carroll, Surgeon. On request of the State Board of Health of Minnesota, directed to proceed to that State to make, in cooperation with the board, an investigation of sanitary administration in Minnesota. **Le Prince,** Joseph A., Sanitary Engineer. Directed to proceed via Washington, D. C., to Erie, Pa., to make an inspection of Presque Isle in respect to the prevention of disease bearing mosquitoes; thence via Washington, D. C., to Raleigh, N. C., for duty in connection with malaria investigations. **Magruder,** G. M., Surgeon. Upon being relieved by Surgeon B. W. Brown, directed to proceed to Boston, Mass., and assume charge of the United States Marine Hospital at that port. **Manning,** H. M., Passed Assistant Surgeon. Granted ten days' leave of absence from June 3, 1914. **Safford,** M. V., Assistant Surgeon. Directed to proceed to Quincy, Mass., to investigate suspected case of typhus fever. **Turnipseed,** D. C., Assistant Surgeon. Granted seven days' leave of absence en route to station. **Wertenbaker,** C. P., Surgeon. At the request of the secretary of the State Board of Health of Vermont, detailed to attend the meeting of the Vermont Health Officers' Association, at Bellows Falls, Vermont, May 21, 1914. **Williams,** L. L., Surgeon. Detailed to attend the meeting of the American Medico-Psychological Association, Baltimore, Md., May 26 to 29, 1914.

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending May 23, 1914

Cabell, Julian M., Captain, Medical Corps. Ordered to active service, and will report for duty at Vera Cruz, Mexico. **Clark,** Frederick E., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and assigned to Fort Ethan Allen, Vermont. **Foucar,** Frederick H., Captain, Medical Corps. Granted ten days' leave of absence. **Hoskins,** Albert L., First Lieutenant, Medical Reserve Corps. Ordered to active duty in the Medical Reserve Corps and to report to Vera Cruz, Mexico, for duty. **McDiarmid,** Norman L., Captain, Medical Corps. Relieved from temporary duty at the Presidio of Monterey and ordered to the Presidio of San Francisco, Cal., for duty. **Morgan,** Norman D., First Lieutenant, Medical Reserve Corps. Relieved from duty at the Presidio of San Francisco, Cal., and will proceed to his home for relief from active duty. **Whaley,** A. M., Captain, Medical Corps. Orders sending him to Vera Cruz, Mexica, revoked, and ordered to report to the surgeon general's office, Washington, D. C., for duty.

Births, Marriages, and Deaths.

Born.

Fager.—In Harrisburg, Pa., on Saturday, May 16th, to Dr. and Mrs. John Fager, Jr., a son. **Fraser.**—In Wentworth, N. H., on Sunday, May 3d, to Dr. and Mrs. Samuel Fraser, a son.

Married.

Cary—Bard.—In Lancaster, Pa., on Tuesday, May 12th, Dr. Dale E. Cary and Miss Florence E. Bard. **Sheehan—Dwyer.**—In New York, on Thursday, May 14th, Dr. Joseph Eastman Sheehan, of Orange, N. J., and Miss Anastasia Cecilia Dwyer. **Tufts—Gordon.**—In Pittsburgh, Pa., on Wednesday, May 6th, Dr. Stewart W. Tufts and Miss Harriet Helen Gordon.

Died.

Aronson.—In New York, on Wednesday, May 13th, Dr. Aron D. Aronson, aged eighty years. **Ashbaugh.**—In Guelph, Ontario, on Sunday, May 10th, Dr. J. A. Ashbaugh, of Windsor, aged forty-one years. **Blackistone.**—In River Springs, Md., on Tuesday, May 12th, Dr. R. P. Blackistone, aged ninety-one years. **Bogue.**—In Washington, D. C., on Sunday, May 10th, Dr. Almos P. Bogue, aged eighty-six years. **Bramlette.**—In Austin, Texas, on Saturday, May 9th, Dr. Felix B. Bramlette, aged twenty-nine years. **Burbeck.**—In Troy, N. Y., on Saturday, May 9th, Dr. Charles H. Burbeck, aged seventy-eight years. **Chrystie.**—In Rye, N. Y., on Tuesday, May 19th, Dr. Thomas Mackaness Ludlow Chrystie, aged seventy-three years. **Clapp.**—In Lakewood, N. J., on Sunday, May 17th, Dr. Lewis Hodges Clapp, aged thirty-three years. **Clark.**—In Andover, N. J., on Saturday, May 16th, Dr. Jeptha B. Clark, aged fifty-four years. **Clarke.**—In Bushnell, Ill., on Tuesday, May 12th, Dr. Albert Clark, aged ninety-one years. **Cleaves.**—In Cherokee, Ia., on Sunday, April 19th, Dr. R. L. Cleaves. **Curtiss.**—In Bristol, Conn., on Sunday, May 17th, Dr. William M. Curtiss, aged forty-five years. **Daniel.**—In Austin, Texas., on Thursday, May 14th, Dr. F. E. Daniel, aged seventy-five years. **Dresser.**—In Chicopee, Mass., on Saturday, May 16th, Dr. George Dresser, aged seventy-six years. **Feld.**—In Watertown, Wis., on Wednesday, May 13th, Dr. Carl R. Feld, aged fifty-four years. **Fredrickson.**—In Philadelphia, on Sunday, May 17th, Dr. Elam A. Fredrickson, aged thirty-five years. **Fruh.**—In Philadelphia, on Wednesday, May 13th, Dr. Carl D. S. Fruh, aged sixty-six years. **Gates.**—In Rome, Italy, on Friday, May 8th, Dr. Howard B. Gates, of Pasadena, Cal. **House.**—In Scottsville, Ky., on Friday, May 8th, Dr. J. B. House. **Housekeeper.**—In North East, Md., on Sunday, May 17th, Dr. P. B. Housekeeper aged sixty-eight years. **Hunt.**—In Utica, N. Y., on Sunday, May 17th, Dr. James G. Hunt, aged sixty-eight years. **Jones.**—In West Point, N. Y., on Saturday, May 16th, Dr. Abraham S. Jones, aged eighty-two years. **Lanouette.**—In Manchester, N. H., on Saturday, May 16th, Dr. Joseph E. A. Lanouette, aged sixty-four years. **McCaughrey.**—In Hoopeston, Ill., on Thursday, May 7th, Dr. T. C. McCaughrey, aged seventy-three years. **Neagle.**—In Seattle, Wash., on Friday, May 8th, Dr. James H. Neagle, aged seventy years. **Redon.**—In Seattle, Wash., on Monday, May 11th, Dr. L. H. Redon, aged thirty-seven years. **Rice.**—In Marion, Mass., on Tuesday, May 12th, Dr. Alger W. Rice, aged fifty-nine years. **Ryan.**—In Chicago, Ill., on Friday, May 15th, Dr. David A. Ryan, aged fifty-five years. **Sheldon.**—In Norwalk, Conn., on Friday, May 8th, Dr. A. Sheldon, aged seventy-six years. **Stoltz.**—In Louisville, Ky., on Saturday, May 16th, Dr. Michael Philip Stoltz, aged fifty-nine years. **Symmes.**—In Trenton, N. J., on Friday, May 8th, Dr. H. C. Symmes, aged fifty-nine years. **Thornton.**—In Culpeper, Va., on Wednesday, May 13th, Dr. Gustavus Brown Thornton, aged seventy-nine years. **Whitehouse.**—In Bay City, Mich., on Tuesday, May 12th, Dr. J. H. Whitehouse, aged ninety-two years. **Whitney.**—In San Jose, Cal., on Friday, May 8th, Dr. James B. Whitney, aged seventy-three years. **Woolley.**—In Brooklyn, N. Y., on Monday, May 18th, Dr. D. M. Woolley, aged sixty-three years. **Zahn.**—In Philadelphia, on Sunday, May 17th, Dr. William R. Zahn, aged forty-three years.

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Original Communications.

NEUROTIC, PSYCHASTHENIC, AND HYSTERICAL CHILDREN.*

BY J. P. CROZER GRIFFITH, M. D.,

Philadelphia,

Professor of Pediatrics, University of Pennsylvania.

I have chosen this topic because, although many of the evidences of nervous disturbance of some sort have been often seen by every physician of experience, the degree of frequency with which these do in reality occur in early life, and the large variety of the possible manifestations, are more or less overlooked. Further, the interrelationship of the morbid states mentioned in my title is a matter of interest. This is far from being clearly understood and, in fact, it seems beyond question that these disorders shade into each other to a certain extent. I hope to illustrate the characteristics of the conditions by a few case histories. In special works upon nervous diseases and psychiatry will be found many far more striking examples than these—which are merely instances that have come under my own observation as a pediatrist—cases such as any physician who sees much of children is likely to encounter more or less frequently. It will be impossible to attempt any reference to the extended and interesting medical literature upon the subject.

Intentionally any direct consideration of the so common habit-spasm will be omitted; as will that of the other tics, some of which clearly belong to the category of the psychasthenic state or of hysteria. To do otherwise would extend the discussion beyond reasonable limits. For a similar reason the subject of bad habits in infancy and childhood must be passed by.

I. NERVOUS CHILDREN.

Let us consider first the neurotic or neuropathic, or, as it is often expressed, the "nervous" child. The condition is nearly always inherited, one or both parents showing nervous manifestations. By this is not meant that every such child must necessarily continue to show nervous symptoms during its entire life. The underlying neurotic tendency may not be sufficiently great for this; but it is this tendency which determines that nervous symptoms shall arise under the influence of exciting causes which, in other children, would produce no such results. There is, naturally, in childhood an incomplete physiological development of the control of the cortical centres over reflex movements; a rapid growth of the intellect; and an interest in the outside world without experience or judgment to guide and control in these matters. There is also a very strong power of imitation seen, even in early infancy. These factors, acting in a nervously predisposed child, readily give rise to symptoms. In addition are faults in the training or surroundings. Infants are amused too constantly; exhibited to visitors; constant efforts are made to teach them to notice or talk or show mental progress in other respects. The father, on returning home in the late afternoon, has a romp with the baby, which results for it in undue excitement. For all infants this method of procedure is inadvisable, and for those with a nervous disposition most harmful. The older children are allowed to play too hard until thoroughly tired out, or are permitted or stimulated to do mental work at school far in excess of all reason. Their association, too, with nervous parents and relatives tends to increase the symptoms of the disease in themselves if they are of a neurotic nature. Finally is to be mentioned the powerful etiological influence of such factors as fright, shock, trauma of any sort, and that of some debilitating disease.

Symptoms may be seen even in infants; for instance, in those who cannot sleep in a room without a light; wake on the slightest noise; vomit if moved or disturbed in any way, although never vomiting during sleep; or vomit a food of a new taste. These infants show, too, an early precocity; an early development of fear, as of strangers; unusual excitability from slight causes. Older children are often delicately built; anemic; easily tired mentally and physically; suffer readily from digestive disturbances; and have capricious appetites. They are very emotional; easily excited; and there is sometimes an unusual action of the face during speech, with the production of grimaces. They worry readily without sufficient cause. They may be very imaginative; fighting or hunting wild animals, for instance, in their thoughts, and relating their experiences as though they were true. As they grow older, they may become sensitive on slight reproof or reproach; they are shy with strangers and even with associates. Their own increasing consciousness of the difference between themselves and other children makes them self repressed, reticent and silent, self conscious and brooding. Many of these nervous children become the subjects of nervous habits, such as persistent thumb sucking in childhood, thigh friction in infancy, pica, nose boring, or analogous conditions. In many cases of neurotic children habit-spasm is also seen. I give briefly a

*Address delivered before the New Jersey State Pediatric Society, March 10, 1914.

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few cases illustrative of some of the simpler forms of nervousness.

Case I. The first instance I may mention was in a girl, C. T., aged twenty-two months, who was brought to see me on account of constipation and great nervousness. The child was very bright and imitative; was always pulling at her hands or fingers; was easily excited; easily frightened; slept poorly; and cried out in her sleep. Treatment was first ordered for constipation, but although this symptom was relieved, a month later her sleeplessness and general nervousness had not improved. Under continued treatment she recovered completely, and when I last heard of her she was a thoroughly normal school girl.

Case II. This was in a still younger patient, Mcl., and well illustrates the great influence sometimes seen of slight nervous excitement upon the functions of the body during infancy. It was that of a girl baby in the first nine months of life. From the time of birth, feeding had been an extremely difficult problem, any form of diet given being vomited. In the course of the treatment it was noticed—and this is a common observation—that vomiting did not occur after the bottle, which was immediately followed by sleep. It was also seen that any little entertainment of the child sufficient to evoke a smile on her part, was likely to have vomiting produced immediately. The trained nurse who had been in charge was decidedly worried about the infant and was herself a nervous individual. She was replaced by one of those comfortable, motherly persons, whose presence seems often to instill peace into their little patients. Certainly it did in this case, and the child became notably better almost immediately.

The more I see of vomiting in infants, the more I am convinced that in many cases it is largely a nervous habit. In many instances the giving of a "pacifier" immediately after the bottle will set the mind at rest, and prevent vomiting. As a rule, the employment of any such article is to be discountenanced; but there are times in which in this way it does good.

Case III. Nervous vomiting may occur in older children as well. In a little boy, R., aged about four years, anything which displeased the child would be followed by vomiting. In fact, he seemed to have the ability to go into the corner of the room and vomit almost at will; and this apparently without suffering from nausea or other discomfort

Case IV. Here is another case of vomiting combined with frontal headache and occurring in a nervous girl, B., aged nine years. Correction of the eyes had given no relief. Vomiting would cease after the stomach was once emptied. Attacks of it were sometimes brought on by nervous excitement. Sometimes she had a nervous cough, and a tendency to habit-spasm. The child talked much and freely of her own symptoms, and was clearly of a neurotic disposition. This case illustrated well the influence of too free conversation about ailments before a child suffering with them. Avoidance of this in this girl's case, combined with general tonic treatment, massage and midday rest, made a great improvement in her condition.

Case V. In another boy, L., aged eight years, there had been occasional vomiting, fever, and asthmatic attacks with digestive disturbances. During the attacks of asthma he would become extremely nervous and sometimes almost delirious. He was disposed at all times to sleep badly, and to grind his teeth at night, and he fretted easily if crossed. An attack would be brought on by nervous excitement. The treatment prescribed consisted in altering the diet according to the demands which seemed to exist; keeping the bowels regulated; guarding him less carefully in other respects; allowing him to associate with other children; removing him from the influence of the parents, who were distinctly nervous people, and making him lead an out of door life. Later I heard that under this regime the child had been doing splendidly.

Case VI. Another child, B., a girl aged four and one half years, of nervous parentage, and herself of highly neurotic disposition, showed excitement when playing with other children so intense that vomiting and greatly disturbed digestion sometimes followed.

Case VII. This patient, a boy, D., aged ten years, suffered from cardiac irregularity of nervous origin, a condition of general nervousness, attacks of anger from slight causes accompanied by trembling, restless sleep, night terrors, and indigestion.

Case VIII. Still another patient, a boy, H., aged fourteen months, had attacks of screaming in which he became rigid, but was not unconscious. These could not be attributed to colic. The condition had developed after a severe debilitating illness with some meningeal symptoms. Recovery followed after about two months' treatment.

Case IX. Moderate nervousness was seen in a child, E., aged two and a half years, very active in mind and body, and with parents of high intellectual development, who was always troubled by great wakefulness at night, requiring from one to two hours to get to sleep and often waking later with crying. Improvement followed general tonic treatment, but relapse came on taking a journey, the many new sights increasing the mental activity.

Case X. In another case in a little girl, L., aged six years, the beginning of attendance at kindergarten was followed by dreaming, talking at night, and so much nervous excitement and fatigue during the day that the advisability of continuing the schooling at the time became very questionable. She developed later into a normal girl.

Case XI. In this interesting instance, the patient, D., a girl aged three and a half years, had always been very nervous, but became worse after a fright a year previously, and for a long time was afraid to sleep in her room. She was brought to me on account of restlessness at night and a tendency to cry in an uncontrollable and violent manner if anything which struck her unpleasantly was mentioned in her hearing. She had been calling out and talking wildly during her sleep at night as though dreaming, yet the condition was not characteristic of pavor nocturnus. She was very fond of listening to stories, and this may have had some causative bearing, although the child did not seem unduly imaginative. Word received a short time later stated that recovery had been complete.

II. PSYCHASTHENIA.

The condition of simple nervousness just described is separated by no very sharply marked boundary line from that of psychasthenia. The difference consists in the predominance of the psychic element to an excessive degree in the symptoms of the latter affection. Some of the cases of psychasthenia seem to approach also closely to insanity, others to hysteria, while some of the motor tics really belong to the category of psychasthenia, the movements being only a motor expression of an imperative idea. Although the tendency is an inherited one, an exciting cause is often required to produce the symptoms. Among such are mental shock, sleeplessness, or an exhausted condition of any sort. The patients may have normal intellectual power, or one above or below this. They are nervous, imaginative and impressionable. The symptoms appear oftenest soon after puberty, but may occur in later childhood and even earlier than this. One of the most important is that of *doubt*, and, closely associated with this, *phobias* of all sorts and over conscientiousness, which finally lead to hesitation in action and in reaching conclusions; obsessions, and various kinds of imperative ideas. This morbid psychic state induces lack of will power and of concentration; restlessness; repetition of acts for fear they may not have been properly performed; melancholic states from the consciousness of personal imperfection; hallucinations; fear of certain objects, places, and conditions; the fear of personal contamination, leading to frequently repeated washing of the hands, and the like; impulses to spring into the water or out of a high window; etc. Probably in the class of

psychasthenic disorders are to be placed some instances of the sudden violent attacks of rage in little children, followed in some cases by a suffocative condition.

The disease may advance still further and the obsessions and imperative ideas become so uncontrollable that criminal acts may be performed, such as theft or murder; or they may lead to self mutilation, or suicidal attempts. Truancy from school, or the running away from home, is in many instances a symptom of psychasthenia, as is sexual perversion of various sorts. In fact, some of the worst cases appear to be almost moral degenerates.

In the way of diagnosis, it is to be remembered that psychasthenia is not insanity, although it may appear to approach to it. In psychasthenia the patient recognizes that the ideas and the acts which follow are wrong, and not well founded, and hence are to be concealed. He feels only an inability to control them, hence the title "imperative idea." In a true insanity, on the other hand, the subject is unconscious of anything wrong in his logical processes or his concepts. Let me give you now from my own experience a few instances of psychasthenic states in children.

Case XII. The first was a condition of a psychic nature seen in a boy, McA., aged eleven and a half years. He was brought to see me on account of his excessive nervousness. Teasing by other boys at school produced crying to an unusual degree, and doubtless increased the teasing. On this account the teacher had sent him home from school with the word that he needed medical attention. The symptom had been one of rather recent date. A year previously he had become quite depressed, with the feeling that he was going to die immediately, and it was some time before this idea left him. He stammered somewhat if he got nervous. I regarded the condition as a temporary one brought on by the debility incident to the spring of the year, and to the winter's work at school, acting upon a child of a distinctly neurotic disposition.

Case XIII. Here is an instance in a little girl, B., aged seven and three quarter years. She had never been very robust, and four years previously became very restless, with jerking movements. This state gradually grew worse, with fretfulness and debility. Under treatment the condition disappeared, but had now returned. The most striking feature when I saw her was a tendency to worry and to cry a great deal without sufficient reason. She cried because she feared she would be late for school; she worried for fear she would not have her lessons learned. There was, in fact, a combination of doubt and fear in a mild degree which is characteristic of this disease. Combined with this was a nervous twitching about the mouth; indistinctness of speech; and difficulty in feeding herself; none of them of a degree sufficient to warrant the diagnosis of chorea, but rather that of slight habit-spasm. Under the exercise of firm control by the parents, and the removal of all excitement, recovery followed.

I may add some other instances which illustrate well the existence of fear as a prominent symptom.

Case XIV. This was in a girl, D., aged three and a quarter years, who never had been very strong, and who had a tendency to suffer from indigestion and from eczema. One night she awoke screaming and crying that things were crawling all over her. She could hardly be comforted, and when in her father's arms seemed to see similar objects on him. This, of course, had somewhat of the nature of pavor nocturnus, but differed in the existence of a hallucination combined with recognition of her surroundings in other respects. Another interesting feature, quite different from pavor nocturnus, was that ever since the attack, a period of three weeks, she had been in constant fear of being left alone. She would not stay on one floor of the house unless her mother was on the same floor. She would play with other children of the family out of doors, but at night would not sleep alone in her crib, even though her sisters were in the room with her. I gave instructions to insist upon her lying down in the middle of the day, as I felt she was overtired; to encourage her with regard to her fear, at the same time taking as little open notice of it as possible, and to allow her to sleep with some other child of the family unquestioned until the phobia was overcome. A letter received later said that the nervous symptoms disappeared in a week after her visit to me.

Case XV. Here is a curious instance of fear of a certain noise, occurring in an infant, I., aged twenty-three months. The child looked delicate and showed evidences of moderate rickets. She was brought to me on account of increasing nervousness; starting at any noise, but being especially disturbed when she heard the sound of a wagon in the street discharging coal into a neighboring cellar. It was for some reason this noise particularly which she dreaded. She often started from sleep, especially in the day time, in a condition of terror. Under tonic and sedative treatment, consisting chiefly of the administration of codliver oil and massage, the child improved; although it was fully three months or more before she lost her fear of the coal wagon sound. Even after this symptom had disappeared, she remained timid and shy, and a slight tendency to stammering developed.

Case XVI. The next is a case of a slightly different nature found in a little girl, B., aged six years. She had never been very robust, but was gradually improving. For some time she had manifested a certain "morbidness," with irritability when crossed, and an ill defined dread of something, shown especially in her fear to have her mother leave her at all; permitting this only after careful questioning of her as to when return might be expected. The mother thought that the degree of emotional affectionateness displayed by the child for herself, and the dependence upon her, were entirely abnormal. The child was disposed to question the affection of others for herself; to be introspective; and to imagine readily that she was ill. Corporally, she seemed very well and was active, but tired easily. Any deterioration of health, however, made her nervous symptoms worse; for instance, after a recent attack of mumps. I insisted on abundant rest during the day in a recumbent position, although allowing her to be entertained by playing with toys or by being read to, if she did not sleep. I told the mother to fill her mind with other thoughts, and to explain the causelessness of her fears, without, however, deriding them, or dwelling upon them to any great extent. Her food was to be nourishing, and she was to have a cool morning sponge. In two weeks she had improved greatly in her nervous symptoms and had gained two pounds in weight.

I give briefly two other cases of a somewhat morbid introspective psychic disturbance.

Case XVII. The first was in a boy, A., aged fourteen years, who had been greatly shocked by a shooting accident occurring a short time before, in which one of his schoolmates had been killed in his presence. Since then he had not seemed psychically the same. He had become reticent, and his former open and affectionate character seemed to have changed completely. He complained merely of being dazed; that is to say he was not able to concentrate his mind well upon his studies, and had fallen behind in them. The day before I saw him he was in bed, and would not get up, although he could assign no reason. He seemed probably to be worried about his mental state. I insisted on the necessity of an outdoor life, of not urging his studies, and perhaps of withdrawing him temporarily from school and sending him to the country. He was to be encouraged also as to the outcome of his own condition. I may say that he made an entire recovery soon.

Case XVIII. The other patient was a girl, K., aged ten years, who started often in her sleep, was nervous, and said that going to school gave her a sick feeling in the stomach. This was evidently some sort of apprehension. She sometimes showed, according to the mother, a tendency to morbid self reproach for not being good, etc. There was also a very decided nervous restlessness and occasionally headache. I advised systematic outdoor exercise, and an entire absence of commenting upon her thoughts and doings. I ordered, too, that she should soon reenter school in order to take her thoughts from herself. It was not long before she was much better and was sleeping quietly.

Finally, I give, in brief, three instances of the excessive, wild outbursts of rage, which are sometimes the chief manifestation of the disordered psychic state.

Case XIX. The youngest was a girl, J., aged two years and eleven months. She had been extremely nervous and sometimes almost hysterical for a year following an attack of colitis, but had gradually improved, until two weeks previously when the nervous trouble had returned after a gastric disturbance. Several times in the day the child would become excessively angry on extremely slight provocation, throw herself upon the floor, and in general behave in such a shocking manner that punishment was sometimes required, which occasionally seemed to do some good.

Case XX. The second patient was a girl, G. H., aged three and a quarter years, who looked well and was active, but who, for about three weeks, attended by evidences of indigestion and poor appetite, had had restless sleep, poor circulation, and several times daily violent attacks of rage, in which, without sufficient cause, there was uncontrollable crying. Punishment and persuasion had alike had no effect. The child was evidently beyond self help, and sedative drugs were given to her, by which she was decidedly benefited. At the same time care was taken to remove her indigestion, and to improve her general strength. Within a month she had improved greatly.

Case XXI. The third child was a girl, D. S., aged five years, who suffered from ungovernable outbursts of passion, coming without cause, except that going to dancing school, taking a trip to the city, or any other excitement appeared to bring them on. The attack would last for an hour or more. The administration of bromides made her sleepy, but did not do much else. Later she improved greatly after the removal of adenoid growths from which she was suffering.

III. HYSTERIA.

The boundary lines of hysteria of any age are very vague. As regards children, some writers hold that the disease in infancy is an impossibility from the nature of the definition. Others, giving it a wider range, maintain that it occurs. My own belief is that certain manifestations of hysteria are undoubtedly seen in infancy, but that this is unusual. In childhood, hysteria is not common, and there is no difference in the susceptibility of the sexes until puberty is approached, when the disorder becomes more frequent, and is seen oftener in girls. No very exact definition seems possible. We can only speak of hysteria as a psychic neurosis in which there is great emotional excitability; an exalted egoism; a desire to attract attention; defective will power; and imperative and perverted ideas often produced by suggestion or autosuggestion. As a result there are a great variety of symptoms, apparently of corporeal affections, but in reality simulative and psychic in origin. Not all these characteristics of hysteria are seen in any one case, and this is especially true of early life.

The symptoms are so numerous that it is customary to divide them into classes, viz., sensory, motor, psychic, and those connected with the special senses, or with the functions of the internal organs. In early life the disease is oftener monosymptomatic, or, at least, only one symptom is especially manifest, and the so called hysterical stigmata are often absent.

Sensory symptoms are among the most common in children; in this class being the hysterical headache or pain in other regions, which is most apt to develop at a time when it will be of advantage to the child. Sometimes there is widespread hyperesthesia, and very commonly the sensory disturbance consists of painful involvement of different regions, especially the joints.

Motor symptoms are of great variety. The true hysterical convulsion is to be mentioned here, either fully fledged, or in a modified form. This is seen usually only in older children, and far less commonly than in adult life. There is undoubtedly, too, a hysterical chorea in children, or there may be tonic or clonic spasms limited to different parts of the body. Paralysis may occur with or without contractures, and of very varied distribution. This may attend the painful joints mentioned, or exist independently of these. Astasia-abasia is one of the common forms of hysterical paralysis in children, the patient being able to make any ordinary movements with the limbs, and yet unable to stand or walk.

Psychic symptoms are represented by excessive emotional excitability; easy laughing and crying without cause; disturbed sleep; somnambulism; capriciousness of disposition; stuporous conditions; delirious states; and hallucinations. There is in hysterical children an extreme power of imagination, an egoism, and a remarkable tendency to deception without reason.

In the domain of the *special senses* are photophobia, blepharospasm; asthenopia; hysterical blindness and hysterical deafness. None of these except the last, is often seen in early life.

The symptoms connected with other organs are most varied. Those associated with the digestive apparatus are, in my experience, the most common in early life. Here we have hysterical dysphagia; gastralgia; persistent vomiting; obstinate loss of appetite of a serious nature (anorexia nervosa); long continued diarrhea; incontinence of feces; and many others. Frequent, too, are respiratory manifestations, such as hysterical cough, attacks of dyspnea, or rapid respiration. It is to be noted that hysterical cough or hysterical vomiting may often be traced to an autosuggestion given by some previous cough or vomiting, which actually depended at the time upon organic disturbance. In like manner, vomiting or anorexia may be due to the thought inspired by the taste of food which had previously been displeasing to the child. Of genitourinary manifestations, principally are to be mentioned spasmodic retention of urine, perhaps dependent upon a fear of smarting which had once existed; frequent urination; and certainly some cases of enuresis. That some patients with the latter disease are amenable to treatment by suggestion is sufficient proof of the nature of the disorder in these individuals at least.

The diagnosis of hysteria is difficult in many instances. Many of the manifestations mentioned in simple nervousness and in psychasthenia respectively, could with equal propriety be included under hysteria. This is a matter of importance only from the point of view of nomenclature, since the conditions are so closely allied in any event, and are all neuroses or psychoneuroses. It is more important to distinguish hysterical symptoms from the organic diseases which they simulate. This is often made difficult by the failure of the physician to think of the possibility of hysteria in early life.

Even with this before us, however, the diagnosis is still far from being easy. I cannot enter into it extensively, but may mention a few points which may help us.

The hysterical convulsion is distinguished from that of epilepsy by the absence of biting of the tongue, of injuries done by falling, of real unconsciousness, of relaxation of the sphincters, and of terminal sleep. The character of the convulsive movements, too, seems to be more intentional. Hysterical paralyses, contractures and pain disappear during sleep or sometimes on diverting the mind of the child. There is no atrophy of any moment, and the tendon reflexes are present in cases where they would be absent if the disease was organic in nature. It is also often impossible to account for a curious and irregular distribution of paralysis or of pain on any basis except a hysterical one. No lesion would perhaps produce just such a condition. Hysterical headache may disappear when the usefulness of a headache passes. The vomiting of hysteria is frequently only partial, and often occurs with an ease and apparent intention which are very suggestive. Hysterical anorexia or dysphagia may be traceable to the earlier administration of food which was distasteful, or to the forced giving of medicine or food, the psychic impression which remained preventing eating later. Now let me give you in conclusion a few illustrative cases of hysterical manifestations in children.

Case XXII. The first case I would mention is one I have reported previously, and I will repeat the details only in brief. It was an instance of typical anorexia nervosa in a male child, G., in whom the symptoms first appeared at nine months of age. At this time he had an attack of ileocolitis, and medicine was forced upon him from a glass and a spoon. He was breast fed, except that he had already learned to eat a crust of bread held in his hand. From the time of recovery from the illness he refused all food except the breast and the bread, having apparently a fear of anything else through the psychic impression which he had received. Repeated efforts were made to wean him, but unsuccessfully, and I saw him at the age of twenty months when weaning was imperative, as the maternal secretion was failing. I advised the urging of food upon him in order to accustom him to its taste; but all food, as well as water, was declined, in spite of the hunger and the loss of weight which existed. Finally after four weeks of faithful effort, gavage was commenced, and this was persisted with three times a day for six months; and only by the age of two and a quarter years, in spite of the repeated efforts to feed in the ordinary way, aided, too, by bribes and threats, did the child learn to take food normally. Even at the age of six or seven years he had to be persuaded to eat, and if left to himself would take little, and he had a strong disinclination to taste any food which was new to him. His method of thought and the nervous character of the trouble were shown by his remark after learning to take any new article of diet, "Papa, I would not taste it because I never ate it before."

Instances of hysterical anorexia as marked as this are very uncommon in infancy; but I have seen others at this time of life, all of which, although less severe, are certainly to be placed in this category.

Case XXIII. A very interesting one is the following in which the anorexia seemed to depend, to a degree at least, upon the perverted psychic state, with an unconscious desire to awaken sympathy and attract attention. The infant, a girl, E. M., aged eighteen months, seemed to have no appetite at all. There was no evidence of indigestion. The opposition to food was so great that it seemed to the mother often a manifestation of "naughtiness." Persuasions, threats, and punishments of any sort were alike without influence. The giving of food was a matter of force, attended by great excitement of all concerned; there being crying and resistence on the part of the child, and evidently shown anxiety on the part of the parents. When food was forced upon her, the child would hold it in her mouth for as long as two hours, according to the statement of the mother, rather than swallow it. In spite of this, there was apparently enough nourishment taken, as the weight was slowly increasing. The parents were insistent that something be done, and were evidently in a much excited state. I advised placing the food before the child at the regular times, but ordered that no effort at feeding should be made; no persuasions used, and no anxiety shown, but rather an apparent indifference; and then at the expiration of half an hour the plate of food was to be removed without comment. In addition, an alkaline bitter tonic was to be given before meals, and a gentle purgative every four or five days. The weight was to be taken frequently in order that no decided loss should be permitted. Two or three days later the mother reported that she had tried the plan suggested. The child seemed quite bewildered and rather hurt that no notice was taken of her; but finally, after about forty-five minutes, she began to eat of her own accord and finished her dinner. An acute illness occurring soon afterward stopped later training for the time being.

Here are two more cases in which, with other hysterical manifestations, there were those connected with the digestive apparatus.

Case XXIV. The first case was in a boy, McM., aged eight years, who was well nourished but undersized, and certainly somewhat backward mentally; although this may have been attributable to the presence of adenoids. A few months before I saw him, he fell from the boardwalk at Atlantic City, and his parents thought he had not had "as much life" in him since. Very probably a distinct psychic impression was made on him by the accident. About a month before his visit to me, he had choked over a piece of bread and butter. He put his fingers into his throat and brought the food up; but upon the next day he had trouble in swallowing a sandwich which had been given to him, and ever since then he could swallow solid food only with difficulty. It would, however, go down with the aid of water and after much chewing. It seemed to me that there was more fear than actual obstruction active in the case; for the boy would often remove the food from his mouth and throw it away, if not watched; but if compelled to swallow, he succeeded in doing so, although with the difficulty mentioned. For a week he had had fancies of various sorts, such as that of hearing strange persons tramping about his room at night; and questioning of him made it appear that this was an actual hallucination. For a few days he had had a peculiar cough, suggesting very strongly obstruction in the esophagus. I referred him to a surgical colleague who was convinced from the dysphagia and the cough that there was undoubtedly an obstruction in, or pressure upon the esophagus. Careful physical examination of the chest, however, which I made, failed to show any evidence of abscess, tumor, or glandular enlargement. A radiograph was taken with entirely negative result, and under anesthesia, bougies of all sizes as well as a probang were passed without the slightest difficulty. There seemed to be no doubt that the dysphagia was purely hysterical, and the other psychic disturbances present bore out this opinion. Instruction was given to the father to insist that the child swallow on pain of having the instruments used again. Some months later I heard from his physician that the boy had been sent to a boarding school, and was reported to be behaving just like other boys.

Case XXV. The second instance of hysterical manifestations of a digestive sort, of mild degree, was in a girl McA., aged three and a quarter years, who had formerly been subject to great restlessness at night, requiring that she be rocked in her mother's lap. Her chief trouble was little appetite and an unwillingness or inability to take any solid food. Even a crumb in the mouth was productive of coughing which would continue until she vomited. In disposition the child was obstinate and self willed, and if opposed would scream violently until she had her way.

The next two cases illustrate the combination of hysterical symptoms affecting both the digestive and the respiratory systems.

Case XXVI. This was in a girl, N., aged five years, who, at periods when she was at her worst, would choke when swallowing her food, especially if it was anything which she did not like. At other times she had to swallow slowly, even water. Her appetite was always very poor, and the child would scarcely eat at all unless urged. She was of nervous ancestry, and herself a very nervous child. Respiratory hysterical symptoms were present also, consisting of a peculiar drawing in of the breath, clearly a form of hysterical dyspnea. There was a tendency to frontal headache; and when excited there occurred violent shaking of the hands—a motor hysterical manifestation. I advised guarding against overexcitement and fatigue; giving rest recumbent in the middle of the day; the entire ignoring of the difficulty in swallowing; refraining from urging food unless the health was failing; and allowing her to play freely with other children of her age. A report from her physician, some two years later, stated that the child, although still nervous, had lost all her hysterical manifestations.

Case XXVII. The second instance of this combination of respiratory and digestive hysterical symptoms was in a mulatto girl, M. D., aged six years. She was rather delicately built and with a distinctly emotional type of face. For some time she had been in the habit of vomiting perhaps several times during a meal. She had had also a loose rattling cough coming in paroxysms several times a day, in which she would expectorate large quantities of watery and frothy material. She had received considerable medical attention in different hospitals and dispensaries, but was said not to have improved. By the second day after her admission to the children's ward of the University Hospital vomiting ceased entirely, and by the end of a week coughing, too, had disappeared. The treatment was practically negative, except that very shortly after admission she was given a test meal, which was then removed by the stomach tube. Very probably the mental impression produced by this was quite decided. Further than this no notice was taken of her, and she was allowed to run about and play with the other children. There seems no way to explain the course of this disease, and the rapid recovery, except on a hysterical basis; and the general characteristics of the child and her behavior in the hospital were such as to make this seem very probable.

Case XXVIII. Here is a curious instance of disturbance, apparently hysterical, affecting the urinary apparatus. The boy, F., aged three years and two months, would pass hours without urinating, although fretful and apparently in discomfort. He objected to being put on his chair; but when this was insisted upon he would frequently urinate without any evidence of difficulty or pain, and with relief of the fretfulness. When taken up at ten o'clock at night he passed urine without trouble or any remonstrance. The condition seemed to depend upon some obscure process of reasoning, perhaps some autosuggestion from a period when urination had actually caused smarting. Possibly the case could with good reason be considered one of psychasthenia with the element of fear; since the boy suffered from a general fear of being hurt, and of many harmless objects; such as rain or snow on the window panes, lest it come into the room. A letter received shortly afterward stated that the boy was beginning to improve, owing partly to the installing of a nurse who understood him better. There was still the difficulty in urination, although improving; and the child continued to be frightened by storms and anything unusual, but was more open to quiet reasoning.

Turning now to hysterical manifestations of another class, the following is a very interesting instance of sensory disturbance.

Case XXIX. This was in a boy, McG., aged eleven years, well developed and intelligent. About Christmas time he had grippe, which was followed by rheumatism of all four extremities, from which he recovered completely. Shortly after this his father was attacked by a widespread rheumatic affection which confined him to bed. Then the boy, about three weeks after his own recovery, and while his father was still ill, had a severe attack of what was supposed to be a reappearance of rheumatism; and at the time of my visit at the end of the following February he could not move hand or foot, and any passive movement caused great suffering. There was said to have been moderate fever at times, but no systematic record had been kept. Examination showed the feet and hands suggesting somewhat a rheumatoid arthritis, but with no swelling or redness discoverable. The slightest touch on the thigh caused an outcry of pain; yet the usual expression of the face was that of comfort, nor did the child look as ill as would naturally have been expected. The diagnosis here was at first uncertain. Many matters pointed to rheumatism, while others indicated hysteria. On a later occasion the physician in charge of the case ran a knife blade near the thigh as though about to scratch it, and the outcry of the boy was the same as though he had been touched. Observation also showed that while asleep the boy could and did move his arms and legs freely in any direction. The condition in fact appeared to be undoubtedly now one of hysteria, developed by autosuggestion after a genuine attack of rheumatism in himself, and from seeing that in his father. Word received from his physician about a year later stated that the boy did not improve for some time, and that he contracted ptosis and for two weeks could not open his eyes. Then under massage the condition of his arms improved, and finally the child recovered entirely and was attending school at the time of the report.

As I have already stated, some of the severer cases of habit-spasm, or of convulsive tic, are certainly to be considered as hysterical in nature.

Case XXX. Here, for instance, is an illustration in point showing a motor manifestation of hysteria, and one which at least suggested habit-spasm. The boy, S., aged two and a half years, had for some time suffered from poor sleep and a curious nervous condition, although well in other respects. Many times in the day he would stop in the course of walking, play, or other occupation, extend his arms forward or sidewise in a horizontal direction, close and unclose his fingers, and sometimes make grimaces, accompanied by irregular jerking movements of the head. The psychic element in the case was, however, too evident to permit of it being regarded as an ordinary case of habit-spasm. The movements seemed to give a certain sense of gratification or a relief from nervousness, and efforts to stop him in the middle of the process were distinctly resented. The symptoms were increased in severity when he was fatigued. Diverting him, as by having him look in shop windows and the like, prevented the appearance of the movements for the time. The administration of bromides in full doses had made him sleep better, but had had no other effect. The avoidance of excitement and fatigue was advised, with a certain degree of restraint and remonstrance, together with some system of rewards; but a careful avoidance of anything which would impress the condition too much upon his mind. A letter from his physician about two years later stated that the movements had continued unimproved for some time, but that after a visit to Atlantic City he had improved very greatly, and, although still a nervous child, seldom showed any abnormal movements.

Case XXXI. Another child, a girl, B., aged four and a half years, exhibited a somewhat similar condition. She had always been very nervous and often had poor appetite, and for a week had been walking with a curious limp. This, naturally, attracted attention and remark, and was a cause of much anxiety to the mother, shown distinctly before the child; and these circumstances made the condition worse and more firmly fixed in the girl's mind. In walking there was sometimes a stiff dragging of the leg, sometimes a quick drawing up, strongly suggesting the action of a horse with stringhalt. The movement was entirely unlike any which a paralysis or a diseased joint would produce; and, in fact, an examination showed absolutely nothing wrong of this sort. The girl was not seen again for four months; at which time, as the character of the walking was unchanged, she was referred to an orthopedic surgeon, who confirmed my diagnosis that the condition was almost surely a hysterical one. I then prescribed massage and systematic training in walking. At the same time instructions were given that absolutely no anxiety was to be shown by the parents. In a month more all symptoms had nearly disappeared.

Case XXXII. The following case illustrates the combination of motor and sensory symptoms. It occurred in a boy, K., aged eleven years, who four weeks before seen, had suddenly lost all power in his legs and had fallen to the floor. He suffered from pain, tenderness, and "no sensation" in his lower limbs. In two weeks he recovered power

slightly, but was still unable to walk. A similar, although shorter attack had occurred four months previously. Examination showed his legs of normal development, knee jerks not materially altered, no ankle clonus. The child seemed bright, but winced upon the slightest touch, and showed hyperesthesia everywhere. The feet were in the equinovarus position, and there was almost no power of movement in the lower limbs. When supported under his arms, his legs were unable to sustain his weight in the slightest. Three days after admission to the hospital he suddenly regained complete power in his legs and all hyperesthesia disappeared.

The next two cases are by way of illustration of purely psychic hysterical symptoms.

CASE XXXIII. The first was in a boy, T., aged five years, in whom, from the age of about three years, there had been brief paroxysms of laughing without cause. This was at first of only occasional occurrence, but the attacks gradually increased in frequency, and sometimes numbered from five to six daily. Consciousness was never lost, but the child might slip to the ground, although he never fell. He seemed able to control them to a certain extent, and if threatened with affusion of cold water would run away, and the attack would cease. Recently they had not been so numerous since attention had been paid to the state of the digestion and of the bowels. A letter received a year later stated that there had been a remarkable improvement within two weeks after his visit to me.

CASE XXXIV. The second case occurred in a girl, A. L., aged five and a half years, who had suffered for over six months from attacks of vertigo, staggering, and unconsciousness. At first these happened about once a week, but finally were seen every day. Examination in the hospital showed the child to be very excitable and nervous. While under observation there she had only two attacks, in one of which she was found apparently unconscious on the floor, while in the other she fell to the floor, rolled about, and seemed to be in a stuporous state. The condition appeared to be evidently hysterical. She was removed from the hospital later in good general condition.

Finally, I wish to detail a few illustrative instances of the combination of motor and psychic symptoms, some of these being indeed truly convulsive in type.

CASE XXXV. The first was a girl, C., aged about nine years. Very often, both by day and night, she passed into a seemingly semiconscious condition, partially convulsive, the exact nature of which it was impossible to learn; but the state was one which caused the mother to sit anxiously by the child's bed, watching and afraid to leave her. When not in an attack the child seemed entirely well. When brought to see me the mother talked freely before her of the symptoms exhibited, and of her own anxiety regarding them. The girl had a very distinctly emotional expression of face, and was clearly of a highly neurotic type. Realizing that the hysterical state was dependent chiefly on her surroundings, I persuaded the mother to enter her in the Children's Hospital, where she could mingle with other children freely. The nurses were instructed to watch her carefully, but unobtrusively, and to take no outward notice of any symptoms—but not a single attack ever occurred again.

CASE XXXVI. The second case was in a boy, X, aged eleven or twelve years, who seemed at first in the history given to be a typical instance of procursive epilepsy. After a convulsive seizure he would run madly for a short distance, performing very varied and apparently violent acts. Careful questioning showed, however, that there was never any real unconsciousness, and that the child after an attack would ask his mother if he had done this or that, mentioning what he had actually done, and evidently taking an undue interest in it. The case was after this lost sight of, but the condition was certainly, I think, a purely hysterical one.

CASE XXXVII. The third case was a puzzling one in some respects. It occurred in a boy, L., aged twelve years. He had been studying hard at school, and had worried about his lessons, making it necessary for his parents at times to take his books away from him. He had become very sensitive, with a tendency to avoid his school companions. Then, one and a half months before I saw him, he had an attack of vertigo while in the street, and fell apparently unconscious. This was followed later by attacks of delirium, in which he would start to sing while in bed, and the condition then gave way to epileptiform convulsions, of which he had five or six a day. The boy said he felt something like smoke coming up in his throat before an attack. This, naturally, suggested an aura, but could equally well have been globus hystericus. It was noteworthy that in none of his attacks had he bitten his tongue or hurt himself in falling, and that he had no profound sleep after the paroxysm. He was entered in the Children's Hospital, and on the first two days had several paroxysms in which he had atypical convulsive movements, and would bite at objects near him. Later he could describe his feelings and symptoms. He was then given compound tincture of cardamom as a placebo, and told that he would have no more attacks—and he did not.

TREATMENT

The treatment of any of these nervous conditions under consideration is a subject of great interest and of even greater difficulty, since every case must be handled individually, and there can be only general rules to guide us.

Preventive treatment is to be first considered. In connection with this subject must necessarily be elaborated to some extent what has already been said in discussing etiology. From earliest infancy there should be caution against overexcitement and mental overstimulation of any sort. This applies to all infants, since no one can tell what nervous manifestations may develop later in young infants apparently entirely healthy; but it applies with especial force to those with nervous ancestry or who have themselves shown early neurotic manifestations. Abundant undisturbed sleep is of great importance. The presence in the house of a number of noisy older children is often a detriment in this respect; while many infants are kept up much too late in the day in order that the father may see them; and still others, especially the first born of doting parents, are even awakened from sleep and perhaps brought downstairs to be exhibited to admiring friends. The baby suffers, too, from the constant desire of the parents and other relatives to have him evolve mentally in a manner superior to the babies of their acquaintances. This is all wrong. The infant should oftener be retarded than stimulated in his mental development.

As childhood is attained, the same precautions must be taken not to strain the intellectual and emotional powers too greatly. Stories which are exciting should not be told to the child, and especially those containing elements which may be the cause of the development of fear. Many of the old time fairy and folk stories are very objectionable from this point of view. The beginning of school life requires careful supervision. Naturally the child must be taught; but the teaching should, in my opinion, always be regarded as secondary to the maintaining of a healthy condition of the mind and body. The study hours are far too long for many children. In the case of those who learn quickly this does not apply, so far as the actual mental work is concerned; although the hours spent in school often take away too much from the time which should be occupied in play in the open air. With those, however, who find study somewhat of a burden, especially if they are of a

neurotic disposition, too much school work is often the cause of the development of nervous symptoms of some sort.

A very important matter is the avoidance of too constant association of infants or children with excitable or nervous relatives, especially parents or older brothers or sisters. The entire household life is too strenuous for them; while the observation by the child of uncontrolled nervous or other exhibitions on the part of the parents is distinctly harmful. On the other hand, nothing is more productive of nervous peculiarities than the too careful rearing of an only child in association only with older persons. Often nothing is better for a "peculiar" child than having its rough corners polished off by mingling with playmates. The ruthless criticisms of these will often undo to some extent the evil influence of the too affectionate and considerate parents.

All that has just been said applies with increased force where infants or children have already decided nervous manifestations. In addition, other measures must be taken to bring about a cure. In the first place among these, the general health of the patient must be carefully studied and treatment commenced if necessary—as it nearly always is. Anemia and debility are to be corrected, and especial attention is to be given to the digestive apparatus. In my own experience the neurotic and psychopathic states are most frequently associated with some digestive disturbance, whether this is the cause or the accompaniment; and the successful treatment of this condition will often be followed by amelioration in, or a disapearance of, the nervous manifestations. This was true in a number of the cases I have detailed. Other possible causes for the disturbance of the nervous system must be carefully sought for, prominent among these being the constant association with other nervous members of the household. It is here that the mingling with healthy children as playmates, after infancy is passed, is especially to be insisted upon. There are cases, however, where shyness, timidity, or morbidness render the teasing of other children harmful, and the patient must then be entertained in other ways. This is a matter to be determined for the individual case. Complete change of scene and climate, with separation from the family, under the care of a specially trained nurse, and under medical supervision, will often work wonders in nervous children; and in the severer cases, as in psychasthenia and hysteria, this is often one of the best means of cure. In many such cases among the poorer classes, the placing of a child in a hospital is frequently the best possible procedure, as some of my cases illustrate.

One of the things most harmful for nervous children is the evident and openly shown anxiety of parents. There can scarcely be any more deleterious suggestive influence for evil than the so common practice of mothers of detailing to the physician or to friends all of the child's peculiarities in the presence of the child itself. I have repeatedly sent such children out of the room in order that they should not hear the account given by the mother. Often the question of attendance at school arises. This, too, is an individual matter. Over against the mental and bodily fatigue of school life is to be placed the fact that absence from school may draw still more the attention of the child to its condition, at the same time that it takes away occupation, inasmuch as there are often no play companions to be had during school hours.

I may reiterate the chief principles which constitute the basis of all treatment especially for the severer cases, such as the psychasthenic and hysterical states. While the general health is being improved and all visible causes removed, the direct object of all other measures is to make the child *forget*. This is slow of action, but satisfactory in result. Absolutely no anxiety of any sort must be shown by the parents or others with regard to any of the hysterical or other manifestations, or remarks of any sort made regarding them. Seeing the parents indifferent, the child soon learns that the condition is a harmless one. It learns, too, that it can no longer enjoy the pleasure of sympathy or be the occupant of the centre of the stage. Separation from anxious parents is almost a necessity in such cases, since the majority of parents cannot sufficiently control the exhibition of their feelings. The nurse in charge must always be kind, and must obtain the affection and full confidence of the child; but there must always be firmness and an apparent indifference to the symptoms. This applies equally well to the physician. The symptoms, if noticed at all, are to be made light of, as something which is sure to pass away soon, and encouragement of every sort must be given. Suggestive treatment may be employed in the form of insisting that the patient is better. In fact suggestion in some form is of the greatest value, by the employment of mechanical or other devices which seem strange or wonderful to the patient; combining this with the assurance that recovery will surely follow. Usually it is better not to express the belief that the malady will quickly disappear, but only little by little. It is also important that any treatment employed be directed against some other region of the body than that showing symptoms, otherwise the mind of the child will continue to be directed to these.

Occasionally a different procedure may be followed, and the method of shock or surprise employed. In this, for instance, the hysterically paralyzed child is made to walk by the sudden forcible repeated command to get out of bed, or by the unexpected call to look at something out of the window or elsewhere; or the application of a strong faradic or franklinic current which will produce pain, or a dash of cold water, or other unpleasant procedure, may in the same way cause a hysterical symptom to disappear suddenly or in a short time. No such method is to be employed as a punishment, but as a means of cure. Punishment does no good in most cases of this kind, and only destroys the confidence and affection of the child, which is so necessary in order to obtain good results. In general, however, the method of gradual diversion of the child's mind from its symptoms by a systematic ignoring of these offers the best hope of cure.

I have said nothing regarding the administration of drugs for any of the nervous diseases described. They occupy but a very minor position and are to

be employed only to relieve certain urgent symptoms. This does not apply to the remedies needed to improve the general health in any particular.

It is always to be remembered that in all of these diseases there is the underlying nervous disposition which cannot be entirely removed. Consequently, when apparent recovery has taken place, care must still be observed that no causes are allowed to operate which can be the occasion for a return of the nervous manifestations. Nevertheless, it is encouraging to observe that with care, many nervous children seem to outgrow the neurotic tendency entirely.

THE ABORTIVE TREATMENT OF SYPHILIS,

Therapia Sterilisans Magna,

By Boleslaw Lapowski, M. D.,
New York.

In March, 1899, fifteen years ago, in discussing the treatment of syphilis before the members of the genitourinary section of the New York Academy of Medicine (New York Medical Journal, p. 560, 1899), I opened my remarks with the following statement:

> All syphilographers agree that mercury is the supreme remedy in the treatment of syphilis. But, *if* the questions are brought to the forum of medical men—*when* to begin the administration of mercury? and how long to continue the treatment?—the agreement ceases and the answers are so confusing, the arguments so contrary, that thinking physicians naturally look to the physicians' physician, the laboratory savant—"to be," as Lord Bacon says, "the light to open their eyes to see their ways through the labyrinth and find the clues that shall conduct them to the truth."
>
> Our savant, then, may discover the syphilitic virus, and, should he do so, does this presuppose or even promise, that the remedy shall be simultaneously discovered? And when this last result is obtained will the remedy "Ring out the old and ring in the new" treatment. Meanwhile what are we to do?

And the fifteen years, which passed since those remarks were made, have been crowded with important and memorable events in the history of syphilis. Since then, the spirochete has been discovered and proclaimed as the specific agent of the disease, a remedy to kill and destroy the spirochete invented, a means to detect the concealed existence of the specific virus in the organism and to verify the parasiticide action of the remedy given, and a way provided how to prove and confirm by experimental investigations—the final arbiter of our medical controversies—all these splendid achievements of the laboratory savant. During these enthusiastic years in the domain of syphilis we trusted that at last the enemy was tracked to his lair and that by one blow we should destroy it. We witnessed the birth of Therapia sterilisans magna, devoutly wishing its consummation. But, *in magnis voluisse satis est.*

If now, in the light of all those discoveries, we again ask the same question, meanwhile what are we to do? The answer will be: Can we, with all the late achievements at our disposal, give a satisfactory reply to the two questions: When to begin and how long to continue the treatment? The solution of the two questions is of the most vital importance, as the right answer may lead to great benefits to patient and community, while the wrong reply is laden with dangers for the welfare of both patient and community. But scientific research at present enables us only to pose clearly the problem, but does not offer a complete solution, and in spite of that, the laboratory investigators profess to have solved the riddle of syphilis and they draw from their experiments and discoveries the elements of a system of treatment. The thinking clinician, in order to arrive at a correct solution of these questions, will rather exercise his own judgment and call upon his treasured up clinical facts to control and weigh the laboratory findings, than be led blindly by their dicta.

When to begin? Abortive treatment has been tried in the past by excision of the primary manifestations and by the simultaneous administration of mercury. The investigators explained the unsatisfactory and sometimes even objectionable results of that method by the *too late* interference and by their inability to determine whether the action of the mercury administered was sufficient completely to destroy the virulent agent and prevent its renewed activity, which, as clinical experience has shown, was followed by severer manifestations.

At present these drawbacks can be eliminated. The diagnosis can be established very early, even before the appearance of any external primary lesion, by determining the presence of Spirochæta pallida. A remedy, salvarsan, with or without mercury, is at our disposal, which directly kills and destroys the virulent agent, and with the aid of the Wassermann reaction we can determine whether the spirochete, even invisible, is still active, and the success of such procedure can be experimentally proved by the occurrence of reinfection in patients treated with this method. Consequently this method is urged upon all physicians with such persistency and assurance, that the action of the physician who does not follow this method is branded as a *Kunstfehler*[1] and the physician himself is considered not "in his right senses."[2] While the last accusation can be disregarded owing to the source it emanates from, the first, for the same reason, is to be plead against with all earnestness.

There are many points to be observed in carrying out the abortive treatment. The followers of the method do not agree in all points. But in one point they all agree: As soon as the diagnosis of syphilis is established by the presence of the spirochete—and it is the duty of the physician to look for the spirochete as early after exposure as possible—to begin treatment with appropriate doses of salvarsan and high doses of a proper preparation of mercury administered at proper intervals, to control the efficacy of the remedies by seroreaction and after a certain course (consisting of from two to three doses of 606 and twelve to fifteen inunctions of calomel or oleum cinereum, with or without rubbings) to stop treatment and to watch the patient under the con-

[1] Neisser, London Congress, [illegible]
[2] Nobl, [illegible]

trol of the Wassermann reaction. If no manifestations appear and the seroreaction is always negative, some do not treat the patient any more and pronounce him cured, others repeat the course in a milder form, always under the control of the reaction, and then, if the seroreaction is negative, pronounce him cured. The maximum time of observation for such a verdict is from one and one half to two years.

This method is the direct consequence of the interpretation of the three important discoveries in the domain of syphilis, namely: 1. The spirochete is the direct specific cause of syphilis. 2. 606 and mercury are direct parasiticide remedies. 3. The Wassermann reaction is a manifestation of the activity of syphilitic virus. Are these interpretations correct? Are they proved? Cannot those discoveries be viewed from another standpoint and a different interpretation given, supported by clinical and experimental facts? Is Spirochæta pallida the direct specific agent of syphilis, or is it only a companion of the yet unknown syphilitic virus, with which it is symbiotically connected, which invades but does not infect the human organism?

In order to accept a microorganism as a direct specific cause of a disease, the requirements of Koch must be established: 1. The parasite must be found in all lesions and in all stages of the disease, and it must not be found in other diseases. 2. A pure culture is to be obtained. 3. By inoculation of the pure culture, the same disease must be reproduced. 4. The same parasite must be recultivated from the lesions of the inoculated person or animal.

Spirochæta pallida has been found in lesions and organs in all stages of human syphilis, and in many lesions and organs of animals inoculated with syphilis. The pure culture was obtained and inoculated into rabbits and lower apes, producing, after a characteristic period of incubation, lesions in, around, and far from the place of inoculation. In the lesions the spirochetes were found and their histological structure was like that of lesions of human syphilis, and a positive seroreaction was demonstrated in the blood of animals thus inoculated. And, lastly, the same spirochete was recultivated from the lesions, and again reinoculated into rabbits with positive results. This seems to show that all Koch requirements are fulfilled, and for the partisans of the pathogenicity of the spirochete its specificity is established, and others accept their opinions without going into the why of their conclusions.

Let us consider the four points from both standpoints of view of the spirochete. The incubation period, required for the development of the lesions in the inoculated rabbit or lower ape, is the same as in human syphilis, corresponding to the biological activity and development of Spirochæta pallida, studied and observed in experimental and human syphilis. The long incubation is due to the slow adaptation of the pallida to its new surroundings. The multiplication of the pallida does not start at once, but after a time; thus first the granulation tissue is produced around the invading microorganism, and in the same time blood and lymph vessels are formed. And when the conditions for existence and development are improved in the granulation tissues, multiplication takes place, and then we see the first macroscopical change; and with this the first period of incubation finishes.

This fact, which corresponds with the clinical incubation of a primary human lesion, speaks for the pathogenicity of the spirochete, but not against the conception that the spirochete is only a specific nosoparasite, which is not the cause but only a steady, constant, characteristic companion symbiotically, closely connected with the syphilitic virus. The identical histological structure of the lesion produced experimentally in animals with the syphilitic lesions in human beings is cited in support of the pathogenicity of the spirochete.

The demonstration of Martha Wollstein and Meltzer (*Journal of Experimental Medicine*, 18, p. 547, 1913) in their studies of pneumonia, that the bacillus megatherium, a saprophyte, on insufflation can produce in the lungs lesions histologically identical with the lesions produced by the specific microorganism of pneumonia, admits the possibility that the spirochete, because it produces histologically identical lesions with human syphilis, may not *eo ipso* be the specific syphilitic agent. The same is true regarding the fourth point; a saprophyte may be also recultivated from the lesions of the inoculated animal.

The presence of a positive seroreaction in the blood of inoculated lower apes and rabbits cannot be considered as proof of the pathogenicity of Spirochæta pallida, as normal rabbits and lower apes give very often a positive reaction (Fleischman, Fischer, Blumenthal), and the syphilitic rabbit not always (Uhlenhut, p. 137). Out of seventy-four normal rabbits thirty-nine gave a positive Wassermann reaction, thirty-five a negative (Dohi in Neisser's *Beiträge*, p. 515, 520, 1911). There remains to be considered the third point, the generalization of the lesions, which occur after spirochete inoculation and the clinical resemblance of some of them to lesions of human syphilis.

But in normal rabbits and apes skin manifestations occur, due to scabies and other external causes, which are exactly like some of those lesions observed in inoculated rabbits and apes, and to quote Neisser (*Beiträge*, p. 88, 1911): "It is impossible clinically to differentiate between syphilis and eczematous, papulocrustaceous exanthemata, which are often seen in apes without inoculation and spirochete demonstration. The statement that it is possible to recognize such lesion as syphilis is fanciful (*ist in der Luft schwebend*). *Nota bene;* for Neisser, the pathogenicity of the spirochete is proved.

Only in higher apes the identification of skin lesions after inoculation with human syphilis is possible, as they alone (chimpanzee, gibbon, orang-utan), among apes, can be inoculated in the regular cutaneous manner like human beings, and they alone present the classical development of human syphilis with skin manifestations, acknowledged by Fournier and Lassar to be syphilis, and their lesion, being reinoculated on another high ape, reproduces the same picture. As the crucial test of the specificity of the spirochete, namely, the positive inoculation of a human being with the pure cul-

ture, is impossible in our civilization, it would be desirable that the advocates of the specificity of the spirochete at least supply us with the second best proof, namely, the positive inoculation of a higher ape with a pure culture of the spirochete. The seed is here, let them produce the flower.

It was lately (1913) tried twice, but unsuccessfully (Mühlens, p. 417, Levaditi). Until then, Spirochæta pallida cannot be regarded positively as the direct cause of syphilis, and nothing can be brought against the interpretation that the spirochete may be considered as a saprophyte companion, let us say, a constant biological companion of the syphilitic virus.

Some may say, even if it is so, is not its recognized presence sufficient to establish a *diagnosis* of syphilis by the axiom: *Nosci sociis*—let me know with whom you associate and I will tell you who you are.

Yes; if we could always find it in the lesions and when found distinguish it from other spirochetes, especially in the oral cavity from Spirochæta dentium and in the genital organs from Spirochæta calligyra, which is found on the surface of genital or anal lesions either luetic or nonluetic. (*Journal of Experimental Medicine,* XV, 97, 1912.) To quote Noguchi, "it is impossible, in pure culture, always to differentiate the spirochete by the morphological aspect alone." (*Canadian Medical Association Journal,* II, 273, 1912.) Only the absence of odor in cultures and the pale reddish color after Giemsa staining distinguish the pallida. Neither Burri's method nor dark illumination can be implicitly relied upon.

In view of these considerations, is a diagnosis of syphilis from the presence of Spirochæta pallida alone always reliable to the extent of pronouncing a patient syphilitic and treating him as such? But by following strictly the rationale of the abortive method of treatment, *frapper vite et frapper bien,* the sooner the better, a diagnosis before the beginning of the treatment is not necessary, if we have to postpone our treatment even for a day in order to establish the diagnosis—to demonstrate the presence of the spirochete. The total destruction and complete annihilation of the specific virus can be accomplished sooner and quicker, if the parasiticide action of the remedies 606 and mercury is brought into play as soon as possible, before time has been given for the production of the results which are consequent upon its presence—and are expressed by a positive Wassermann, even before the generalization of the virus occurs.

And Neisser, one of the propagators of such a conception, advises us to treat with salvarsan and mercury *all* cases in which a slightest suspicion of a possible infection is entertained, and to *rely* upon the outcome of the Wassermann, which is to be done regularly, to establish the lacking diagnosis; a positive seroreaction showing that there is an active virus, that is, that the patient has contracted syphilis; a negative seroreaction proving that the patient is free from virus; and it is immaterial to the patient how he was freed from the virus, be it by the early parasiticide action of the timely remedy or owing to the fact of his never having had the virus. Here again we see that the advocates of the abortive treatment are induced to such an action by their interpretation of the action of salvarsan and mercury as purely parasiticide and of the Wassermann as an expression of an active, living spirochete. Such an action is logical from their point of view. Is their interpretation correct? Cannot the beneficial effect of the remedies be attributed to the indirect action of the remedy, which stimulates the cell to the formation of specific antisubstances?

True, there are two observations which seem to speak for the parasiticide action of salvarsan: Ehrlich's experiment, where the living spirochetes of relapsing fever were exposed *in vitro* to the influence of salvarsan and then a vain attempt to inoculate very susceptible animals with those spirochetes, proving by this, that they were deprived of their vitality by the influence of salvarsan (Ehrlich, *Lancet,* II, 445, 1913); and Ullmann's conclusion, who demonstrated that organs of animals inoculated with the spirochete and treated with 606 contain arsenic in direct proportion to the number of spirochetes usually found in the infiltrations of such organs,—proving by that a pronounced attraction of 606 by the spirochetes. (XVII. International Congress, *Archives de dermatologie et de syphiligraphie,* CXVII, 117-312, 1913.)

On the other hand, there are objections, but these objections, which are made against direct parasiticidal action by bringing to attention cases in which even very early applications did not kill or destroy the spirochetes (Mulcer's case)—that the disease despite early abortive treatment was not checked, but developed in normal manner—are met by the statement that the doses given were too small, that higher doses would accomplish the desired effect, although there are reported aborted cases, accepted by the advocates of this method as cases of reinfection, after intramuscular and other injections of 606 in small doses.

When objections are raised by citing facts, that even high doses failed to kill the spirochetes, which manage to remain alive, as proved experimentally in the macroscopically normal remnants of the former active lesions, later to give rise to recurrences, even when the arsenic was circulating in and being eliminated from the body (Kyrle, *Medizinische Klinik,* 369, 1914), we are silenced by the most ingenious theory of arsenfast and hydrargyrumfast spirochetes. On the other hand, the interpretation cannot be disregarded that it is not the parasiticide qualities of the remedy, but its dissolvent action upon the infiltration cells gathering around the virulent agent, that stimulates the cells to the formation of specific antisubstances and thus exercises an indirect curative action. This suggestion is supported by the clinical observation of the curative action of the remedies upon infiltrated lesions of syphilis, when very few spirochetes are present and by the demonstration of Block that in sporotrichosis, a disease caused by a kind of yeast, and clinically hardly distinguishable from certain forms of syphilis, the highly therapeutical iodide of potassium first of all dissolves the cells of the infiltration, while the parasites are not in the first in-

stance attacked. (Ehrlich, *Lancet*, II, 13, 445.) And this suggests a different explanation of previously mentioned observations of Ullmann.

The objection raised against the abortive method, from purely clinical observations, that the suppression of the early skin manifestations and subsequent recurrences with their accompanying infiltrations, is undesirable, because clinical observations seem to prove that the oftener the skin is affected during the early stage of syphilis, the less are the visceral and especially the nervous organs affected in the *late* destructive period of syphilis, is met by the foremost advocate of the abortive treatment, with the statement that such observations are fanciful *"scheint mir vollständig in der Luft zu schweben."* (Neisser's, *Beiträge*, p. 190, 1911.)

But from the gay atmosphere of Vienna are reported statistics of military officers affected with syphilis, in the last twenty-five years, which show that among the officers without relapses in the earlier stages, 41.23 per cent. suffered later from paresis, with one recurrence, 3.45 per cent., with many relapses, 1.33 per cent. (Mattouschek and Pilcz, *Medizinische Klinik*, 38, 1913). The reasons lie in the observations that recurrences, 1, remind the patients that they are not cured and induce them to further treatment and, 2, show an effort of the organism to protect itself. Spirochetes are more easily destroyed in scattered, infiltrated skin lesions. May not the same reasons be of still more value in patients in whom the recurrences are artificially suppressed and who, to boot, are assured that they need no more treatment as they are cured?

But the adherents of abortive treatment insist upon the fact that they kill the spirochetes and there is neither any need of further treatment nor fear of paralysis. And the negative Wassermann shows them that they did destroy the spirochetes. All these objections are theoretical and must be disregarded when the *fact* is considered that in patients treated with *the abortive method*, reinfection occurs far oftener than under any other method ever known in the history of syphilis. One man (Gennerich), a naval surgeon, reports in the last three years more cases of "reinfection" (*Münchener medizinische Wochenschrift*, p. 514, 1914) than has been reported and accepted as such in the whole medical literature of syphilis for the last two centuries, and he is the force behind that abortive method of treatment.

As syphilitic reinfection is understood as a *new* infection of a subject *entirely* free from lues, it must be admitted that the parasite was killed and annihilated by the remedies, its development checked, and the symptoms which followed the reinfection were due solely to the action of the newly introduced virus. The usual course of these reported cases is as follows: After establishing the diagnosis by means of the presence of spirochetes, the abortive method is instituted immediately without waiting for any other symptoms. Usually under such a treatment, no secondaries appear, and the Wassermann remains mostly negative. After the treatment is finished according to the adopted method, the patient is watched for clinical manifestations and controlled by seroexaminations. When both are satisfactory for a period of from six to nine months, he is dismissed with the admonition to appear at regular intervals for examination. Some of them reappear three to four months later, after an exposure, with a new lesion, remote from the site of the previous primary lesion, and sometimes they have also enlarged glands.

In this new lesion spirochetes are found again in sufficient numbers, and, if no immediate treatment is instituted, as happened in some of the reported cases, a positive Wassermann and a roseola appear. These symptoms are ascribed to reinfection and are interpreted as due to the action of the newly introduced virus. Is such an interpretation correct? Cannot the old virus, if still in existence in the body, alone or with the addition of the new virus, or the new virus alone during the presence of the old virus, produce those manifestations? Can they not be regarded, as in former years, as superinfection, pseudochancre, or solitary secondary manifestations?

The theory of immunity in syphilis as now understood does not speak against such an interpretation. It is a clinical fact that exactly such symptoms appeared in a syphilitic patient of three years' standing and for one year free from external manifestations, and *without exposure to coitus*. The author who reported this case paid special attention to this point when establishing the anamnesis; the patient having been confined to bed for eighteen months without being able to move (Audry, *Annales de dermatologie et de syphiligraphie*, p. 241, 1912), shows that the old existing virus can after years give the same manifestations: Chancre roseola, spirochete, and a positive Wassermann without the presence or addition of a new virus, as ascribed by some to the new virus alone.

Even the appearance in the early period of syphilis of a new chancre, followed by secondaries, does not necessarily prove that the old virus has been entirely eliminated, as shown by the cases published by Lipschütz, where patients, suffering with secondary lues in the florid stage, acquired by exposure typical scleroses, both macroscopically and microscopically, with spirochetes, and even in one case a roseola followed the sclerosis (*Dermatologische Zeitbericht*, 1081, 1913); thus we cannot call cases in this stage with such symptoms reinfection, till we prove that the syphilitic virus is eliminated.

How can we prove it in the present stage of our knowledge of syphilis? Some prove it by the Wassermann, giving to the positive reaction the interpretation of an active virus, and to a prolonged negative reaction the interpretation of the elimination or nonexistence of that virus. In short, they ascribe to the Wassermann a pure specific origin and build their method of treatment upon that foundation.

That the complement-binding material may not be due to the resorption of the product of endotoxins of spirochetes, but possibly to the product of the changed tissues, is possible from the fact that a negative Wassermann could be gradually obtained from a doubtless positive by giving fifteen grams of tyrosin in twenty-three hours (Sonderberg, *Neurologisches Zentralblatt*, 1, 1914). A positive Wassermann

has been changed into a negative in secondary syphilis by injection of lecithin (*Quarelli, Gazzetta degli Ospedati,* 1909-10), and neither tyrosin or lecithin is an antisyphilitic remedy. Many other factors may be brought to substantiate the possibility of another interpretation, but it is enough to mention that Neisser accepts the Wassermann as due directly to the presence of active spirochetes in the body, and his coworkers, Bruck and Stern, in the field of elaboration of the Wassermann believe that it is due to biological changes of the cells of the organs. Thus we see that the whole conception and method of abortive treatment is based, not upon facts, but upon certain interpretation of these facts in the light of the new discoveries in the domain of syphilis.

It is well to have in mind such an interpretation and follow the method based upon such considerations, as long as it does not interfere with the fundamental conception of the treatment of syphilis—namely, the persistent intermittent treatment with mercury, the other remedies, as salvarsan or the iodides, being considered as secondary, additional, useful only in certain stages and conditions of the disease; and we may accept this method of abortive treatment only on account of the possibility to continue the treatment longer, because we started sooner.

But when the method is urged upon us with the idea that it will enable us to cease treatment after the first six or ten months, and even sanction marriage and procreation in two years or earlier: two procedures which are most dangerous for the future of the individual syphilitic man and for the community,—more proof must be asked of the validity of the method than the present state of our knowledge of the new method of treating syphilis can give us. Until then, the behavior toward the claims and dreams of the enthusiasts of the new method will be modelled in accordance with the wise injunction of the Greek philosopher: Remember to disbelieve.

180 West Fifty-eighth Street.

TUBERCULOUS PERITONITIS.

Surgical Interference for Its Relief.

(*Second Paper.*)

By Aspinwall Judd, M. D.,
New York,
Adjunct Professor of Surgery, Post Graduate Medical School and Hospital

My original paper upon this subject was read before the Society of the Greater City of New York about two years ago. Since the time of its writing, three years ago, I have encountered nine additional cases. In that paper I stated that, in computing the value of operative interference in tuberculous peritonitis, we must bear in mind the fact that spontaneous recovery under proper dietetic and hygienic environment is not rare. The results, however, following the operation about to be described, have been almost uniformly encouraging, so that, in spite of the small number hitherto performed, I have thought it worth while to publish the results.

The earlier operations for tuberculous peritonitis were the results chiefly of a mistake in diagnosis. When tuberculous peritonitis was found, as a rule, after careful examination, the abdomen was closed. In a certain proportion of these patients recovery resulted. As nothing was done in these cases beyond merely opening the abdomen and exposing the foci to the air, it was thought that in all probability the result obtained was simply due to the admitting of oxygen and light into the peritoneal cavity. Several years ago it was my privilege to observe the results obtained in a number of cases by Dr. Samuel Lloyd, with a technic which, in a modified form, I have since adopted, and my results are due in large measure to his ideas. All told, I have operated in thirty-one cases, twenty-seven in adults and four in children. In nearly all, the primary improvement was very marked. In some, the improvement was only temporary; in others a second operation was required to obtain the ultimate result. In only a few, four in number, and these in an advanced stage of the disease where the lungs or other organs were also considerably involved, was no improvement noticed.

The operation consists in an incision three to four inches in length through the sheath of the right rectus. Upon examination of the viscera and parietal peritoneum, disclosing the diagnosis of tuberculous peritonitis, the patient is eviscerated so far as possible. The intestines being caught in a nest of hot, moist towels, are thoroughly washed with a solution of fifty per cent. commercial hydrogen peroxide. The abdominal cavity is then thoroughly flushed with the same solution, after which it is washed out with a normal saline solution with equal thoroughness, as are also the intestines. These are then replaced in their proper position within the peritoneal cavity, which is closed with three layers of sutures. Primary union has followed in every case in which I have operated.

One of the chief objections raised to the old operation for tuberculous peritonitis was the fact that secondary infection very frequently occurred with a slow and tedious convalescence. As in these cases it is extremely important that the patient should be got out of bed and about at as early a day as possible, it can readily be seen that primary union is an essential part of our operative procedure. Hydrogen peroxide seems to help us to this end. It has been my habit to get my patients out of bed in from eight to twelve days, thoroughly protected by a snug abdominal binder made from adhesive plaster. General treatment for the relief of the tuberculous condition by means of supernutrition, proper dietetic and hygienic environment, and appropriate drugs, is instituted. Hydrogen peroxide is valuable, not only as a treatment for tuberculous peritonitis, but also as a means of diagnosticating this condition in its earliest stages before it is really perceptible by other means. When hydrogen peroxide is poured upon the peritoneum, it produces a frosted appearance somewhat similar to a window pane on a cold winter's day. After the flushing with normal salt solution, the peritoneum not the seat of tuberculous peritonitis will resume its normal pink color. Where, however, this condition exists, the smallest miliary tubercles will stand forth pearly white upon a pink background.

A somewhat similar effect upon the peritoneum is encountered if peroxide of hydrogen is used in diffuse suppurative peritonitis, especially where adhesions occur. A differential diagnosis between these two conditions, however, is so easy that this point of resemblance is of no consequence.

Of my first twenty-two cases, five were primary tuberculosis of the appendix, or, at least, seemed to be localized in the appendix and the first two or three inches of the colon and small intestine. Three of these were reported by me some five years ago at the Academy of Medicine. I have no doubt that many cases heretofore unrecognized can be determined by this method to be primary in or about the appendix. The recovery of these cases is truly remarkable. In most of them the patients have gained from twenty to sixty pounds within six months succeeding the operation. I had the pleasure, not long since, of presenting before a clinical society six patients, all of whom were in fairly advanced stages of the disease at the time of operation, none of whom had gained less than twenty, while one gained sixty pounds after the operation. As I have already stated, relapses have occurred. In four of my cases I found it necessary to resort to a secondary operation. I attribute my failure in the first instance to the fact that the hydrogen peroxide failed to come in contact with all of the tuberculous foci. These four patients have all done very satisfactorily as the result of their second operation. While it is as yet too early to claim a cure for this operation, and while I shall not be surprised to see a relapse, still, the results, coupled with those in the cases of Doctor Lloyd, lead me to believe that we have achieved a considerable advance in our treatment of this condition.

A summary of some case histories follows. My first five cases of tuberculous appendicitis were all somewhat similar and were operated in as chronic appendicitis. In three a mass was palpable; in two the diagnosis of fibroid appendix was made. The symptoms were those of chronic intestinal indigestion with some considerable loss of flesh, and in two with a mass, a slight apical involvement led me to a suspicion of the proper diagnosis. Pathological examination in all these cases disclosed tuberculous peritonitis. The operation was simple. No general flushing or evisceration was attempted. The patients gained considerably in flesh and were entirely relieved of their symptoms. I have since operated in four more cases of primary tuberculosis, in or about the appendix, with the same satisfactory result. I hope shortly to report a number of these cases; my time of preparation was too short to do so in this communication.

In four cases resulting unfavorably, the patients were in an advanced stage of emaciation, and suffered with diarrhea. Involvement of the lungs was also present, and in one case also laryngeal tuberculosis. There was also a history of night sweats, more or less cough, and rapid pulse. Even in these cases temporary improvement was seen, except in one case, which rapidly went on to a fatal termination.

The administration of the anesthetic in these cases is a grave problem. Chloroform was given in all my cases. In view of what we have been able to accomplish with novocaine in local anesthesia in abdominal work in the last few years, it seems to me that it would not be impossible to perform many of these operations without the aid of general anesthesia, or, at least, by calling it into the operation only to tide us over a few moments. It may seem to many inadvisable in these advanced cases to proceed to operation, but one of my patients lived in an improved condition for more than a year and a half, and had another had proper hygienic surroundings subsequent to the operation, I have felt that he might have gone on to a recovery. Where it is impossible to obtain this environment, the operation *per se* is of little avail.

Of the remaining patients, eleven gave no hint of other tuberculous involvement—five had pulmonary lesions with tubercle bacilli in the sputum. Tuberculous involvement was found upon the visceral peritoneum in all, and upon the parietal peritoneum as well, in several. The dissemination of the lesion in five was almost complete. The head of the colon, the ascending colon, and the small intestine were most frequently involved. In three a coincident involvement of the Fallopian tubes was found. In two of these the annexa were removed. In one, after having opened the fimbriæ and applied hydrogen peroxide to the interior of the tube, they were replaced. In all cases with involvement of the genital organs recovery was complete. One woman has since become pregnant, but miscarried.

Up to the present time I have had one death the result of this operation. In this case the adhesions were very extensive. The operation was undertaken for the relief of a chronic intestinal obstruction which had become acute. It was found necessary to separate an enormous number of adhesions, some being so tough as to require cutting with the scissors. The outer coat of the bowel was ruptured in two instances and required repairing. Practically the entire intestinal tract and also the parietal peritoneum were involved, as well as the annexa. (The patient was a woman.) I did not succeed in separating more than a third of the agglutinated coils. My patient died of shock, three hours after the operation.

The following points, it seems to me, are worthy of recapitulation:

1. The use of fifty per cent. peroxide of hydrogen for the purpose of diagnosis, and through oxidation, or possibly by increasing the congestion, to destroy the tubercles. It has seemed to me that the primary union which I have had in every case so far, was due, in large measure, to the liberal use of this same peroxide. This has seemed remarkable to me—100 per cent.—and is certainly better than I have been able to obtain in ordinary laparotomy wounds.

2. The thorough flushing of the abdominal cavity, so that the peroxide comes in contact with all the affected areas.

3. The necessity of getting these patients out of bed as quickly as possible. We well know how badly they do, if housed or kept upon their backs.

4. The necessity for aftertreatment in the form of hygiene, nutrition, and appropriate drugs need hardly be mentioned.

137 West Sixty-ninth Street.

DECAPSULATION OF THE KIDNEY.

Its Value in Bright's Disease, Particularly in Resistant Cases.

By Daniel J. Lynch, M. D.,
Chicago.

Before reporting a case, I should like to discuss briefly the nature and aim of this operation, a comparatively new procedure with which the profession in general is not familiar. In looking over the literature, I find that the operation of decapsulation of the kidney for the relief or cure of Bright's disease, both acute and chronic, was first brought to the notice of the profession by G. M. Edebohls, in 1903.[1]

The operation as performed by Edebohls, consisted in the removal of the capsule proper, with a view to a new and increased blood supply to the diseased kidney. The kidney is exposed as in nephropexy, an incision being made at the outer border of the erector spinæ mass, and carried down to the quadratus lumborum, the fibres of which are divided with the fingers or pushed aside, and when the fatty capsule is opened, the kidney will readily be found, especially in thin subjects where counter-pressure is made from the abdominal side by an assistant. After inspection of the organ, the fibrous capsule is incised from pole to pole of the kidney, and carefully stripped off on each side as far back as the pelvis. The organ, deprived of its capsule, which has been entirely cut away, is returned to its proper place and held *in situ* by means of a strong suture passed into the cortex in a longitudinal direction and secured to the muscle. The wound is then closed by buried and integumentary sutures, then dressed, and the patient kept quiet until union is secured.

So much for the technic of the operation, and the aim being already discussed, the next question which arises is, on what class of patients suffering from this disease should we operate, and under what condition should the operation be done?

In answer to the first question, Edebohls says, "Decapsulation is advisable for every sufferer who has reasonable expectation of not less than a month of life without operation." The three conditions given are: 1. The clear and unequivocal establishment of the diagnosis. 2. The absence in a given case of absolute contraindications to any operation. 3. The possibility of securing the services of a surgeon practically familiar with the surgery of the kidney. The earlier in the disease the operation is performed, the better the chance for a cure. Advanced age is not a contraindication if the patient is otherwise in reasonably fair condition. Hypertrophy of the heart must be considered, and as long as the enlargement is not due to dilatation, and as long as the hypertrophy is concentric, an anesthetic may be given.

In recent years the writer has noted marked improvement in cardiac conditions after operation. Albuminuric retinitis must be considered, as its presence denotes a late stage in the disease, and in recent years he was led by his experience to decline operating when it was well marked. His experience with renal decapsulation was not very encouraging, and the only condition in which he advised operation was where a new chronic nephritis had started up after a former one had been entirely cured. He was able to follow up ninety-nine out of 102 cases operated in by him, there being an average of five years to each case, with the following results:

Ten deaths were chargeable to the operation, though this is not positively correct, since all ten patients were within a few weeks or days of death by the disease. These cases are offset by at least twelve others in which the patients were snatched from impending death by the operation.

Thirty-nine deaths occurred at periods remote from the operation, and in none of these was it a factor, only eleven out of these thirty-nine patients were not benefited, and in others operation did no harm.

Six of the survivors are classed as nonimproved, but this is not absolutely correct, as five of the six are in better general health since the operation. Of eleven classed as improved, the betterment has been continuous since the operation, and three appear to be on the eve of restoration. The thirty-three cures of chronic Bright's disease from operation would, it is stated, justify all the work that had been done, even if no benefit had accrued to the remainder of his patients. Tyson says: "It is admitted by every one who has studied the subject experimentally on animals, and confirmed in the few instances in which a second operation has been performed on the same subject, that a new capsule forms in from ten to twenty days after decapsulation; the point of difference being as to the vascular communication between the capsule and the surrounding tissues, the presence of which would explain the permanent improvement."

From such an examination as he has been able to make from drawings made to illustrate experimental papers, he favors the probability of such vascularization. He further states that in his opinion, there has been a good deal of theoretical objection to the operation because of the tendency of the capsule to be restored, and the absence of a new blood supply thus furnished, although certain experimenters assert such a supply does succeed the operation, and they furnish drawings from actual specimens to show that this is actually the case. Cholzoff upholds this contention by referring to Mueller's series of cases of chronic painful nephritis in which he opened the peritoneal cavity and, after decapsulation, fixed the omentum around the kidney. The experimental results were as follows: Five months after the operation Mueller found a profuse development of new bloodvessels both surrounding and inside the substance of the kidney. Girgoleff further shows that in from ten days to eight weeks after operation, the vessels are not only in the cortex but extend into the medulla as far as the papilla.

Tyson finally makes an excellent summary of the whole situation, where he writes as follows: "But 'the proof of the pudding is in the eating,' and its improvement, attested by a number of clinicians and surgeons, takes place after the operation, it

[1] See Sayen's *Annual* for complete literature on the subject of decapsulation.

does not very much matter whether it comports with the anatomy or physiology of the kidney as at present understood or not. It is unfortunate but true that many well determined results succeed therapeutic measures which are not explainable."

I wish now to report on some cases in which I operated for chronic nephritis. The first patient is apparently enjoying the best of health and, as she is in the habit of remarking, "feels better than she did in twenty years."

CASE. Mrs. E. K. came to my office, June 4, 1912, complaining of stomach trouble and constant headaches; aged fifty-seven years; family history negative; personal history negative, except for operation on uterus, ten years previously, for the removal of tumor, on the precise nature of which I could obtain no information.

Examination of urine showed a greenish turbid urine of low specific gravity, containing some albumin, red blood cells, and granular epithelium. Amount passed, varied from two to four pints a day. Arterial tension was increased and blood pressure ranged from 175 to 215; no marked increase was shown in the thickness of vessel walls. Heart was slightly enlarged and patient complained of difficult breathing, especially at night. Had dyspepsia and a severe mucous colitis, of which she complained very much. Skin was pale and dry and face doughy in appearance; had no eye troubles and no tendency to edema. At this time elimination of urea was almost normal.

Diagnosis, chronic interstitial nephritis. I might here remark that at first patient denied having this trouble, but afterward admitted having been treated for chronic Bright's disease, for a period of five or six years, at first in Louisville, Ky., and later in Chicago, in which latter place she was told her case was incurable. It goes without saying that my prognosis was not any more hopeful than the rest, and I treated her medically until the following January, when she insisted upon going to Florida for the winter. On returning to Chicago, May 9, 1913, she exhibited symptoms of uremia, and on May 12th was seized with uremic convulsions.

The patient was removed to Columbus Hospital, where she had several convulsions. Examination of urine showed diminished excretion, increased albumin, a large amount of tube casts, epithelium, and blood cells. Blood pressure high. The ureters were catheterized to ascertain if one kidney was more at fault than the other, with a negative result, that is, both were found in equally bad condition. Despite all treatment the patient remained in a semicomatose condition, from which she seldom could be aroused, for the next ten days, and her friends were very much alarmed.

I suggested, as a last resource, operation. On May 24, 1913, patient was anesthetized, chloroform being the anesthetic. I made the usual incision outside the erector spinæ mass down to the quadratus lumborum, this being pushed aside. The fatty capsule being found and opened, the kidney was incised from pole to pole, the capsule proper or fibrous capsule was stripped off as far back as the pelvis on each side, and now, instead of following out Edebohls's technic of cutting away the entire capsule, and passing a strong silk ligature longitudinally through the cortex or substance of the organs, which in my estimation will only further damage an organ which is already none too good, I cut away the whole capsule with the exception of a narrow strip on each side of the pelvis, about three quarters of an inch wide left for the purpose of forming a cradle; for the suspension of the kidney a strong ligature was passed twice through each tag, the ends being carried through the adjacent muscles. The two ends were knotted separately on each side, that is, the ends of one side were not crossed or knotted with those of the other side, as this would tend to pull the ligatures through the tags of the capsules with the consequent loss of suspension. After making sure that the fatty capsule was completely removed, and the surface kidney came in contact with the adjacent muscles and that no adipose tissue or other debris intervened, the wound was finally closed by buried and integumentary sutures and union was awaited.

I found the right kidney of almost normal dimensions and the capsule thin and adherent, the cortex bleeding freely when it was removed. The left kidney was somewhat smaller than the right, being irregularly indurated and sclerosed; capsule thin, tough, and adherent; cortex bleeding freely when separated from it. The wound closed by primary intention and healed in twelve days perfectly on each side. The patient was quite conscious after recovering from the anesthetic, although she was not aware that an operation had been performed.

On the fourth day after operation, albumin and casts had completely disappeared from the urine and its specific gravity had materially improved. The patient was discharged from the hospital, June 28, 1913, having made an uneventful recovery.

I have kept track of this case and examined the urine regularly up to the time of writing. The specific gravity improved steadily and is now 1,020; no casts, albumin, or cells have since been found, and the patient has gained thirty-four pounds since the operation, and is now in normal health. I wish to report two other cases similar to the foregoing, in which I have operated within two months and which seem to be much improved, but sufficient time has not elapsed since operation to enable me to say that the progress made will be permanent.

6157 BROADWAY.

SURGERY IN MODERN WARFARE.*

BY A. K. YOOSUF, A. B., M. D.,
Worcester, Massachusetts.

It was my good fortune to attend the wounded soldiers during the Turko-Balkan war, as a surgeon at Constantinople in a large hospital of the Red Crescent Society. Undoubtedly this was a terrible war, slaughtering thousands and saturating the earth with human blood, from Thrace to Macedonia, and from Kirk Kilissé to Chatalja.

This war has given to medical and surgical science many points for study concerning the different wounds inflicted by different modern arms, the conditions, the method of treating them, and the results. Many visitors at our hospital expressed their surprise at the rapid recovery of the soldiers wounded by bullets, at the battles of Kirk Kilissé and Lulé-Burgas, at the beginning of the war. They had been shot through different parts of the body, but as the bullets did not penetrate vital organs or vessels, no grave symptoms developed, and Nature was able to repair the damage without the aid of a surgeon.

We may consider the physical qualities of gun-

*Read before the Worcester District Medical Society, February 11, 1913.

shot projectiles, (a) the shape, (b) the dimensions, (c) the volume, (d) the weight. Then we have the velocity, rotation, heat, the angle of striking the anatomical situation, the course of the injury, and the conditions pertaining to the parts of the body. I shall not attempt to consider all of them separately. Permit me to mention a few general facts, which we must consider when studying the wounds made by modern arms: 1. The number of wounded. 2. Rapidity of cannon. 3. General gravity of wounds. 4. Immediate mortality on the battlefield. 5. Mortality secondary to wounds. 6. Mortality due to multiple wounds. 7. Frequency of wounds of the head. 8. Mortality due to different wounds.

1. *The number of wounded.*—In discussing this, we must take into consideration the range of cannon and rifles, whether they are fired from a long or short distance, and whether shrapnel or Mauser projectiles are used, as naturally these have a great deal to do with the number of wounded. The great shells bursting at a distance of 6,000 to 7,000 metres are not so deadly, being practically out of the danger zone, but fired at a distance of 4,500 to 5,000 metres, the wounds of these shells are generally mortal, and when they explode in the middle of a group of soldiers the result is appalling.

When cannon balls enter the abdominal and thoracic cavities, death is immediate. On the battlefield it is hard to operate in such cases, first because of lack of accommodations, and second because the pieces of these shells are so hot and so irregular—plus the considerable velocity—that when striking the parts they produce burns, laceration, mortification, and gangrene, arresting the nutrition and blood supply, making operation difficult.

The wars in Manchuria and the Balkans furnish interesting information concerning soldiers wounded by modern arms, and demonstrate the possibility of future wars proving less fatal. The following figures are interesting, showing as they do the percentage of total losses during the different campaigns.

In the Crimean War with France		15%
France and Germany, 1870	France	10%
	Germany	18%
Manchuria	Russia	20%
	Japan	41%
Balkan		45%

Here is a list showing the percentages of isolated battles:

Moscow and Leipzig		30%
France		20%
Mukden	Japan	20%
	Russia	16%
Kirk Kilisse, Turkey		20%

The battle of Mukden lasted six days with a daily loss of two per cent. Often single battalions lost three fourths of their number, such being the case at Kavala. On the other hand, M. Schnieder, Director of Health of the Twentieth Corps, states that while some regiments lost considerable of their number, the loss in trenches was small.

2. *The rapidity of cannon.*—Each shrapnel has more than 300 explosions, the rapidity of the balls making shrapnel most dangerous at a distance of 2,500 to 3,000 metres. In the Turko-Balkan war, the majority of wounds—nearly eighty per cent.—were due to shrapnel, and with few exceptions were aseptic before arriving at the hospital.

At the entrance and exit wounds of shrapnel there is terrible destruction, ripping of the aponeurosis, tissues, and muscles, producing an extensive suppuration of the parts, and where the long bones are struck, complicated fractures are produced with extensive damage.

The question naturally arises, Why is shrapnel so damaging? The explosions of shrapnel, which contains many irregular pieces of iron and round balls, scatter them about in divergent directions, producing extensive tears and lacerations. In every projectile bullet there is picric acid. These bullets coming in contact with the human body become cold, and the force of penetration less, but prove most infectious, as they generally carry with them pieces of clothing which are dirty and greasy. The phlegmonous condition at first sight seems very grave, but happily recovery is comparatively quick.

According to Biercher and some Ottoman officers, the ravages of shrapnel are dangerous and deadly



when the explosion takes place at a distance of ten to thirty metres. When they explode at a distance of 100 to 300 metres the damage is not so severe. A turban around the soldier's head will protect him from danger.

Radiographs taken at Kaderga, Gulhané, and Dar-ul-Funin hospitals have proved that at the first zone of 500 metres the lesions of projectiles are more destructive to the bones, and less to the tissues, through fracturing the bones, and at the second zone of 1,200 metres the lesions are comminuted fragments, being many and small. At the third zone of 1,200 metres the lesions are contusive fractures, being X shape, with great displacement.

3. *The general gravity of wounds.*—During the Russo-Japanese war the wounds in Manchuria, for example, taken all together, were comparatively slight, although in many cases, of course, they were in a very grave condition. A German surgeon—Schaffer—with two Russian surgeons, Swenson and Ostensacke, have compiled very interesting statistics, in which they state that 36,000 soldiers, each of whom had four times received bullet wounds, re-

covered within short periods, and were again sent to the front.

In the Turko-Balkan war, the figures will not reach the foregoing, but I can say without hesitation that many soldiers suffering from wounds were under the care of the hospital only a short time, and were again sent to the front, and it is stated by two doctors that sixty-six per cent. of the wounded returned to the front. At Dar-ul-Funin Hospital our percentage was about forty-five to forty-eight per cent. It is also estimated that from three to nine per cent. of the wounded succumbed. In our hospital the death percentage was never over three per cent.

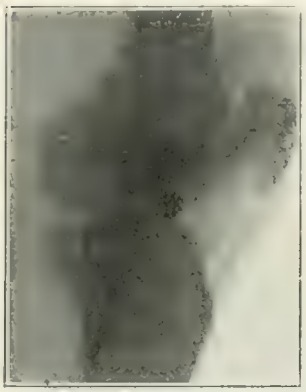


Fig. 2.—Bullet lodged in knee joint.

4. *Immediate death on the battlefield.*—Undoubtedly mortality on the battlefield has been great. In the war of 1870, it was one death to each 5.8 men wounded. In Manchuria the percentage was, Russia, one to 4.9 per cent., and Japan, one to three per cent.; in the Turko-Balkan war, one to three per cent., or specifying the anatomical regions:

Head and neck—general mortality	59 %
Trunk—general mortality	55 %
Upper extremities—general mortality	5 %
Lower extremities—general mortality	5.5 %

In the Kirk Kilissé conflict the general mortality, specifying anatomically, was

Upper and lower extremities	80%
Head	15%
Thorax	10%
Abdomen	9%

These figures are quite different from those of previous wars. The change and transportation of armaments and military technic have become more scientific and accurate in relation to human life.

5. *Mortality secondary to wounds.*—The mortality secondary to wounds was considerably less compared to previous wars. This, of course, is due largely to asepsis and antisepsis in surgery and partly to modern armaments, equipments, and transportation facilities. At Dar-ul-Funin Hospital I had not a death from sepsis due to operation, but to general septicemia, before arriving at the hospital.

I think the following figures speak more eloquently of asepsis and antisepsis than I could. In the Crimean war the mortality was twenty-nine per cent.: war of 1870, twenty-one per cent.; in Manchuria, Japanese, five per cent.; Russians, three per cent.: and in the Turko-Balkan war, Turkish, three to four per cent.

6. *Frequency of multiple wounds.*—Multiple wounds were frequent. There are many cases recorded during the Russo-Japanese and Turko-Balkan wars. A Japanese surgeon, Doctor Hugo, found a soldier on the battlefield with 100 shots and 200 bullet holes in his body. During the Turko-Balkan war I saw many with six and ten shots, and one man with sixty bayonet wounds. These things are not at all surprising when we consider modern arms—shrapnel, mitrailleuse, rapid firing guns, and explosives.

7. *Wounds of head and body.*—Wounds of the head were many because of the modern method of combat. In olden times battles were fought in open fields; today we do our fighting in trenches and behind defences. The head and arms are exposed more than the rest of the body. Even when lying down, the bullets flying around and above frequently hit the body.

Hildebrandt, speaking of the injured during the Boer war, says that fifteen per cent. were wounded in the body, and as a rule, immediately succumbed, because of severe injuries to the vital organs. Frequent explosions around the head are unavoidable, and the effect of shrapnel on the cranium is grave. Major Mategnon compares the head to a ripe pomegranate, when struck by shrapnel.

Many thousands of Turkish soldiers were crushed in the trenches, under the terrible fire of Bulgarian shrapnel. Doctor Yahouh in his little book, *The Wounded in the Turko-Balkan War*, states that among 221 wounded soldiers at Kaderga Hospital, craniotomy was performed in only three cases. At Dar-ul-Funin Hospital I operated in eight cases. One soldier was brought to me from another hospital in a comatose condition, suffering with meningitis. I found pus at the fissure of Sylvius. He rallied for a short time after the operation, but died two days later.

I had many opportunities to operate on soldiers who had been shot in the head, and this is a very interesting and fascinating part of surgery. I will not burden the reader with the anatomy of the head, nor recount the fissures, sinuses, and lobes of the brain, but will relate briefly a few interesting cases. In war time, diagnosing the fractures of the head is not difficult, as the surgeon easily finds the entrance and exit of the bullet, and can study the clinical symptoms.



Fig. 3.—Another case of bullet in the knee joint.

Case I. A soldier, aged thirty-four years, was shot in the head, at the battle of Kirk Kilissé, the shot fracturing the parietal, and part of the frontal bone. The symptoms—not in detail—were: Loss of speech, slight facial paralysis, and slight monoplegia. I operated on him under chloroform, at great disadvantage, no trephining nor sufficient forceps, no good assistants nor nurses—taking out all the fragments, and following the line of fracture, thus relieving the pressure. This was my first operation performed before a few prominent Pashas and doctors.

On November 5, 1912, five days after the operation, the patient walked into the dressing room and asked me to change his dressing. There was no complication during the operation, and no rise of temperature after it. Recovery was good. He was able to articulate a few words within a few days, and was discharged from the hospital well and able to speak.

Case II. A very tall Kurd was shot through the left part of the occipital bone near the mastoid. There was an opening nearly the size of a half dollar. I found the dura ruptured, with cerebral hernia, and escaping cerebrospinal fluid. Found pus in the short fissure of parietooccipital fissure.

At first he did not suffer from headache, the only symptom being a little stiffness of the neck. The remarkable point of his case was his absolute blindness, due I suppose to the injury of the cavernous sinus, by a penetrating wound through the optic nerve, or by a splinter from a ball resting upon the orbital nerve.

One day, while having his dressing changed, he was seized with terrible convulsions, and continued in this way at intervals sometimes exhibiting opisthotonos. He died within two weeks.

Case III. A young soldier, Osman, shot through the right parietal bone, brought to the hospital in a semicomatose condition, with severe headache and monoplegia. Lumbar puncture showed some blood in spinal fluid. Operated on his head, relieving the pressure. There were many fractures. Found a little hemorrhage under the dura. Making a small incision in dura, I put in a small silk drain. Recovery good without complications. Within ten weeks he was able to go home, well and happy.

Case IV. Another young Turkish soldier shot through the head. Coma—loss of pupillary reaction—pulse very rapid and not of good quality—respiration rapid and ebbing. Lumbar puncture made, and found spinal fluid turbid and bloody, so decided to operate immediately.

After making a large scalp incision, found extensive fracture. Trephining found hemorrhage from a branch of meningeal artery. Dura was torn. Cleaned the clot, and ligated the vessel. Patient gradually became conscious. Recovery uncomplicated. Discharged from the hospital at the end of two months.

Case V. A Greek, S., shot in the middle of the forehead, fracturing as far as the left orbital arch. He was conscious and complaining of some headache. Face and eyes badly swollen—hardly able to examine his eyes. Found hernia of frontal lobe, oozing cerebrospinal fluid. I thought his death only a matter of time, but on account of pain, I was obliged to remove the splinters, which were nearly imbedded in the brain substance. Under chloroform, I found such an extensive lesion, that I followed the line of fracture and removed all the fragments, smoothing the edges of the bones. There was very little hemorrhage, but a hernia with some sloughing of the brain substance. I incised the sloughing part of frontal lobe, leaving a healthy surface. Granulation of brain substance was satisfactory, except for the oozing of cerebral fluid coming under the external angular process of the orbit. During all the period of his illness there was very litle discomfort or pain, except for slight mental disturbance. However he grew weaker, losing weight fast, and died four weeks after the injury to his head—very likely from encephalitis.

Raser states that the escape of spinal fluid is indicative of a superficial lesion, the swelling following deeper injuries preventing such a discharge. In this case, it seemed to me the matter was just the reverse.

Gunshot wounds involving the brain are of two kinds: Perforating and penetrating. A penetrating wound is one in which the bullet enters the head and does not emerge. A perforating wound is one in which the bullet passes *through* the head. The injuries vary according to the distance of the shot and the kind of shot used. At the wound of entrance the fracture in the external table may be no larger than the ball itself, and it may be even smaller, while the inner table may be extensively fractured.

The recent advances in cerebral surgery have changed our treatment of the wounds. The difference between the modern treatment of gunshot wounds and the older treatment is due to antiseptic methods, the courage to interfere, and the use of drainage. Formerly the balls lodging in the brain were allowed to remain, unless they were superficial. Modern brain surgery has changed all this. Antisepsis of the brain is the only thing. Wharton has shown by an analysis of 310 cases of foreign bodies lodged in the brain, even in the preantiseptic days, that of 106 in which removal was effected, thirty-two per cent. ended fatally, whereas in 210 cases in which the balls were *not* removed 122, or 58.1 per cent., were followed by death.

The prognosis of brain injuries is undoubtedly grave, not because of the fracture, but because of associated lesions and resulting complications; hemorrhage, lacerated sinus or meningeal vessel, and actual cerebral damage due to meningoencephalitis, because of the nearness of the brain. Fractures of the internal table alone proved fatal in nineteen out of twenty cases; in penetrating fractures 85.5 per cent. (402 out of 470 cases) and in perforating fractures eighty per cent. (fifty-six out of seventy cases).



Fig. 1. Fracture by perforation.

Injuries of the base of the brain are more dangerous than those of the vault. However, Guthro states that a wound of the anterior part of the head is more likely to cause death than one of the posterior Lydell's investigations show that mortality is much less than is generally supposed—thirty-five out of 137 patients recovered perfectly, and two or three were so well as to reenlist.

The question always arises in these cases: After attending properly to the bones, how much exploration or interference should be made in the brain itself? This is an important question, and I can only say that interference depends upon the judgment of the surgeon, the condition of the patient, and the appearance of the brain.

8. *Mortality due to variety of wounds.* These depend on the variety of arms used. Statistics on this subject are not definite, but studying the modern armaments, we find the following:

In the Crimean war		Wounded by artillery	43%
		By rifles and explosives	54%
		By arms other than firearms	3%
1870	France	Wounded by artillery	25%
		By rifles and explosives	70%
		By other than firearms	3%
	Germany	Wounded by artillery	9%
		By rifles and explosives	90%
		By other than firearms	1%

French explosives have proved superior to German, and while the Germans were using projectiles with their infantry, the French were using projectiles with their artillery. The same was demonstrated in the Russo-Japanese and Turko-Balkan wars. The French explosives and projectiles were so superior to Germany's that it became a daily saying, whenever a Turkish defeat was heralded, "It was made in Germany."

In the Japanese army under General Oku the statistics by Hildebrandt concerning 21,800 wounded soldiers are:

Japan	Wounded by artillery	8 %
	Rifles and explosives	85 %
	Other than firearms	7 %
Russia	Wounded by shrapnel	13 %
	Rifles and explosives	86 %
	Other than firearms	0.5%

The diagnosis of fracture of bones depends mostly on Röntgen or x rays. There are three types of bone fracture:

1. Direct contact.
2. Perforation
3. Comminuted, produced usually by explosives.

1. *Fracture by contact.* A bullet coming from a distance of 3,000 or 4,000 metres usually produces a simple fracture and is insignificant; in proportion the damage is not extensive, and repair is easy.

2. *Fracture by perforation.* This is generally caused by small bullets, like Mannlicher, or by shrapnel from a distance going directly into the bone. Most fractures are of the perforating type, with a few small fragments.

3. *Compound or comminuted fracture.* This form is very grave, first, because of extensive damage, and, second, because of septic conditions, although I have seen cases having considerable purulent discharge, where union has taken place under careful and painstaking treatment.

SHRAPNEL.

French shells weigh over seven kilograms and contain 290 balls, each weighing 12 grams. The initial speed is 295 metres, and the radius while in action, at a distance of 3,500 metres, 170 metres. The balls are extremely dangerous and fatal. On the other hand, German shrapnel weighs over six kilograms, contains 300 balls, each weighing ten grams, has an initial speed of 465 metres, and its radius in action only 127 metres. This plainly shows the superiority of the French over the German shells and projectiles.

Within the distance mentioned, a shrapnel passing through the body often rests in the tissues. This was shown in many cases during the Turko-Balkan, Transvaal, and Manchurian campaigns. Hildebrandt estimates that fifty per cent. remain in the body, and when they come in contact with hard matter, like bones, these shrapnel cause fracture. One thing must be understood, however, viz., all the balls in projectiles have not the same velocity, so their penetration is in ratio.

The mitrailleuse.—This modern arm has not proved of so great an advantage as was expected, nor yet as serviceable as others. When the mitrailleuse is fired from a distance of 800 to 900 metres the wounds are very similar to those of Mannlicher bullets. According to the opinions of competent military men during this recent war, the belligerents were not able or did not have occasion to use it from the proper distance to prove its capacity, consequently we had but few soldiers wounded by the mitrailleuse in our hospital.

Wounds produced by cannon projectiles. Shrapnel balls compared with cannon projectiles are light, and frequently lose their force or some obstacle will arrest their danger, but their effect on marching soldiers is disheartening. On the lips of every Turkish soldier were the words "Bulgarian shrapnel." The wounds of artillery projectiles are terrible, tearing and ripping the muscles, and leaving great gaps, as though the parts were blown into pieces. Donegan, reporting the case of a soldier who was taken to the hospital, states that both thighs were crushed, and the right arm and chest literally smashed. Hildebrandt, viewing a young soldier eight days after an explosion, found missing a part of the right thorax, exposing lacerated pulmonary tissues.



FIG. 1.—Fracture of the tibia.

Gunshot injuries to joints.—Joint wounds which are both frequent and dangerous, are of two classes, penetrating and nonpenetrating, the latter including wounds and contusions of the overlying soft parts, extending down to the capsules or causing, secondarily, synovial inflammation, and fractures of the extremities of bones running *to,* but not *into* the adjoining articulation, unless the joint is widely opened or there is an escape of synovial fluid.

An early diagnosis of penetration cannot be made, even though the ball has passed in and out, and the line of direction seems to run through the articulation. In a few cases the ligaments or other periarticular structures cause deflection of the missiles, and on the other hand, because of the length and nature of the bullet track, there may be no outflow of the joint secretion. The chief danger, as in joint wounds otherwise caused, is that of the production of suppurative synovitis, with the result of local destruction, exhaustion, joint disease, or purulent infection. "Gunshot wounds of the articulations are more fatal than others," says Connor, "simply because they do more damage to the joint structure, and cause a greater amount of hemorrhage in the articular cavity."

Amputation is necessary when there is extensive damage to the soft parts. I had many cases of bullets lodging in the joints, without causing very great destruction, as may be observed in the x ray pictures (Figs. 1, 2, and 3). After I extracted the bullets the joints became normal. I have amputated, or rather disarticulated in a few cases, finding much suppuration; constitutional symptoms have followed.

Injuries to the shoulders.—Frequent injuries to the shoulder joints are almost always penetrating wounds, with fractures of one or both bones. Penetration, with osseous lesion, was reported in seventy-two cases during the Civil War. In my experience of such penetration wounds, both with and without fracture, I have not found in many splintering of the humerus up to its diaphysis. Generally the fissures run *up to* or *into* the epiphysis without primarily opening the articulation. I disarticulated in only one such case, that of a young soldier twenty-four years of age. In this case the bullet entered the anterior part of the arm, just at the articulation of the humerus and clavicle, passing through the joint and coming out at the middle of the scapula, penetrating this bone also.

Gunshot wounds of the elbow joint.—Like those of the shoulder, wounds of the elbow joint may be either accompanied or unaccompanied with fracture. Pariarticular wounds and contusions commonly cause synovial inflammation, afterward becoming suppurative. Elbow shot wounds are not especially grave, as far as life is concerned, the mortality being about fifteen to twenty per cent., but their functional value is a different matter, causing partial or complete ankylosis. I have resected the elbow joints of six soldiers, because of complete ankylosis, giving them movable joints with good results.

Gunshot wounds of the vertebræ.—I saw only four cases of gunshot wounds of the vertebræ. The spinal column may receive contusion, fracture, or penetration of the canal, afterward associated with lesion of the important structures of the neck, chest, or abdomen. Fractures may effect either the process or the body of a vertebra, and shot may penetrate or perforate, producing fissure running through to the posterior surface. Hemorrhage either outside or inside the theca may be associated with any of the forms of vertebral injury, and nervous disturbance and paralysis must follow laceration or division of the medulla.

A young Greek boy eleven years old was shot through the eleventh dorsal region. He had paralysis of the lower extremities and retention of urine and feces. The poor little fellow was in agony. I operated on the boy soldier, taking out the fragments of the process, and closed the wound. There was no material change in the paralysis, but he grew stronger. He was still in bed when I left the hospital.

Gunshot wounds of the abdomen with modern small calibre projectiles.—The wounds of viscera are small at the entrance and exit, so that digital exploration is difficult. Penetrating wounds should never be probed. It is safer to make an incision at the entrance, and follow the probe as a guide, thus saving the patient from possible infection or peritonitis. Recently, several prominent surgeons have asserted that in all cases celiotomy should be performed if penetration has taken place. In the absence of serious visceral lesions, penetrating wounds of the abdomen, though injurious and grave, sometimes end in recovery without operation, and those on whom celiotomy has been performed have died solely in consequence of the operation. Many spontaneous recoveries of penetrating gunshot wounds of the abdomen have been due to the absence of serious visceral lesions. During the Greco-Turkish and Turko-Balkan wars, several cases of gunshot wounds of the abdomen terminated favorably under a conservative treatment. In these cases the bullet entered the abdomen above the umbilicus, the most favorable position for the escape of the intestines from the missiles.

In two out of sixteen cases of penetrating wounds of the abdomen, the absence of visceral injuries to the gastrointestinal canal was demonstrated by the use of the hydrogen gas test. Both of these patients recovered without resort to celiotomy. Clinical experience has shown that operation should not be performed, because a bullet has penetrated the abdominal cavity.

Case VI. A young soldier was shot through the crest of the ilium, the shot crossing the abdominal cavity, and coming out at nearly the same point of the crest of the ilium, on the opposite side. General symptoms were slight shock and little abdominal pain; vomiting a little; pallor present; pulse slow and compressible; very little external hemorrhage; sweating; abdomen tympanitic; no evidence of fluid.

Within a few days he began to show peritonitis, and to discharge fecal matter. Evidently there was a fecal fistula. Under great care and continual treatment he got better, the fecal fistula closing up, and he was discharged from the hospital, cured.

Case VII. A young soldier shot through the abdomen below the umbilicus, showed all the clinical symptoms of peritonitis. Under a conservative treatment he recovered.

If a gunshot wound has penetrated the abdominal cavity, and general symptoms and signs indicate internal hemorrhage, no time should be lost, and celiotomy should immediately be performed. Three essential things are to be considered: 1. General condition of the patient; 2, internal hemorrhage; 3, wounds of the stomach and intestines large enough to permit extravasation. If the patient is pulseless and near death, operation is unjustifiable. Severe internal hemorrhage demands the interference of the surgeon. Visceral lesions of the gastrointestinal canal, large enough to permit extravasation, are with few exceptions, mortal wounds. Exploratory incision, entering the abdominal cavity, is justifiable to save the life of the patient.

Gunshot wounds of the arteries.—The large arteries of the extremities are to a considerable extent protected from gunshot perforation by the strength of their strong fibrous sheaths. By the toughness and extensibility of their own tunics, and the readiness with which they can slip aside from the track of gunshot missiles—due to the elastic condition of the arteries and because their contents are liquid—the large bloodvessels often escape uninjured and unlacerated.

In this way we can account for the fact that such arteries as the femoral, carotid, and brachial are often found to be practically uninjured, although lying directly in the path of the missiles. The amount of this elasticity or resiliency of the larg

arteries of a limb is much greater than is generally supposed.

Notwithstanding this wonderful resiliency of the arteries of the neck and extremities, which often enables them to escape severe injury, even when they appear to lie exactly in the path of wounds by gunshot, experience has shown that these arteries may be wounded in such a way as to have their calibre opened by musket or rifle ball and by fragments of shell. Bullets are much less likely to penetrate the arteries after they have passed through the compact structure of the bones of the extremities than they are before making such a passage through tissues.

Injuries to the vessels are: 1. Partial or incomplete division of the vessels; 2, complete division. Gunshot wounds of the great arteries of the abdomen and thorax fail to come under the attention of military surgeons, not because these vessels escape all injury, but because whenever they are injured, death quickly follows.

Case VIII. A soldier was shot through the zygomatic arch, the bullet falling in his mouth, piercing the hard palate. There was no hemorrhage the night he arrived at the hospital. Second day, a severe hemorrhage from nose and mouth, coming from a branch of internal maxillary. Recovery.

Case IX. Another soldier shot through the neck, bullet passing behind the trachea. Caused great deal of hemorrhage and expectorating of blood clots; patient breathed with difficulty. I performed tracheotomy. He was doing well, until a severe coughing spell, in the middle of the night, started a very severe hemorrhage. I immediately operated, and found the hemorrhage to be from the thyroid artery, but before I was able to complete the operation, the patient died on the table.

Case X. A young Kurdish soldier hit by shrapnel. A round ball entered near and under the right ear, shattering the right superior maxillary bone; hemorrhage the second day. Operated and found a partial opening near the origin of the external maxillary artery. Ligated the branch of external carotid artery. Recovery.

Case XI. A young soldier, six feet tall, weighing 180 pounds, was shot at Silvery, and left on the battlefield five days without surgical or medical aid. The bullet entered at the lateral part of right lung, three cm. below and inward, at the seventh rib, and came out posteriorly near the spine on the line of the eleventh rib. He was suffering from acute cystitis and painful urination. He also had fracture of the right leg, tibia and fibula. The diagnosis was injury to renal artery. Interesting points in the case were, 1, hemorrhage; 2, pain in the kidney region; 3, pain and rigidity over gallbladder region; 4, jaundice; 5, tenesmus.

February 12, 1913, I operated on him, making a large lumbar incision, and found a mass of blood clot, with the kidney imbedded in the mass. I found also oozing of the bile. After cleaning out the clots, I found the bleeding vessel. I was able to extract the kidney and ligate the artery and ureter. I left the clamps in the wound ten hours, and packed the cavity with iodoform gauze.

The amount of urine he passed within twenty-four hours, was from 1,500 to 2,000 grams. To my sorrow, however, the kidney did not function so well in the days that followed, and the patient gradually became restless, pneumonia set in, and he died four days after the operation.

Aneurysm from gunshot wounds.—This is quite common in war. I had a few cases of aneurysm of the popliteal artery. As known, this artery commences at the termination of the femoral, at the opening in the abductor magnus, and passing obliquely downward and outward, behind the knee to the lower border of the popliteus, divides into the anterior and tibial arteries. Gangrene is the principal danger in aneurysm in a lower extremity.

Case XII. A soldier was shot in the inner part of the knee below the internal tuberosity, shot coming out at the opposite side. Under lumbar anesthesia, I dissected the popliteal space, and found a small opening with considerable blood clot. Cutting both edges of the artery, I brought them together and stitched them. I was sure that circulation was established, so I closed the wound, and put the leg in a cast. The result was good.

Case XIII. I was obliged to ligate an artery on account of terrible laceration. Good result.

Case XIV. I was called to Omerly, a four hours' journey from Constantinople, and found the case to be one of femoral aneurysm. Operated, ligating the vessel. Had no further trouble.

Remarkable qualities of the human skin.—The peculiar distensibility, elasticity, and toughness of the skin are most marked when we examine severe injuries. These qualities of the tegumentary covering are continually exhibited in many ways, but are mostly demonstrated in gunshot wounds. We are all familiar with cases where bullets have entered the body with great force, traversing all the tissues including the bones, with ease, but which are found lying somewhere under the skin. The elasticity and resistance of the skin prevent the progress of the bullet. We have seen the same condition in a remarkable degree, on the integumentary parts of the body which have been subjected to sudden violent force from explosions of gunpowder or dynamite. At the extremities, where the bones are placed at comparatively little distance beneath the integument, the bones will frequently be crushed or comminuted, and strong muscles and tendons lacerated, yet scarcely any lesion will be exhibited in the skin on the opposite side, except redness and ecchymosis, and this is very often the result of a long fragment of fractured bone pushed through it.

The study of wounds and their complications have given us great and useful knowledge. In future wars we shall be better prepared to save human lives from the ravages of cannon ball and shrapnel, and we hope to be ready for every emergency which may confront us on the battlefield.

The sanitary condition of the Turkish army.—The Balkan war was a disagreeable surprise for Turkey, as the government never believed or expected a war with the Balkan countries. The events so rapidly and so unexpectedly followed one another that the Turkish army and navy were not able to provide the most necessary things, on account of an insufficient, unorganized, and unprepared medical and surgical corps. Conditions at the first part of the war were in a wretched and miserable state; no railroad facilities to carry the men to Adrianople, no possibility to sail over the water to go to Janina or Uskub or Manaster. Consequently the government was obliged to make Constantinople its central sanitary station.

Wounded soldiers arrived at the city within four or five days from Kirk Kilissé without dressings and even without the application of a first aid bandage; from Lulé Burgas, we received soldiers with dressings done in Tchorlu. Many wounded soldiers were pouring into Constantinople terribly lacerated and exhibiting symptoms of septicemia and gangrene.

The Turkish soldier is sober, sound, not excitable, with simple habits, temperate, exempt from the dangers of the leisure and pleasures of civilized life. He commits himself into the hand of destiny. It is surprising to see Turkish soldiers go under anes-

thesia without agitation of fear, enduring terrible pain without a murmur or complaint, during the whole period of his sickness. He is happy and smiling, often singing sweetly.

The power of recuperation is wonderful. I have seen many soldiers fatally shot, some of them suffering from acute peritonitis, but so hungry as to eat bread before arriving.

The hospitals were in good condition, especially Red Crescent hospitals. They were nearly able to accommodate the flood of patients, to treat them well surgically, medically, as well as dietetically. The Red Crescent, although only two years old, served during this war most magnificently.

CONCLUSIONS.

1. Both in theory and practice, surgery in war is similar to emergency practice in ordinary life.
2. The surgeon must give the same attention to, and take the same precautions against infection in the soldier, as in the ordinary man.
3. The fate of the wounded depends more or less on the men applying the first aid.
4. A surgeon must not attempt to disinfect a wound on the battlefield.
5. In emergency, operations must be performed in the field hospitals.
6. No probing for bullets must be made on the battlefield.
7. Tourniquets, for hemorrhage, must be applied for not more than four to six hours, as there is danger of gangrene.
8. The x ray is the most valuable diagnostic agent in war.
9. Gunshot wounds of the extremities demand conservative surgery.
10. Penetrating gunshot wounds of the skull indicate operative interference.
11. Gunshot wounds of the chest demand strict antisepsis.
12. Celiotomy is indicated in penetrating gunshot wounds of the abdomen.

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23 CHANDLER STREET.

FRACTURE OF THE LOWER END OF HUMERUS.

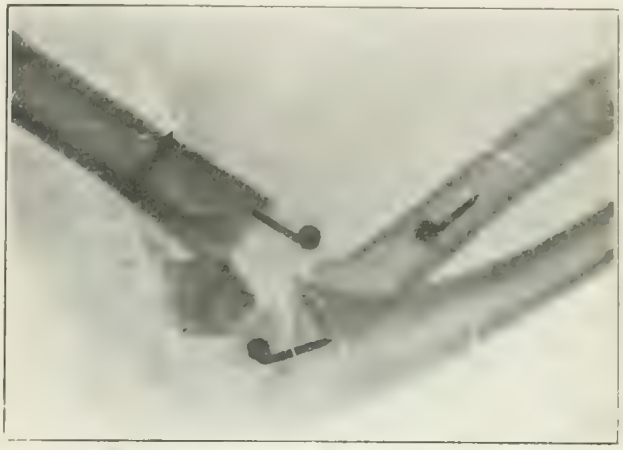
BY J. DAWSON WHITALL, M. D.,
Philadelphia.

The following history is interesting from the fact that following a comparatively slight fall from a bicycle, a boy of nine years struck the left elbow, with the result that the humerus was badly fractured and displaced (see Fig.).

The arm was placed in Jones's position, but the radial pulse became obliterated, so the position had to be abandoned. An anterior angular splint was then used with good result. Early passive motion, massage, the use of electricity have gained the boy a good useful arm.

CONCLUSIONS.

1. Occasionally a case cannot be dressed in Jones's position owing to compression of the brachial artery.
2. A useful joint function may be preserved with an anterior angular splint, *early* (at end of two weeks) passive motion, massage, and use of electricity.



[illegible]

I am indebted to Dr. M. K. Fisher for the x ray plate.

2124 NORTH TWENTIETH STREET.

AVULSION OF THE SCALP.

BY WILLIAM J. GILLETTE, M. D.,
Toledo.

Complete avulsion of the scalp is an accident not often encountered, but when met with presents so shocking and disfiguring an appearance as never to be forgotten. In spite of the magnitude of the injury, the mortality is exceedingly low, something like ten per cent. (Davis); no doubt the laxity of the subjacent areolar tissue, permitting the scalp to be easily torn away, is the reason. Deaths following this accident have been attributed to shock, hemorrhage, erysipelas, cerebritis, meningitis, and to long continued suppuration. W. Troy Bivings reported a case of Gussenbauer's in the *Philadelphia Medical Journal* for June 7, 1902, that of a girl sixteen years old who died in "a few days less than one year," probably from infection.

The wound invariably follows in outline the insertion of the occipitofrontalis. This accident is by far most frequent with the female on account of her long hair becoming easily caught in moving machinery. A number of cases in the male have been reported, however, where enraged animals have suddenly seized the scalp with the unsheathed claw and torn it from the head. A Chinaman had his cue caught in machinery and the scalp torn from his head.

Without skin grafting it sometimes takes years before the denuded area is completely covered with epithelium, and even when this happens the cicatrix is so poorly nourished that it is continually breaking down and ulcerating, and in these ulcerations epithelioma is likely to appear.

CASE. The case I have to report is that of a young girl aged seventeen years, who, working in a canning factory at Continental, Ohio, had her hair caught on an unprotected, rapidly revolving, vertical shaft as she was hurrying to leave the building at the close of the day's work.

The injury occurred on September 8, 1911, at 8 o'clock in the evening, and the girl was sent immediately by Dr. Harry Lewis and Doctor Watterson to Robinwood Hospital, in Toledo, where I saw her as soon as possible after her arrival or about 2 o'clock in the morning. At this time she was in a semicomatose condition and the shock was great. The accompanying photographs, taken about three weeks after the injury, show very well its extent. The loss of blood had not been great. The entire right ear, with the



Fig. 1. Avulsion of entire scalp, including part of right ear and tissue between the eyes.

exception of the lobule and part of the tragus, both eyebrows, and the entire scalp including tissue between the eyes half way down the nose (Fig. 1) was completely torn away. The right eyelid hung by a narrow flap of skin and tissue at the inner canthus. This flap was fortunately of sufficient size to nourish it, and I was able to restore the eyelid, although with imperfect function. The left ear attached to the triangular flap (Fig. 2) was lying downward and forward over the cheek. The skull over one fourth of its area was entirely bare, completely denuded of its periosteum. Immediately following the accident, the head had been enveloped with a thick layer of commercial cotton, to stop oozing and act as a protective. On the girl's entrance to the hospital this cotton was removed and the head was cleansed and dressed with such repair of structure as was possible. The triangular flap upon which the ear rested was brought into place and fastened there with long silk threads, passing over the top of the head and into the skin on the opposite side. The tissues near the flap would not hold a stitch at all. In spite of our attempts at sterilization, bichloride of mercury being employed, within a very short time or three or four days, a most severe infection developed with erysipelas. Her temperature reached 104° F. and she was very delirious and difficult to care for. As a result of her serious condition a month went by before she had recuperated sufficiently to make possible any attempt at skin grafting. At this time the forehead back as far as the denuded bone, was covered with Thiersch grafts taken from a sister with the result so commonly observed, that they seemed to do well for about three weeks and then entirely sloughed away. Grafts taken from another sister were then employed, likewise from a brother, but with like results. The question of the best manner of dealing with the large area of denuded bone came up. Noticing that granulations were freely springing up along the cranial sutures (plainly shown in Fig. 2), I decided to break away the denuded layer of bone with a chisel, that granulations might spring up from beneath, but I found that this was not at all necessary, for at the end of six weeks the outer plate loosened and came away almost entire without any assistance from me, leaving the area under it covered with granulations.

The patient's general condition remained bad for a long time, the granulations exuberant and unhealthy, but finally, after a prolonged use of tonics and continual application of weak solutions of tincture of iodine, she improved. Satisfied that the use of heterogenous grafts was but waste of time, I now began the use of grafts from her thighs. These took with apparently the greatest avidity and in four sittings the head was completely covered and healed. She left the hospital, cured, August 12, 1912, eleven months after the accident. At one period in addition to suppuration, she had repeated profuse hemorrhages that delayed greatly her protracted recovery. These hemorrhages often appeared apparently without cause and were with difficulty controlled. Frequently her nurse would find her asleep, the dressings and pillows saturated with blood. Eventually, however, she regained her health and full strength with no apparent tendency for the new scalp to break down at any point, and she now does her full share of work on a farm.

Reports of complete avulsion of the scalp have appeared in the literature from time to time, and Doctor Davis, of Baltimore, in 1910 collected ninety-one, including one of his own. Since then Flaherty reported a case in the *Annals of Surgery* for February, 1914. A review of these cases shows that only autodermic grafts are likely to live, that heterogenous grafts of whatever character do not



Fig. 2.—Another view of patient in Fig. 1, showing skull denuded of periosteum.

produce permanent skin. The time required for the cure of an injury of this kind by grafting will vary much. If the patient's condition is such that the application of grafts, immediately or within three or four days following the injury, is permissible, the time will be greatly shortened. Doctor Flaherty's patient left the hospital, cured, in

sixty-seven days. Another is reported as cured in seven months (Mellish, *Annals of Surgery*, November, 1904); another in twenty months (Irving's report, Gussenbauer, *Philadelphia Medical Journal*, June 7, 1902). Others are reported as having taken two or more years. Delay in healing is no doubt most frequently occasioned by the accident of infection and its sequelæ, suppuration and repeated hemorrhages. Full thickness grafts have been employed, but are not by any means necessary. We found that the very thinnest grafts did best, and these could be taken repeatedly from the same surface, a month or five weeks only intervening. Some of our grafts were cut from the same surface on three different occasions. The manner in which Nature without interference threw off, at the end of about six weeks, the entire outer plate of denuded bone, leaving a granulating surface, leads me to believe that the use of a trephine or other instrument to obtain a granulating surface, in such cases, is entirely unnecessary. Flaherty, in the report of his case, advocates a dry method of dealing with grafts and thinks it better than keeping them moist for a time. I employed the moist graft as I have for years, with results entirely satisfactory. It is very important, however, whichever method is employed, to have the surface upon which the graft is placed, carefully prepared and to be sure that there is no blood dyscrasia.



FIG. 3.—Patient eight months after leaving the hospital.

ROBINWOOD AND DELAWARE AVENUES.

ULCERATION OF THE STOMACH AND DUODENUM FROM THE MEDICAL STANDPOINT.

BY ARTHUR F. CHACE, A. M., M. D.,
New York.

At least one half of the cases of ulcer of the stomach and duodenum are not diagnosticated until post mortem. The autopsy records of the Massachusetts General Hospital show that but thirty-five per cent. of the cases of ulcer of the stomach were discovered before death. Dispensary patients suffering from gastric ulcer have been treated on an average by six physicians before coming to the hospital, without the suggestion of an ulcer having been made.

The cases operated in at the Mayo clinic show that ulcers of the stomach and duodenum have been present, on an average, twelve years; while in many of these cases, the diagnosis had not been made during this period. The analysis of one's failures in the treatment of stomach cases would probably show at least one third of them to be unrecognized cases of ulcer. The majority of the dyspeptics who have failed to improve under routine treatment and have finally been classified as neurasthenics will prove, after a more searching examination, to be cases of ulcer.

What is the reason of this failure on the part of physicians to diagnosticate ulcer? It is due to the nonrecognition of the atypical cases. The acute ulcers of the Dieulafoy type with hematemesis, or the chronic indurated ulcer of the Cruveilhier type with stenosis, give enough of the so called cardinal symptoms to make diagnosis easy. The severe hemorrhage in the former case and the continued vomiting in the latter immediately suggest ulcer; but if the physician waits for these classical symptoms of ulcer to develop before making a diagnosis he will overlook about one half of his cases. Hematemesis, it should be understood, occurs in only about ten to fifteen per cent. of the cases, and when it does occur, is more suggestive of cirrhosis of the liver than of ulcer. The vomiting occurs in only about one half of the cases; and vomiting in itself is more suggestive of organic stenosis or spasm of the pylorus than it is of ulcer.

Another reason for the failure to recognize cases of ulcer is the misconception of the cause of pain. The statement is often made that pain is produced by irritation of the raw surface of the ulcer by food. Animal experimentation shows this to be false, although it has been demonstrated that pain is caused by the spasm of the muscles in the stomach or duodenum due to the irritative effects of hydrochloric acid. While pain is not characteristic of ulcer it does signify muscular spasm; and this spasm may occur in structures which are made up of smooth muscle fibres, such as the bile ducts, the appendix, the cecum, the pancreatic ducts, the duodenum, and the stomach. It will thus be seen that pain is of value in the diagnosis of ulcer only when, after careful analysis, it is proved to be due to pylorospasm. Inasmuch as spasm of the pylorus determines the rate at which the stomach empties itself, it has a most important bearing upon the question of food retention. Retention of food and of gastric juice renders the gastric contents highly acid, and this hyperacidity will in turn predispose to the formation of an ulcer. Other cases of ulcer are unrecognized owing to the fact that physicians do not avail themselves of radiographic examinations, nor have the stools tested for occult blood. It should always be borne in mind that thirty-six per cent. of ulcer cases are associated with a diseased appendix, and that in fifteen per cent. of the cases, cholecystitis and cholelithiasis are present.

Uncomplicated ulcers in the same developmental stage, occurring in patients of like temperament, present substantially similar symptoms; but clinically we are confronted with the task of diagnosticating gastric ulcers in all stages of development, in varying positions, and in association with other

conditions, such as adhesions, cholecystitis, and appendicitis.

A somewhat detailed consideration of the classical symptoms of ulcer, together with a study of the newer methods of examination, will enable us to recognize some of the cases of ulcer which are now discovered for the first time on the operating table or post mortem. The histories of most cases of ulcer of the stomach have shown the presence, for a year or more, of digestive disturbances, consisting of belching, acid eructations, and burning sensations. The patients have usually had excellent appetites, and have overeaten. This has resulted in epigastric distress, which they, in turn, relieved by taking more food. These symptoms have gradually progressed until the postprandial discomfort has become painful; so that, finally, although the appetite was excellent, they were afraid to eat. Pyrosis increased in severity until the patient vomited after taking food. The tongue remained moist and red; and, as the trouble progressed, the pain became sharp and gnawing in character, and extended to the back. It was made worse by solid food, and relieved by alkalies.

Pain is the most constant symptom of ulcer, existing in about ninety per cent. of the cases. Five of its salient characteristics may here be mentioned: First, the pain has a definite relation to food ingestion, developing within three hours after the food has been taken; second, the distress is relieved by taking soft albuminous food or by alkalies; third, the associated symptoms, such as pyrosis or eructations, are relieved as soon as the pain disappears. The fact that all other symptoms are worse when the pain is severest, and that they are all relieved when the pain stops, is most suggestive of ulcer; fourth, epigastric distress appearing after midnight is very characteristic, particularly of duodenal ulcer; fifth, cases of ulcer, owing to the tendency to temporary healing, are characterized by periods of complete euphoria alternating with weeks of great distress. Each one of these points is of the greatest importance in making a diagnosis: *the pain arising from spasm of the bile or pancreatic ducts, appendix, or cecum, does not possess any one of the characteristics to which we have referred.*

Associated with the pain of ulcer, is marked epigastric tenderness, usually localized beneath the xiphoid to an area the size of a half dollar. Posteriorly there is also a tender area to the left of the ninth, tenth, and eleventh vertebræ. This point bears the name of Boas, who first called attention to it.

Vomiting occurs in about two thirds of the cases, coming on the first hour after meals. At first the vomitus consists of food, mucus, and gastric juice, but later it contains blood. Many cases have tarry stools; and in practically all the cases occult blood is found chemically in the feces during the active stage of the ulcer.

Starch is usually found in the form of dextrin in the test meals after ulcer; and the digestion of proteid is usually rapid, owing to the increased amount of gastric juice. Hypersecretion is more often associated with ulcer than hyperchlorhydria. Over seventy-five per cent. of acute ulcers occur ring in young people have an increased amount of hydrochloric acid in the stomach after an Ewald test meal, sarcinæ and occult blood being often found in the gastric contents; while in the chronic ulcers of older people, the gastric acidity is apt to be low. From the diagnostic standpoint, the tests for the motor functions of the stomach are of more value than those of the secretory. William J. Mayo believes that the finding of small particles of food in the stomach, eight to twelve hours after meals, is the most important diagnostic sign of ulcer, and is also an indication for surgical interference.

The thread impregnation test devised by Doctor Einhorn, is of value, not only in diagnosticating ulcer, but also in locating it, although it is unfortunate that we occasionally obtain blood stains in cases where we can positively rule out the possibility of ulcer.

The fluoroscope shows a break in the peristaltic wave at the site of the ulcer. The x ray is also of value in noting an adherence of bismuth to the ulcer six hours after a bismuth meal, although the faintness of the bismuth shadow in small ulcers renders this method of slight value. The gastroscope is of limited value in localizing ulcer, owing to the danger attendant on its use. Bonninger found that the introduction of 200 c.c. decinormal solution of hydrochloric acid through a tube into the stomach produced pain in cases of ulcer. In our hands this diagnostic sign has not been constant enough to warrant its use.

We may summarize by saying that the suggestive symptoms of ulcer are the existence of characteristic pain, vomiting, localized areas of tenderness in the epigastrium and over Boas point in the back, and hypersecretion; and that confirmatory signs are found in the presence of blood in the vomitus or in the stools; a break in the peristaltic wave in the x ray pictures; the presence of food particles in the stomach twelve hours after meals. It should be remembered that many cases of ulcer remain latent throughout their entire course; and, as Van Valzah says, "there is no anatomical disease of the stomach, the clinical expression of which is more variable than that of gastric ulcer." Leube wisely says, "the diagnosis can occasionally be made solely by the efficacy or the fruitlessness of a specific treatment for ulcer." A good rule is to give all doubtful cases the treatment of ulcer.

The conditions from which ulcer has to be differentiated, are gastric neurosis, cholelithiasis, gastric crisis of locomotor ataxia, and cancer. One of the greatest difficulties in diagnosticating the foregoing conditions is the fact that gastric ulcer can exist simultaneously with any of them. Gastric neuroses may be differentiated by the irregularity of symptoms, the absence of blood in the vomitus or stools, and the negative character of the x ray examination. In gallstones the pain bears no definite relation to the meals, and often radiates to the right shoulder. Tenderness over the gallbladder, and to the right of the ninth, tenth, and eleventh vertebræ posteriorly, is suggestive of gallstones; in cholelithiasis, moreover, we are apt to have hypersensitiveness over Head's zone, and other signs, such as Moynihan's and Murphy's.

Each year one or two cases of locomotor ataxia with gastric crises are sent to the hospital with the diagnosis of gastric ulcer. The absence of occult blood in the stools, the negative x ray findings, the absence of knee-jerks, the Argyll-Robertson pupils, Romberg's symptom, and occasionally a positive Wassermann reaction clear up the diagnosis.

The differential diagnosis between early ulcers and cancer may be made by the acuteness of the symptoms and by the hypersecretion in ulcer. Cancer has a more insidious onset. Owing to the tendency of chronic ulcers to become malignant, and to the impossibility of determining the exact time when this change takes place, it is advisable to operate in all cases of chronic ulcer which resist medical treatment.

Successful medical treatment of ulcer depends upon early diagnosis. When ulcers are small and their edges are soft and contractile, they respond quickly to medical measures, but if they are not diagnosed early, they become hard, and their edges become indurated, and they not only resist medication but become surgical cases. When we realize that statistics show most ulcers to have probably existed unrecognized for six years or more, and that these old ulcers are the basis of a very large number of cancers, the great importance of early diagnosis becomes apparent. By the use of the modern means of diagnosis, it is possible to discover practically every case of ulcer in its incipiency. In the medical treatment of ulcer the modified Lenhartz regime is gradually replacing the Leube-Ziemssen method. It is efficacious in that under it, the patient is enabled to gain weight and strength. The medication consists in giving large doses of bismuth subnitrate, which inhibits secretion; which protects the ulcer from the irritating action of the gastric contents; and, by its astringent and antiseptic qualities, materially aids in the healing of the ulcer.

393 West End Avenue.

FATAL ACCIDENTS FOLLOWING THE INJECTION OF ANTIMENINGITIS SERUM.

By S. P. Kramer, M. D.,
Cincinnati,
Surgeon, Cincinnati Hospital.

In March, 1913, before the Academy of Medicine of Cincinnati, I reported a number of cases of respiratory paralysis following the injection of antimeningitis serum. Because of the similarity of these accidents to those following the lumbar subdural injection of cocaine, and as the result of an experimental investigation, I concluded that the accident was due to the phenol contained in the serum as a preservative. The full results of the clinical and experimental investigation were published in the *Journal A. M. A.* for May 3, 1913.

The striking symptom in all the cases observed by other clinicians in this country and by myself was a sudden paralysis of respiration coming on in from five to twenty minutes after the injection. In the *Journal A. M. A.* for June 21, 1913, Dr. Simon Flexner discusses the subject. The experimental data submitted by me he did not think worthy of discussion.

An important objection, if the facts were as given, was made by him in the following statement: "The antimeningitis serum produced in France is prepared at the Pasteur Institute by Doctor Dopter and is called by his name. It is supplied in sterile containers without preservative, and is merely stored for a time before use in order to remove the complement, and reduce the risks of ordinary serum disease; and yet in rare instances, serious symptoms *recalling those described by Doctor Kramer,* have followed the administration of Dopter's serum." Doctor Flexner gives also the literary references in which these cases have been described. The description of the cases is, however, not given, simply the statement that they had "serious symptoms, recalling those described by Doctor Kramer."

I desire to give here the clinical histories of these cases.

Hutinel (*Presse médicale,* XVIII, 497, 1910) reports two cases.

Case I. One in a child, aged six and one half years, with meningococci in the cerebrospinal fluid, received April 18th, thirty c. c. of serum, on April 22d, thirty c. c., and on April 25th, thirty c. c. A short time after the last injection, convulsions developed, followed by coma and death six hours after the last injection.



Fig. 1.—Tracing obtained by injecting 2 c. c. of antimeningitis serum into the left vertebral artery of a dog weighing 7½ pounds. In all experiments the blood pressure was taken from the femoral artery by a manometer. The respiration was recorded by means of a Paul Bert pneumograph, the upstroke representing inspiration. The mark on the lower line shows the point at which the injection was made.

Case II. The second case was that of a tuberculous child, aged three and one half years. June 22d, twenty c. c. of serum were injected; June 23d, thirty c. c., and June 24th, twenty-five c. c. On the evening following the third injection the child showed a serum eruption. June 29th, thirty c. c. of serum were injected. Five hours after the last injection the child's temperature rose and the general condition became worse. Lumbar puncture yielded thirty c. c. of fluid. Almost immediately after the last puncture the child manifested opisthotonos, followed by coma. The next day, June 30th, the child was apathetic, temperature 38.4° C. in the morning and 37.4° C. in the evening. The next day, July 1st, the temperature rose to 40° C. and the following day the child was removed by the parents in a dying condition.

Chevrel and Bourdinière (*L'hygiène générale et appliquée,* V, 20, 1910) report the following case:

Case III. March 8, 1910, a female child, aged between nine and ten years, with severe meningitis, was admitted, with meningococci present. On the sixth day of the disease, twenty c. c. of antimeningitis serum were injected in the subdural space; on the eleventh day, ten c. c.; on the sixteenth day, ten; on the twenty-first day, ten; on the twenty-fifth day, twenty, and on the fiftieth day, fifteen c. c. A few hours after the last injection there occurred edema, painful swelling of the joints, especially of the upper extremities, vomiting, return of the intense headache, followed rapidly by death. These authors called the attack [illegible]

Case IV. Levy (*Klinisches Jahrbuch,* XXV, [illegible] 1911) describes the case of a female child, aged one and one half year, in whom meningococci were present. On February 22, 1908, twenty c. c. of antimeningitis serum were injected, on February 23d twenty [illegible]

and on February 27th, thirty c. c. On March 3d, the thirty-fifth day of the disease, thirty c. c. of serum were injected. Soon after the last injection the child became quite sick and cyanotic, although it passed a good night. The next day, March 4, 1908, at 8 a. m., the child had convulsions with gasping breathing and died twenty-six hours after the last injection. Levy ascribes the death to serum disease (*Serum Krankheit*).

I submit that the histories of these cases does not "recall the symptoms described by Doctor Kramer." I described a sudden paralysis of respiration without dyspnea, coming on in from five to twenty minutes after the lumbar injection of serum containing tricresol, exactly as sometimes happens when cocaine is injected into the subdural space. This I held and still hold to be due to an acute intoxication of the respiratory centre in the medulla by phenol, a well known nerve poison. The cases herein reported at length, following the injection of Dopter's serum (without tricresol), are typical cases of serum disease without respiratory par-

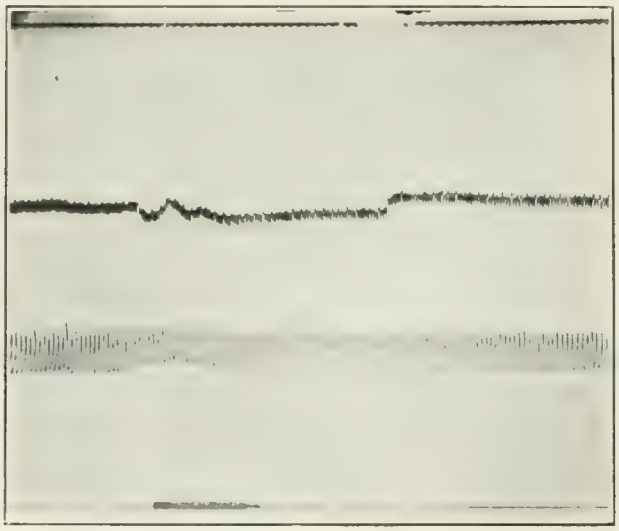


Fig. 2.—Tracing obtained by injecting 2 c.c. of blood serum containing 1 in 1,000 formaldehyde into the right vertebral artery of a dog weighing ten pounds. Blood pressure, 110 m.m. Upper tracing shows blood pressure, lower tracing, respiration.

alysis, are held to be such by the authors who reported them and by Doctor Dopter himself.

Owing to what has gone before, the author desires again most fervently to warn the profession against injecting serum containing tricresol into the subarachnoid space. As the French distribute serum without preservative, it does not seem to be asking an impossibility of the manufacturers to furnish serum without phenols.

The two following summaries, compiled from the investigation of Dr. A. H. Parmelee (*Journal A. M. A.*, March 1, 1913) and from the author's investigation of the cases at the Cincinnati Hospital, show the percentage of risk from respiratory paralysis following the injection of serum containing tricresol:

Dr. Arthur H. Parmelee (*Journal A. M. A.*, March 1, 1913, p. 659) reports 224 cases treated with serum in Kansas City, January 1 to June 1, 1913: Total mortality, 52.6 per cent.; respiratory paralysis following injection of serum, ten cases or 4.46 per cent.

Ninety-six cases of meningitis were treated with serum at Cincinnati Hospital from April 1, 1912, to January 1, 1913. The total mortality was 56.2 per cent; respiratory paralysis followed injection in seven cases or 7.29 per cent.

The two tracings show that serum containing one in 1,000 formaldehyde may be employed without danger to the vital centres. This amount of formaldehyde will preserve serum. I am not in a position to determine whether it will affect the bactericidal properties of antimeningitis serum.

22 West Seventh Street.

PREDETERMINATION OF SEX.

By Israel Bram, M. D.,
Philadelphia,
Instructor in Physical Diagnosis, Medico-Chirurgical College.

Numerous theories have been advanced from time to time to solve the mystery of the determination of sex in the unborn being. The degree of potency of one or the other parent, hereditary influences, season of the year at the time of conception, the intellectual status of one or both parents, the age of the parents, the state of mind of the parents at the time of the conjugal embrace, the degree of amativeness during that time, emotional stress, the presence or absence of diseases of one or more organs (particularly the adrenal glands) in the maternal economy, the quality or quantity of food of the mother, and numerous other theories have been advanced as factors in the determination of whether the resulting infant will be male or female.

The results of my investigations are the outcome of the utilization of a combination and modification of the following two most plausible theories:

1. Sex in offspring is the outcome of a contest between the spermatazoon and the ovum (Weill). If the spermatazoon is successful, the outcome is a male; if the ovum, the offspring is a female. This contest varies in one direction or the other by the influence of food. An excess of nourishment in the mother may decide in favor of a female, and a deficiency in the production of a male. Consequently, generous quantities of food with an excess of albuminous nitrogenous substances may decide at conception in favor of a baby girl, and a scanty diet with a very low proteid allowance in favor of a baby boy. In support of this theory it is advanced that in times of financial panic, war, etc., when a plentiful quantity of rich, nitrogenous food is not obtainable, male infants are in preponderance.

2. Sex is determined by the activity of the adrenal glands of the prospective mother (R. Robinson). In support of this theory it is asserted that in a large majority of women who present evident signs of adrenal insufficiency (pigmentation of the skin, marked gastric disturbances, headaches, etc.), the offspring are female. The use of the extract of suprarenal gland or something which would stimulate the adrenal glands to increased physiological function, seems to be indicated in this class of cases.

Among my obstetrical patients during the past two years, there were a considerable number who manifested their eagerness to give birth to male children. Some were primiparæ, while others had already one or more female children. In an effort to test the value of my views concerning the predetermination of sex, I selected thirty of these patients, twenty of whom had reported to me during the first two months of pregnancy, explaining the

harmlessness of the treatment that I was about to offer and the possibility of having their desires fulfilled. Of the ten who had reported to me *after* the second month of pregnancy, six gave birth to male children. The remaining twenty who had reported *during* the first two months all gave birth to *male* children. The ages of these twenty women vary from nineteen to thirty-six years; and their obstetrical records were as follows:

Four were primiparæ.
Five had each previously given birth to three girls.
Five had each previously given birth to two girls.
One had previously given birth to two girls and one boy.
One had previously given birth to two girls and two boys.
One had previously given birth to five girls and one boy.
Two had previously given birth to three girls and one boy.
One had previously given birth to four girls.
In the last case the outcome was twin boys.

These results strongly indicate that the experiment employed was highly successful, and that we probably have at our disposal a means of controlling at will the sex of the unborn infant if the prospective mother present herself early enough to the obstetrician, i. e., on the first manifestations of pregnancy.

According to theories No. 1 and 2, if a boy is desired, the treatment is essentially dietary and medicinal, and is persisted in until the fourth or fifth month of pregnancy, when it may be discontinued. Albuminous, nitrogenous substances, such as eggs, meat, fish, cheese, etc., were forbidden; the diet consisting essentially of such substances as cereals, fruits, potatoes, milk, buttermilk, and butter. Plenty of water was insisted upon to keep the kidneys active. In addition the patient was given after each meal a capsule consisting of two grains of the extract of suprarenal gland, combined with four grains of lecithin. The reason for administering the extract of suprarenal gland has already been outlined in theory No. 2.

About three years ago, I had under observation a typical case of Addison's disease, in which, though the extract of suprarenal gland alone resulted in little or no benefit, the symptoms were markedly ameliorated for many months by the addition of lecithin. I have also obtained excellent results in marked cases of chloasma by the administration of the extract of suprarenal gland with lecithin. It is a well known fact that the combination of the iodide of potassium with the extract of thyroid gland is a desirable one, as the former substance seems to enhance the action of the latter to considerable degree. The combination of lecithin with the extract of the suprarenal gland seems likewise to increase the action of the latter in cases where there is adrenal insufficiency. It is highly possible, also, that lecithin stimulates the normal adrenal gland to increased function.

To summarize, it is safe to say that we probably have at our disposal a definite means for predetermination of the male sex; that the essentials in the treatment are: 1. It should be instituted immediately after the woman has missed her period; 2, foods rich in albuminous nitrogenous elements should be interdicted; 3, the administration of the extract of suprarenal gland combined with lecithin is required.

1714 North Seventh Street.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXLVI.—How do you treat scarlet fever? (Closed.)

CXLVII.—How do you treat tetanus? (Answers due not later than June 15th.)

CXLVIII.—How do you treat sunstroke and heat exhaustion? (Answers due not later than July 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The Prize of $25 for the best essay submitted in answer to Question CXLV was awarded to Dr. Lylburn C. Downing, of Roanoke, Va., whose article appears below.

PRIZE QUESTION NO. CXLV.

THE TREATMENT OF ALCOHOLIC CIRRHOSIS OF THE LIVER.

By Lylburn C. Downing, M. D.,
Roanoke, Va.

Alcoholic cirrhosis, with its resulting obstruction to the terminal venules of the portal system, rarely comes to the physician as a disease *per se*, but usually is accompanied by important systemic changes. Alcohol is the chief cause, though its mode of action is still doubtful. The changes are occasionally senile in character, frequently following lives of intemperate and uncurbed desires.

We frequently find the Noguchi test giving positive reactions; hypofunction of the kidneys present, evidences of chronic tuberculosis not uncommon, while increased blood pressure and venous engorgement make no secret of an overtaxed heart. Consequently, if these factors are not kept continually in mind, simple treatment of the resulting symptoms will be no less than criminal indifference.

Diet is of momentous importance, from 1,600 to 1,800 calories being necessary when our patient is confined to bed, and up to 2,500 in the ambulatory treatment. It must be salt free, as retention of the chlorides is invariably associated with effusions in some form. Milk in quantities of about two quarts in each twenty-four hours, if well borne, is ideal. It is well to alternate with peptonized milk, kumyss, simple custards, and broths. Green vegetables in moderation and an egg may be permitted in the earlier stages. Tea, coffee, alcohol and condiments must be prohibited. Water given in moderate amounts at frequent intervals brings better results than either severe restriction or promiscuous drinking of large quantities.

Rest in bed is always advisable at first, and under this simple measure the symptoms often show an immediate abatement. Pure fresh air and sunlight are the best agents to tone up the general resistance

Care must be taken of the skin, to keep the pores open and free from abrasions. In those with syphilitic taint, an injection of neosalvarsan in full dose, followed by potassium iodide in doses of one gram or more, three times daily, has given wonderful results.

Active purgation with compound jalap powder and noneffervescing salines must be induced at regular intervals. Broken doses of calomel and soda may also be cautiously used.

Betanaphthol in doses of 0.25 gram or hexamethylenamine in 0.5 gram doses three times a day, will prevent intestinal putrefaction and delay or ward off toxemia of microbic origin. Toxic symptoms, once established, are combated by hydrotherapy, baths, sponges, and hot packs.

Morphine, hypodermically, in doses of one eighth to one quarter grain serves to quiet the delirium and to stimulate the heart. Epistaxis, a frequent symptom, is to be controlled by cold locally, or a nasal spray of hydrogen dioxide fifty per cent., cold. When occurring in patients of over thirty years, nose bleeding is often a good thing, as it relieves cerebral congestion through the emissary veins, and consequently, unless it reaches alarming proportions, it is to be let alone.

Ice cold water or cracked ice, along with an occasional gastric lavage, will relieve most of the nausea, vomiting, or hematemesis. Most drugs given on an already irritated and congested stomach are more likely to aggravate than to relieve these symptoms.

Hemorrhoids and edema of the lower extremities are best treated with the recumbent posture and general measures. Ascites is a grave as well as aggravating symptom, especially when occurring in large amounts or suddenly, due to thrombosis of the portal vein. The general measures of salt free diet, diaphoresis, and active hydragogue catharsis still remain the safest, even though the slowest and least sensational. The use of the extract of ergot to equalize the circulation and relieve splanchnic congestion is of more value in women than in men.

Paracentesis abdominis, done very early in the disease, with only moderate amounts of fluid, is borne well. It must be performed under the most rigid aseptic technic, and the effusion drawn off very slowly, allowing at least three quarters to one hour for the operation. A snug binder should be immediately applied. Tapping, where the fluid is excessive or the disease of long standing, while it certainly gives temporary relief, will be followed by death in from twenty-four hours to as many days, exceptions however having been noted.

Simple celiotomy and epiplopexy should be attempted upon the younger subjects only, and with caution. Anastomosis of the portal vein with the inferior vena cava, even if an operative recovery could be assured, is against sound physiological principles and is heartily condemned.

Prophylaxis against alcoholic cirrhosis consists in a light nutritious diet at regular hours, moderate systematized exercises, cold baths upon arising, regular hours for evacuation of the bowels, avoidance of all excesses, sometimes a change of climate and associates, and, last but not least, in uncompromising abstinence from all alcoholic beverages.

Methodist Hospital.

Dr. Jesse D. Friedmann, of New York, remarks:

In considering the treatment of a disease with so unfavorable a prognosis as alcoholic cirrhosis of the liver, it is obvious that the earlier the case is treated, the more efficacious will be our efforts. Alcohol in itself does not produce cirrhosis, but does so by depressing the cells of the gastrointestinal tract, thus favoring the excessive entry of bacteria or toxic substances from the intestinal canal into the portal circulation. By directing part of our attention to the disturbances of the stomach and intestine, we have begun our fight against the causative agent—alcohol. Our treatment may be directed to the symptoms, 1, referable to gastric and intestinal disturbances; 2, those referable to disturbances of circulation; and, 3, conditions referable to disturbed metabolism and disturbed liver function.

In considering the first class, the hygiene of the patient is to be attended to, by fresh air, proper clothing, etc. As to diet, our aim should be to relieve the work of the liver. Early in the disease a milk diet, later a mixed one, which should be easily assimilable, unirritating, and unfermenting. Milk or its substitutes (junket, buttermilk, and kumyss), carbohydrates, as cereals, potatoes, etc., and vegetables, fish, and fruit are indicated. Proteids are to be given with care and in small amounts, while highly spiced foods, as mustard, pepper, horseradish, are contraindicated. Alcohol is to be interdicted, even beer, also tea or coffee. The patient should be enlightened upon the evil consequences of worshipping at the shrine of Bacchus. If necessary, however, I order small amounts taken during or after meals well diluted. One should also avoid drugs containing alcohol.

Constipation in these patients is usually alleviated by salines as Rochelle salts or sodium phosphate, or milk of magnesia or calomel (an intestinal antiseptic and diuretic). If the stools show a deficiency of bile, I prescribe ox gall. Intestinal antiseptics are to be used, as salol or betanaphthol.

Dyspepsia and flatulency are treated accordingly, a useful combination being:

℞ Lactis magnesiæ, ... ℥i;
Sodii bromidi, ... ʒii;
Tincturæ belladonnæ, ... ʒii;
Misturæ rhei et sodæ, q. s. . . . . ʒiii.
M. Sig.: One dram after meals.

If a hyperchlorhydria is present, give sodium bicarbonate or rhubarb and soda; if achylia, use dilute hydrochloric acid well diluted. Nausea and vomiting are benefited by cerium oxalate combined with belladonna, cannabis indica, and sodium bicarbonate. A combination of the bitters, as nux vomica, gentian, and capsicum, is beneficial.

Hematemesis is a result of rupture of esophageal varices, depending upon a disturbance in the collateral circulation. The patient should be put at rest, no food by mouth, and ice given to swallow. A hypodermic injection of morphine should be given. If bleeding continues, give horse serum beneath the skin, or antidiphtheritic serum may be used. It may be necessary to reduce the blood pressure with amyl nitrite or nitroglycerin.

Hemorrhoids, if troublesome, can be surgically treated. When ascites or edema appears, nothing permanent can be accomplished with diuretics, unless the organs involved are still capable of function.

The amount of fluid intake is restricted, a salt poor or free diet prescribed, and the saline cathartics given. In regard to diuretics, the fresh infusion of digitalis or digitalis combined with calomel, or squills will be found of some benefit. If these measures are unsuccessful, as will usually be found the case, we have to resort to surgical means of relieving the ascites, when the latter is producing discomfort or interference with heart, lungs, etc. A paracentesis abdominis or a Talma operation (omentopexy) is undertaken, the latter to set up artificial peritoneal adhesions, thus increasing the collateral circulation between the systemic and portal systems of veins. In regard to disturbed metabolic and liver function, organotherapy (liver extract) has been tried. Wasting of the patient may necessitate rectal feeding. Jaundice and nervous manifestations are usually terminal.

In conclusion, our aim should be to prevent the further production of connective tissue in the liver, eliminate the etiological factor (alcohol), and maintain the patient's gastrointestinal vitality, but at best our treatment is only palliative and seldom curative.

Therapeutic Notes.

New Physiological Saline Solutions.—B. Schiassi, in *Semaine médicale* for December 10, 1913, asserts that the ordinary 0.75 per cent. sodium chloride solution is capable, in cases already in a grave condition, of causing a progressive adynamia so marked as to render the use of this solution in many instances inadvisable. In the insane hospital at Bologna, repeated copious injections of this solution have constantly been observed to exert a sedative action in restless patients. These effects are in all probability due to removal of other salts, especially those of calcium, from the tissues. For this reason the author advocates the employment in practical medicine and surgery of "physiologically balanced" solutions of the type of Locke's solution:

℞ Sodium chloride, ...gr. cxl (9 grams);
Potassium chloride, ...gr. 5/4 (0.075 gram);
Calcium chloride, ..
Sodium bicarbonate, ..of each gr. iss (0.1 gram);
Glucose, ...gr. xv (1 gram);
Distilled water, ...Oii (1000 grams).
Make into a solution.

Preferable to the preceding, however, is, in his estimation, a modified Locke's solution of which he presents the following original formula:

℞ Sodium chloride (C. P.).....gr. c (6.5 grams);
Potassium chloride, ...gr. v (0.3 gram);
Calcium chloride (desiccated),....gr. xv (1 gram);
Sodium bicarbonate, ...gr. viiss (0.5 gram);
Glucose, ...gr. xxiiss (1.5 gram);
Distilled water, ...Oii (1000 grams).
Make into a solution.

In this solution the unnecessarily high proportion of sodium chloride in Locke's formula, which may cause renal irritation, has been reduced. The sodium bicarbonate is increased to raise the alkaline resources of the body in the many surgical cases presenting a tendency toward acidosis. The calcium is greatly augmented, not only to procure the tonic effect of this element, but to improve the coagulability of the blood in operative cases. The amount of calcium chloride in the formula might even be increased to 30 or 45 grains (2 or 3 grams) where an especially prompt arrest of hemorrhage is necessary. The glucose is increased to 1.5 per mille—a ratio somewhat above the maximum of this substance found in normal blood serum (1.05 per mille)—in order to prevent acidosis in patients starved before operation. The solution referred to is specifically stated by the author to be for subcutaneous or intravenous use. Larger percentages of glucose than that given may prove harmful when large amounts of solution are given by hypodermoclysis. When the rectal route is to be employed, on the other hand, there is no objection to including a much larger amount of glucose, as the latter reaches the liver first, and only gradually passes into the general circulation. The formula recommended by Schiassi for the rectal "drip" method of administration is:

℞ Sodium chloride, ...gr. c (6.5 grams);
Potassium chloride, ...gr. v (0.3 gram);
Calcium chloride (desiccated), ...gr. xv (1 gram);
Sodium bicarbonate, ...gr. viiss (0.5 gram);
Glucose, ...ʒiss (50 grams);
Alcohol, ...ʒss (15 grams);
Distilled water, ...Oii (1000 grams).
Make into a solution.

The diuretic, cardiotonic, and nutritive properties of glucose are thus easily availed of. The alcohol is added because it favors absorption of the solution by the intestine. The sodium bicarbonate not only tends to counteract acidosis, but favors the ionic dissociation of the other salts in the solution.

In cases of acute hemorrhage, e. g., in gastric or intestinal ulcer, hemoptysis, ruptured ectopic gestation sac, etc., Schiassi advises that the following solution be given by hypodermoclysis in fractional amounts of 10 to 13 ounces (300 to 400 c. c.) each:

℞ Sodium chloride, ...gr. c (6.5 grams);
Potassium chloride, ...gr. v (0.3 grams);
Calcium chloride (desiccated),..gr. xxx (2 grams);
Sodium bicarbonate, ...gr. viiss (0.5 gram);
Glucose, ...gr. xxiiss (1.5 gram);
Gelatin (10 per cent.), ...ʒxii (50 grams);
Distilled water, ...Oii (1000 grams).
Make into a solution.

Salvarsan in Amebic Dysentery and Amebiasis.—C. M. Wenn, in the *Proceedings of the Canal Zone Medical Association*, v, 1, reports on a series of eleven cases of amebic dysentery of varying severity, and one case of intestinal amebiasis without diarrhea, in which injections of 0.6 gram of salvarsan intravenously appeared to yield excellent results. In all the cases but one the number of stools a day was reduced by one third to three fourths in twenty-four hours and the amebas disappeared from the stools in twenty-four to seventy-two hours. Within twenty-four hours, moreover, the evacuations changed from a mixture of pus and blood to stools having the greenish color of bile. Arsenic was demonstrable in the urine and stools as early as five hours and as late as eighteen days after administration. The authors consider it demonstrated that salvarsan can be introduced into the circulating blood in sufficient strength to kill the amebas without at the same time endangering the host.

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EDITORS

CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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THE MEDICAL SIDE OF SEA CALAMITIES.

The rapidity with which the *Empress of Ireland* was sunk by the *Storstad*, i. e., in fourteen minutes, recalls the calamity that befell, in 1895, the North German Lloyd steamer *Elbe*, which, when struck amidship by the *Crathie*, went down in twenty minutes. This recent disaster only serves to illustrate anew the fact that, notwithstanding modern improvements, no more today than twenty years ago, are ships adequately protected against serious collisions. If the hull at the water line is ruptured to any marked extent, the water rushes in, and, in spite of watertight bulkheads, throws the ship on her beam ends and promptly sinks her. This was the case with the battleship *Victoria* in 1893, the steamer *Monroe* only a few months ago, and the *Empress of Ireland* last week.

Other distressing features are emphasized by the recent disaster; it shows clearly that the mortality is growing apace with the size of the ships. The *Elbe* of 4,500 tons lost 334 lives; the *Bourgogne* of 7,000 tons, 584; the *Empress of Ireland* of 14,000 tons, 959. What such a collision would mean with one of the recently constructed giants, capable of carrying 5,000 persons, as the recipient of the blow, is suggested by the 1,500 victims of the *Titanic*. Again, colliers, freight steamers, etc., are steadily increasing in number, and while on passenger ships the salient purpose of the commander is to safeguard the lives entrusted to him, that of the tramp or collier captain is to reach his destination as soon as possible, to reduce the expenses of a given voyage, and make as many trips as he can between yearly inventories. The ocean pathways are thus increasingly being filled with craft which correspondingly augment the dangers of navigation for passenger ships.

Modern appliances being inadequate to prevent the heavy toll of life that the sea demands, could medical science intervene to reduce at least the proportion of lives sacrificed? It appears to us that such may be the case.

A striking feature of the *Titanic* disaster was that practically all of its 1,500 victims, though kept from drowning by life preservers, died of exposure. In the case of the *Empress of Ireland*, many of the deaths among those who were able to leave the ship are also ascribed to this cause. Shock due to exhaustion of the vasomotor centre, violent constriction of the peripheral arterioles with accumulation of blood in the splanchnic area, and other explanations have been vouchsafed, but they have failed in various particulars. Modern research, however, has furnished data which, beside explaining the morbid process, suggest means to prevent it. Briefly, it has been shown that tissue metabolism is carried on in part by ferments. As the activity of these ferments is dependent upon the temperature to which they are subjected (within, of course, certain limits), prolonged exposure to cold so reduces their activity that the vital process, when the minimum limit is reached, can no longer be carried on.

From the practical viewpoint, this interpretation, while conforming to the obvious fact that cold is the pathogenic agent, explains its effects in a simplified way, viz., as excessive heat elimination. This in turn points to the ordinary life preserver as totally inadequate in northern latitudes to save life, unless the exposed individual is soon removed from the very cold water in which his body is steadily losing its vital heat, as this form of energy might well be termed. To avoid this, beside being constructed so as to prevent drowning, the life preserver should form part of a hooded garment covering all but the face and fastened tightly around the chin. While impermeable to water (oil skin, for instance), this garment would be thickly lined with wool to prevent heat elimination; readily slipped on like a union suit, it would eliminate the danger of death from exposure. The newer interpretation suggests also that death from exposure may only be apparent, owing to inhibited or slowed cellular

metabolism from excessive heat elimination, which heat, frictions, hot saline enteroclysis and hypodermoclysis, and artificial respiration, promptly applied, might counteract.

THE HYGIENE OF AVIATION.

The aeroplane is an eerie thing to most people. Not that its reality is at all shadowy or fantastic or even unfamiliar, for many of us have seen one of these mighty toys, have watched it ruffle, as it were, its plumage, put forth all its elements of strength, and manœuvre on the vast aerial rink of the sky. Its eeriness consists in its remoteness from our usual circumstances of life. Very few purses can command such a costly article, and very few people have the nerve or the time to devote their lives and thoughts to the study of its dangers and possibilities. Yet the things that take place in these machines are of the greatest interest to us all; they are done in the name of our safety in war and of our progress in peace, and it is of almost infinite importance that we should try to understand what the mind and body suffer at great altitudes and in the strangest physical conditions, in short, what aviation means to the use of our normal functions.

For these reasons we have read with great interest and admiration the modest accounts which have been published lately of the physiological effects of aviation. We shall mention two which have most impressed us by the sincerity and professional spirit of their matter—the Address of Senator Reymond before the Paris Congress, published in *Journal of State Medicine*, XXI, 500, 1913, and H. von Schrötter's monograph, *Hygiene der Aeronautik und Aviatik*. It appears that the aviator must possess, above all things, the most carefully trained senses and marked agility of mind. He stands on the edge of eternity, either to be launched or snatched back into some by-way of the air, and a momentary confusion or error in his perceptions may be fatal. Secondly, we are told that the voluminous motions of a free balloon or the more processional steps of the dirigible produce effects less tremendous, less intense and breath bereaving than the mechanical gyrations and abrupt flight of the aeroplane. All writers agree that the swiftness—its speed may be one hundred kilometres an hour—by which it rises in a few minutes from the earth to the upper air produces painful stresses on the bodily organs, which must be met by corresponding physiological processes. The sudden elevation to a rarefied atmosphere, to cold which is said to increase one degree C. with every hundred metres, raises the pulse rate and blood pressure, and there is often a painful oppression of the heart and diaphragm and respiration. There are riddles of the air, which do not lend themselves to meteorological calculations, eddies and unfathomable currents where the airmen *rari in gurgite* experience the nausea of seasickness, and sometimes a lethargy and depression of the brain, the grim beginning of coma. These mental effects are difficult to explain; the aviator is lost who gives himself up to them. Some writers suppose that the lethargy and coma are caused by a deficiency of oxygen in the blood, and it is prudent to have at hand a supply of oxygen. The matter of oxygen needed for the system —which is a most important branch of hygiene in aviation, but far from being the whole problem— is above everything a physiological matter. The cold wind brings the red corpuscles of the blood to the surface of the body, they tend to multiply without carrying more oxygen, a result which, we might think, must produce dissolution of their structure and hemoglobin.

There are several other principles of hygiene concerned with the question of aviation, the avoidance of deafness, for example. The Eustachian tube may be closed by the force of the wind; hence breathing through the nose is essential. There are other opposing and harassing things, muscular fatigue, the currents of air raised by the screw, the suffocating gases of the motor, and the involuntary excretion of waste products of the body. These special and extremely pressing questions are to be solved in terms of physiology and hygiene. The question again of giving any large class of people, not perhaps the strongest, steadiest, or aptest, a stake in such an enterprise as aviation, is an immense problem of the future. We will conclude by concurring in Reymond's opinion, that the prospective aviator should be subjected to the most rigorous mental and physical examination.

CERTIFIED MILK: A CORRECTION.

In our issue for April 23d last, in an editorial article on Septic Sore Throat, it was stated that a Boston epidemic had been traced to a dairy where the sanitary arrangements were the best, and to certified milk in which the bacterial inhabitants were fewest. The word "certified" in the foregoing passage should have been omitted, for, according to physicians who are interested in medical milk commission work in Boston, its use was a serious menace to an important medical philanthropy and likely to weaken public and professional confidence in certified milk.

The statements in the editorial article in question

were based on a communication to the *Boston Medical and Surgical Journal* for December 14, 1911, from Professor C. E. A. Winslow, formerly of the Massachusetts Institute of Technology. In a personal letter Professor Winslow insists that the infection took place at a dairy "which was in admirable condition, quite as good as that of any certified milk farm."

It will be seen, we think, that our error was a natural one. Careful investigation of the matter, however, convinces us that the word "certified" was not only wrongfully used, but that its use might give rise to grave and unfounded mistrust of a very carefully supervised and controlled product. There is reason to believe that a large number of physicians, to say nothing of the public generally, are ignorant of what certified milk really means. As an example of what is required of a dairy, we may summarize briefly the requirements in Massachusetts. The law in Massachusetts is most explicit. Chapter 506 of the Acts of 1911, entitled, An Act to Authorize the Incorporation of Medical Milk Commissions, enables each commission to enter into agreement with a dairyman and to prescribe the conditions under which milk shall be produced, "which conditions, however, shall not fall below the standards of purity and quality for certified milk as fixed by the American Association of Medical Milk Commissions." Penalties are prescribed for selling as certified any milk which does not conform to the regulations and bear the certification of a commission. The standards fixed for certified milk by the American association just referred to, include over one hundred specific requirements and certain definite demands with reference to the quality, purity, and safety of the milk. Among these requirements may be mentioned tuberculin testing of the cows, the removal, isolation, and disposal of sick or emaciated animals, bacteriological and chemical testing of the milk, medical examination of the employees and the supervision of their health and personal hygiene, their immunization against smallpox and typhoid fever and protection against typhoid and venereal carriers, their subjection to Widal and Wassermann tests, compulsory bathing, etc. Certainly the dairy referred to in Professor Winslow's communication, the product of which we unwittingly mentioned as certified milk, did not fulfill these requirements.

Certified milk is a comparatively recent mode of protection of the public; but as far back as 1892, Dr. Henry L. Coit, of Newark, N. J., provided for every fundamental requirement in a contract which he drew up with the first certified dairy in the world. As stated by Dr. Martin J. Synnott, of Montclair, in an address before the association of milk commissions at Minneapolis, in June, 1913, to Doctor Coit belongs the whole credit of initiating this crusade, and to his almost apostolic zeal is due the remarkable success which the propaganda has attained and is destined to attain.

THE CONTROL OF WHOOPING COUGH.

The great prevalence of whooping cough has long been a reproach; in this city during certain months of the year the direct mortality is apt to exceed that from either measles or scarlet fever, and for the last three years the annual mortality of whooping cough has been somewhat more than half that of measles and of scarlet fever, the number of deaths from which was almost exactly the same. In 1913, however, this proportion was very considerably increased, and the deaths from whooping cough were about two thirds those from measles and four fifths those from scarlet fever. There is no means of determining what the indirect mortality is—this can only be conjectured, but it is undoubtedly large. Many of the deaths from bronchopneumonia must be attributed to whooping cough. Convulsions sometimes supervene upon the original disease or the resulting bronchopneumonia, and may be the immediate cause of death. Various other complications, as is well known, are liable to occur and either cause a fatal issue or lead to permanent disabilities. Goodhart includes among results and sequelæ, emaciation of the viscera, various forms of degeneration, cheesy change in the glands, secondary tuberculosis, atelectasis, bronchopneumonia, emphysema, and dilatation of the bronchial tubes. "Thus it is that after a bad attack of whooping cough the child often remains delicate, with a small and laterally flattened chest; the lower ribs being expanded over the abdominal viscera, thus causing the disproportion between the abdomen and thorax which is so common as a result of old atelectasis."

At last the pediatrists of this city have become thoroughly aroused to the inadequacy of the methods for the control of the disease, and at the April meeting of the section in pediatrics of the Academy of Medicine, a resolution was adopted, providing for the appointment of a committee to urge upon the department of health the necessity of making more ample provision for dealing with whooping cough. It is gratifying to learn that the department responded promptly. It is announced that a survey has been made of 116 hospitals and dispensaries to ascertain which institutions treat whooping cough at the present time, which desire to maintain whooping cough clinics, and what facilities these possess for handling the disease. Only five insti-

tutions have a district physician attending whooping cough patients at their homes, and only four—three hospitals and one dispensary—maintain classes for treating cases on the premises. Sixty-seven institutions admitted that all cases of whooping cough were not reported, and in reply to an inquiry as to whether a special class for the treatment of whooping cough would be established if permission was granted, fifty-five answered in the negative, forty-six were doubtful, and fifteen were willing to take it into consideration. These answers probably furnish the reason why whooping cough is so prevalent in this city, and why it has thus far failed of administration control. As a result of the investigation, a plan has been evolved for the better supervision and treatment of whooping cough. The department is taking up the matter with the Associated Outpatient Clinics and the hospitals, and it is hoped that before long adequate facilities for the care of those suffering from the disease will be provided.

A NEW USE FOR EMETINE

Since Professor Leonard Rogers, of Calcutta, announced his success with emetine in amebic dysentery and hepatitis, the alkaloid has been used with excellent results in infection with Schistosomum japonicum, in hemoptysis and gastrointestinal hemorrhage, in bronchopneumonia of the aged, and in the hemorrhage of typhoid, paratyphoid, and alcoholic hepatitis. A. J. Noronha, of Magazon, Bombay, reports in the *British Medical Journal* for May 23, 1914, that he treated successfully a case of hepatopulmonary abscess with daily injections of one grain of emetine together with Dover's powder by mouth. Within three days the blood laden sputum became mucopurulent, the cough disappeared in a week, and very shortly after the patient had gained so in weight as to present a normal appearance. When first examined, this patient had living Amœba histolytica in the sputum, although there had been no dysentery.

DR. W. G. TUCKER HONORED.

Dr. W. G. Tucker, the acting dean of the Albany Medical College, was presented with a silver loving cup by the alumni at their annual banquet on May 26th. Governor Glynn, in his speech, paid a high tribute to the college and to Doctor Tucker, who for thirty-one years, ending January 1st, was the registrar. The Alumni Association was founded in 1873 and Doctor Tucker was the first secretary, holding the position for twenty-three years. The many friends of the doctor, registrar, and acting dean will be glad to learn of some tangible recognition of his invaluable and multifarious services to the Albany school and to join in good wishes for his happiness and success in any work he may choose wherewith to crown his career.

Obituary.

EMIL GRUENING, M. D.,
of New York.

Dr. Emil Gruening died at his residence, 86 East Fifty-seventh Street, New York, on May 30th, in his seventy-second year. He was born in Hohensalza, Prussia, October 2, 1842, and came to this country at the age of twenty years, when he began his medical studies at the College of Physicians and Surgeons. These were interrupted by the outbreak of the Civil War, which gave Doctor Gruening an opportunity to enlist in the Seventh New Jersey Volunteer Infantry; he took part in the battle of Hatcher's Run and in the siege of Petersburg and was present at the surrender of General Lee. Doctor Gruening returned to his studies and graduated in 1867, subsequently passing three years abroad. His appointments began with an assistant surgeonship at the New York Ophthalmic and Aural Institute in 1870; later he became ophthalmic surgeon to Mt. Sinai Hospital and to the German Hospital, serving actively for twenty-three years at the former institution and thirty years at the latter. He was professor of ophthalmology at the Polyclinic from 1882 to 1895. At various times Doctor Gruening was president of the American Ophthalmological Society, American Otological Society, the sections in ophthalmology and otology of the New York Academy of Medicine, and the Society for the Relief of Widows and Orphans of Medical Men. He was the author of numerous books and articles on ophthalmological and otological subjects, and was credited with the discovery of the poisonous effects of wood alcohol. He is survived by a widow and four children.

News Items.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Wednesday, June 10th, County Medical Society; Thursday, June 11th, Pathological Society; Friday, June 12th, Northern Medical Association.

Antivaccination Bill Defeated in Massachusetts.—The antivaccination bill, introduced into the Massachusetts legislature recently, was defeated in the House on May 14th by a vote of 133 to 53. As the measure had been approved by the Senate, by a vote of 25 to 9, its sponsors [illegible] expectations of victory. Dr. E. H. Bigelow led the fight in the House. He made the principal speech, and by exhibiting pictures and charts showing the effects of smallpox, convinced the members of the advantages of vaccination. The replies of the State Board of Health to the series of questions suggested by Representative Chamberlain, of Springfield, were also very effective.

American Society of Tropical Medicine.—At the eleventh annual meeting of this society, held in the administration building of the Harvard Medical School on Friday and Saturday, May 29th and 30th, under the presidency of Dr. Richard P. Strong, of Boston, the following officers were elected: President, Dr. Charles F. Craig, major, Medical Corps, United States Army; first vice-president, Dr. Milton J. Rosenau, of Boston; second vice-president, Dr. Bailey K. Ashford, of San Juan, Porto Rico; secretary, Dr. John M. Swan, of Rochester, N. Y.; assistant secretary, Dr. Allen J. Smith, of Philadelphia; councillors, Dr. D. T. Darling, of Ancon, Panama; Dr. Henry J. Nichols, of Washington, D. C., and Dr. Victor G. Heiser, of Manila, P. I.

West Virginia Medical Society.—At the annual meeting of this society, held in Bluefield on May 12th, 13th, 14th, and 15th, Dr. Henri P. Linsz, of Wheeling, was elected president. Other officers elected were as follows: First vice-president, Dr. J. D. Kirk, of Elkhorn; second vice-president, Dr. T. K. Oates, of Martinsburg; third vice-president, Dr. J. N. Houston, of Moundsville; secretary, Dr. J. Howard Anderson, of Marytown; treasurer, Dr. Hugh G. Nicholson. Dr. Frank Le Moyne Hupp, of Wheeling, was elected delegate to the meeting of the American Medical Association. Next year's meeting of the society will be held in Huntington.

A New Department in the University of Chicago.—A department of hygiene and bacteriology has been established at the University of Chicago. Dr. Edwin O. Jordan, professor of bacteriology, is head of the department, and associated with him are Dr. Norman MacLeod Harris and Dr. Paul G. Heinemann. The work in bacteriology was formerly included in the department of pathology and bacteriology, which now becomes the department of pathology, with Professor Ludwig Hektoen as head. During the present term Dr. William Buchanan Wherry, associate professor of bacteriology in the University of Cincinnati, is giving courses in advanced bacteriology and parasitology.

A Monument to the Late Professor Lucas-Championnière.—There has been organized in Paris a committee to obtain subscriptions for a monument to be erected to the late Professor Just Lucas-Championnière. Dr. W. W. Keen, of Philadelphia, and Dr. C. L. Gibson, of New York, are the American members of this committee, and they invite personal contributions to the fund. Subscriptions may se sent to Doctor Keen, at 1729 Chestnut Street, Philadelphia, or to M. Georges Steinheil, 2 rue Casimir-Delavigne, Paris. In case subscriptions are forwarded direct to Paris, Doctor Keen would be very glad to know of the fact and also the amount sent, in order that he and Doctor Gibson may know the total amount of the American subscription.

Pasteurizing New York's Milk Supply.—The situation regarding the compulsory pasteurizing of all except the highest grade of milk sold in this city is extremely satisfactory, at the present time about ninety-nine per cent. of the supply being effectively pasteurized. This represents an enormous improvement over conditions a year ago, and should do much to make milk borne disease a rarity. The change has been accomplished with a surprisingly few number of arrests and prosecutions. Where the department encountered undue delay on the part of milk dealers in complying with the pasteurization regulations, civil suits were brought to recover judgment. This mode of procedure proved highly efficacious. It undoubtedly has many advantages over the criminal proceedings brought by other cities in the United States for the same purpose.

The pasteurization plants are subject to close supervision by the department of health, and large numbers of samples of milk are being examined bacteriologically to check up the efficiency of operation. On the whole the department has had the cordial cooperation of all the large milk dealers and there is every reason to believe that at the present time the milk supply of this city is of better quality than that of any other large city in the world.

Personal.—Dr. Jacob Diner, of New York, has been promoted from assistant professor to the post of full professor of experimental pharmacology, toxicology, and laboratory diagnosis at Fordham University, School of Medicine.

Dr. James M. Anders has been appointed a member of the Philadelphia Board of Health. The other members of the board are Dr. John A. Vogelson, chief of the Bureau of Health, and Dr. A. C. Abbott, of the University of Pennsylvania.

Dr. S. W. Newmayer, of Philadelphia, a medical school inspector in charge of the division of child hygiene of the Department of Health, has been appointed an assistant to the chief medical inspector. Doctor Newmayer has been acting in this capacity since Dr. Charles A. Groff resigned in January.

Sir William Osler, regius professor of medicine at Oxford University, has been elected a foreign associate of the Paris Academy of Medicine.

Dr. Aristides Agramonte, professor of bacteriology and experimental pathology in the University of Havana, received the honorary degree of doctor of science at the 160th annual commencement of Columbia University this week.

Closing Exercises of the Army Medical School.—The closing exercises of the Army Medical School, session of 1913-1914, were held on Monday afternoon, June 1st. Dr. Henry C. Coe, of New York, first lieutenant, Medical Reserve Corps, delivered the address. The Honorable Lindley Miller Garrison, Secretary of War, presented diplomas to the seventeen graduates, four of whom were honor men. The Hoff Memorial Medal was presented by Colonel John Van R. Hoff, United States Army, retired, to First Lieutenant Charles L. Gandy, of New Jersey. First Lieutenant Alexander W. Williams, of the District of Columbia, received the Sternberg Medal, which was presented by Dr. Richard Slee, of Swiftwater, Pa. The other honor graduates were First Lieutenant Louis H. Bauer, of Massachusetts, and First Lieutenant Harry N. Kerns, of California. The graduates were as follows: First Lieutenants John B. Anderson, of Texas; Coleridge L. Beaven, of Maryland; Austin J. Canning, of Pennsylvania; Walter P. Davenport, of Minnesota; William G. Guthrie, of Kansas; Wilson C. von Kessler, of Pennsylvania; Ralph M. Le Comte, of Pennsylvania; John M. Pratt, of New York; John H. H. Scudder, of California; Eide F. Thode, of New York; William W. Vaughan, of District of Columbia; Lamphear W. Webb, Jr., of Pennsylvania; Robert H. Wilds, of South Carolina.

American Association of Anesthetists.—This association, which was organized in June, 1912, will hold its second regular meeting in Atlantic City, N. J., on Monday, June 22d. There will be an executive session at 9 a. m., followed by a scientific session, the first item on the program being the address of the president, Dr. J. Tayloe Gwathmey, of New York, on Oil Ether Colonic Anesthesia. The discussion will be opened by Dr. J. E. Lumbard, of New York. Other papers on subjects relating to anesthesia will be presented by Dr. H. Warren Buckler, of Baltimore; Dr. F. W. Nagle, of Montreal; Professor Charles Lieb, of Columbia University; Dr. Karl Connel, of New York; Dr. W. Wayne Babcock, of Philadelphia; Dr. James F. Mitchell, of Washington, D. C.; Professor F. W. Pike, of Columbia University, and Dr. George W. Crile, of Cleveland. The present officers of the association are: President, Dr. J. Tayloe Gwathmey, of New York; vice-presidents, Dr. Charles K. Teter, of Cleveland; Dr. F. H. McMechan, of Cincinnati, and Dr. Yandel Henderson, of New Haven; treasurer, Dr. Harold A. Sanders, of Brooklyn; secretary, Dr. William C. Woolsey, of Brooklyn. The following have been nominated as officers for 1914-1915: President, Dr. Charles K. Teter, of Cleveland; vice-presidents, Dr. Willis D. Gatch, of Indianapolis; Dr. T. Drysdale Buchanan, of New York, and Dr. Mary Madigan, of Portland, Ore.; secretary and treasurer, Dr. J. Tayloe Gwathmey, of New York; executive committee, Dr. F. W. Pineo, of Newark, N. J., and Dr. W. G. Woolsey.

Civil Service Examinations for Bacteriologist and Assistant Epidemiologist.—The United States Civil Service Commission announces an open competitive examination for bacteriologist, for men only, on July 8, 1914. From the list of eligible persons resulting from this examination certification will be made to fill vacancies in this position at salaries ranging from $1,200 to $2,000 a year, in the Bureau of Chemistry, Department of Agriculture, for duty both in Washington, D. C., and in the field. The duties of this position will be to examine bacteriologically food products which are subject to the food and drugs act, in order to determine their sanitary condition. An educational training equivalent to that required for a bachelor's degree or an M. D. degree from a college or university of recognized standing, including at least two years' training in bacteriology, is a prerequisite for consideration for this position. Persons who desire to take this examination should apply at once for application Form 1312.

An open competitive examination is also announced for assistant epidemiologist, for men only. From the list of eligible persons resulting from the examination certification will be made to fill vacancies in this position in the United States Public Health Service, at salaries ranging from $2,000 to $2,500 a year. The duties of this position will be to conduct laboratory studies of disease, to make epidemiological surveys, to determine the prevalence and causation of epidemics, and to recommend measures to present and control outbreaks of disease. Applications must be filed with the Civil Service Commission on or before July 6th.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

March 2, 1914.

Experimental Vaccinia.—H. A. Gins has tried to confirm the results of Fornet, and has found that continued shaking with ether usually weakens the virus considerably. It is also almost impossible to make lymph entirely germ free, without shaking the mixture for at least 100 hours. This appears to refute the claims of Fornet, who asserts that he has been able to secure a pure preparation of vaccine virus and culture which produced typical vaccinia. The virus is also absorbed by the filter when sent through a Chamberland or Berkfeld filter. The only way to secure pure virus seems to be by shaking with creolin.

Diagnosis of Hypothyroidism.—Heinrich Stern describes a new symptom in hypothyroidism, a doughlike infiltration of the neck of the bladder or urethra. In all cases of tenesmus or frequent urination, he lays down the rule thoroughly to cystoscope the bladder and urethra, and examine generally for signs of deficient secretion of the thyroid gland. Occasionally the first symptom of a hypothyroid state is substantiated by cystoscopic examination. Nocturnal enuresis of children is occasionally benefited by thyroid substance; the improvement is to be explained on these grounds.

Fattening in Infancy.—Engel suggests, to increase the weight of children, that it is necessary to administer food of high caloric value which does not interfere with the appetite. This is best accomplished by giving cream, beginning with 100 c. c., about a wineglassful and gradually increasing to one half litre. If given just before bedtime, and the last meal eaten at about 5 or 6 p. m. children do not lose their appetites. It is also important that these patients be kept quietly in bed so that a saving of energy results.

Grotan, a New Disinfectant.—Aumann and Storp have carried out a series of investigations with grotan or sodium chlorcresolate. Solutions are slightly alkaline and perfectly clear. This substance, although a very strong disinfectant, has no corroding effect on nickeled instruments, nor does it act as a caustic like phenol or lysol when applied to the skin. It is not toxic, in small doses not affecting guineapigs. Owing to the faint odor of cresol and to its red color, it is a fairly safe disinfectant. Even in 33 per cent. solution it has a decided disinfectant action on bacteria even in albuminous solutions.

Serum Disease.—Fritz C. R. Schultz concludes as follows: 1. The addition of phenol to the serum may give rise to some difficulty in cases where injections of more than twenty c. c. are found necessary. 2. Serums derived from different horses are not in any way uniform as to the effects they may bring about. 3. A good nonirritant serum should not be followed by a temperature of more than 102° F., lasting the first twenty-four hours. On the second day, the temperature should not exceed 100° F., and on the third day there should be no fever. 4. A temperature above 102° F., lasting three or four days, followed by a severe scarlatiniform rash, should condemn the serum, which should not be used any longer. 5. For prevention of serum disturbances, it is important to determine the highest possible dose, and where reinjection is required, a serum of high antitoxin content should be employed.

Shellac Stones in Stomach and Duodenum.—E. A. Hallas reports two cases in which at autopsy the stomach and upper portion of the duodenum were completely filled with a large concrement consisting almost entirely of dried shellac. The patients in both instances were very heavy drinkers. Animal experiments carried out to determine whether it was possible to produce experimentally a similar condition, fully substantiated the autopsy.

Intracutaneous Reaction with Noguchi's Luetin.—Fagiuoli and V. Fisichella report their results with the intracutaneous inoculation with luetin of patients suspected of syphilis. They find that this reaction is of decided value, especially in so called late lues. In several cases of aortic aneurysm and aortic insufficiency, absence of a positive Wassermann reaction led to confusing results—when this test proved the presence of syphilis which then yielded to treatment.

Tubercle Bacilli in Circulating Blood.—Felix Klemperer discusses the presence of tubercle bacilli in the circulating blood of patients affected with tuberculosis. The method of Staubli-Schnitter and of Rosenberger, of collecting the blood in citrate solution and examining the sediment, is entirely too tedious to commend itself to laboratory workers. Examination by means of inoculation into animals, has been found more advantageous, and a number of cases gives more definite results. It is conceded today, that in the great majority of the cases of tuberculosis tubercle bacilli appear occasionally in small numbers in the blood.

Chemotherapy in Malaria.—Izar and Micosia report their results with ethyl hydrocuprein in malaria. They consider that this drug is a decided advance in therapy and warrants further investigation. It is especially valuable in chronic malaria, in the pernicious forms, in the relapsing, and where a quinine idiosyncracy exists. The drug is administered in quantities of one to 1.5 gram divided in three doses a day. Duration of the treatment is one to five days. Untoward symptoms may be divided into two classes, those similar to symptoms of cinchonism, and those referable to the action of ethyl hydrocuprein. The latter symptoms are chiefly of the eyes, of amaurosis, which, however, is only temporary. This complication is relatively uncommon, having occurred only once out of forty-nine cases. Idiosyncrasy to this drug is more marked in other conditions than in malaria. In children affected with kalaazar, untoward symptoms are more severe, although the effect on the disease is fairly satisfactory.

Treatment of Syphilis with Salvarsan and Mercury. Von Zeissl sets up the following postulates in the treatment of syphilis. Salvarsan should be dissolved in distilled water and should be prepared shortly before using. Asepsis must be careful. If

the primary lesion is of short duration, it is quite possible to institute an abortive treatment with a definite hope of success. After salvarsan, relapses and occurrence of the so called late forms of syphilis, are comparatively rare. It is not advisable to institute treatment with mercury and salvarsan at the same time. Salvarsan is a predisposing cause in the occurrence of several of the nervous relapses in syphilis. The dose employed is dependent on the physical state of the patient, and condition of the heart, liver, kidneys; the eyegrounds should be thoroughly investigated. After the injection, the patient should be required to rest in bed for at least one to two days, and foods which are not compatible with arsenic, ought to be avoided. Intervals of eight days should pass between injections. The patient should be observed for a period of at least two to three years, and the Wassermann reaction made at repeated intervals.

Rhinoscleroma and Pharyngoscleroma Improved by Physical Therapy.—H. Mesterscheski and F. Grintschar report a case of scleroma affecting the nose and rhinopharynx which did not improve after treatment with vaccines prepared from capsulated, as well as decapsulated bacteria. Application of the x ray in conjunction with radium and carbon dioxide snow, brought about a marked improvement. In this case radium and carbon dioxide snow acted seemingly as adjuvants only, the chief improvement being ascribable to the x ray.

Phlebogenic Pains.—L. Edinger reports several cases in which pains in the legs were wrongly diagnosed as rheumatism, but which on closer examination proved to have their origin in varicose veins. The importance of this factor lies in the possibility of producing marked relief, if not cure, by appropriate measures, as compression of the peripheral veins by means of elastic bandages, and rest.

Origin of Reaction Products Determined by the Wassermann Reaction.—A. von Wassermann and C. Lange investigated the source of the reacting bodies in syphilitic serum, and have found that these apparently have their origin in the lymphocytes. That this is not due to autolysis of the lymphocytes may be seen in control observations of lumbar fluid of tuberculous meningitis, where despite autolysis, no increase of the syphilitic nor even the presence of syphilitic reagents, could be demonstrated.

March 2, 1914

Simple Salvarsan Therapy of Syphilis.—Wilhelm Wechselmann contends that it is quite possible to obtain good results with salvarsan alone in syphilis without combining it with mercury. In over 40,000 cases where salvarsan was employed there was only one death, and that was in a case where the combined treatment was instituted. As many as thirty to forty injections of 0.45 gram of salvarsan were given without any untoward results. He has observed several cases of mercurial treatment followed by death, and therefore thinks that it is not just to ascribe the death occurring after combined treatment to the toxic influence of salvarsan. In healthy animals, salvarsan is not harmful, it is only in cases where vessel or nerve affections are present, that salvarsan may prove injurious. The kidneys, when previously injured by mercury, may as a result of a consequent salvarsan injection, be the seat of fatal nephritis. Salvarsan is followed by lowering of blood pressure; it is therefore to be avoided or given with great care, not in people with arteriosclerosis as previously supposed, but in cases of status thymicolymphaticus, in latent Addison's disease, and in patients with low blood pressure. Salvarsan treatment should be controlled by the Wassermann reaction.

Treatment of Pernicious Anemia by Splenectomy.—Fr. Port contributes a case of pernicious anemia apparently cured by extirpation of the spleen. Following operation, the appearance of Jolly bodies (small apparently nuclear remnants within the red blood cells) were observed. Other changes corresponding to pernicious anemia, viz., presence of megaloblasts and poikilocytosis, could not be observed. The author thinks that in idiopathic pernicious anemia, splenectomy finds a distinct indication, especially where a high grade of hemolysis is present.

CORRESPONDENZBLATT FÜR SCHWEIZER AERZTE.

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Multiplicity of Tumors.—Fritz Egli has performed 4,765 autopsies in the past seven years, and found tumors in 966 of these. Primary multiple tumors were found in 263 of these 966, in 27.2 per cent. This number was further subdivided as follows: 1, Several tumors histologically alike in the same organ or system of organs, were found in eighty-four; 2, two tumors differing histologically or in situation, each of which might be multiple, in 129; 3, three tumors differing histologically or in situation, one or more of which might be multiple, in thirty-eight; 4, four or more tumors differing histologically or in situation, one or more of which might be multiple, in twelve. With regard to the nature of the tumors the figures ran: Malignant tumors, 534; benign tumors, 169; malignant and benign tumors, seventy-seven; two benign tumors, forty-five; several benign tumors, histologically identical, seventy-eight; two primary, histologically different malignant tumors, seven; several primary, histologically identical malignant tumors, six; one malignant and two benign tumors, twenty-two; one malignant and three benign tumors, three; one malignant and four benign tumors, one; two malignant and one benign, two; two malignant and two benign, four; two malignant and four benign, one; three differing benign tumors, fourteen; four different benign tumors, two; five different benign tumors, one.

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Pneumothorax Therapy in Pulmonary Tuberculosis.—U. Carpi gives the results of eighteen cases of pulmonary tuberculosis treated with pneumothorax. These were not good in three patients; one had a fistula of the thorax, with subsequent tuberculous empyema, another died in the early stage of treatment from edema of the lungs due to a toxic myocarditic insufficiency of the heart, the third died from diffuse enteromesenteric tuberculosis with severe intestinal hemorrhages. Of the remaining thirteen, one was definitely cured after three years of treatment; three were clinically cured after two years of treatment; two were much

improved at the end of nine and three months, although complicated by tuberculosis of the ileum and cecum; the remainder progressed favorably.

DERMATOLOGISCHE WOCHENSCHRIFT.

May [illegible]

Hutchinson's Teeth as an Indication of Insufficiency of the Thyroid.—Arnold Josefson reports a case in which the development of well marked Hutchinson's teeth could not be ascribed to hereditary syphilis, but seemed to be wholly due to impaired function of the thyroid.

LYON MÉDICAL.

April [illegible]

Incomplete Amyotrophic Lateral Sclerosis.—A. Gonnet and A. Grimaud lay stress on the fact that in some cases of amyotrophic lateral sclerosis, the symptoms and signs suggest nothing more than a progressive muscular atrophy of the Aran Duchenne type, the sclerosis of the anterolateral columns, characteristic of amyotrophic lateral sclerosis, not being manifested in any very distinct symptoms. In the case reported by the authors, there was noted, in addition to the Aran-Duchenne syndrome, merely a slight exaggeration of the tendon reflexes in the four limbs, a temporarily positive Babinski, a few brief attacks of rigidity and pain at long intervals, and only at the last, a trace of muscular contracture. Yet the patient died about twenty months after admission, and the spinal cord showed a typical lateral sclerosis. Such a case demonstrates the importance of paying heed to even minor spinal signs in the diagnosis of amyotrophic lateral sclerosis. A fact to which due importance had not been attached in the authors' case was that paralysis preceded atrophy. This suggests disease of the pyramidal tracts rather than a simple chronic poliomyelitis.

Tracheocricostomy.—Sargnon states that tracheocricostomy deserves to be performed much oftener in the treatment of tight cicatricial stenoses of the cricoid following intubation with resulting local ulceration. It is applicable in all stenoses which do not extend up to the thyroid cartilage, in which the more commonly employed complete tracheolaryngostomy is indicated. After tracheocricostomy there is much less trouble from local infection extending downward from the mouth; healing takes place more rapidly because the dressing is firmly held and need not be readjusted for some days; the voice returns very promptly, whereas after complete tracheolaryngostomy this takes months. The wound is smaller. A third form of operation, segmental resection of the narrowed cricoid ring, may be substituted for or combined with tracheocricostomy.

Skin Tuberculosis without Lymphadenitis.—Nicolas, Massia, Gaté and Pillon report three cases and conclude that lymphadenitis, generally considered a cardinal sign in skin tuberculosis, may be wanting in a certain proportion of cases, and therefore should not be given too much weight in the diagnosis. The only indication of absolute diagnostic value is a positive guineapig inoculation.

PARIS MEDICAL.

[illegible]

Prostatectomy in Two Stages.—V. Carlier strongly advises a preliminary cystotomy in all cases of prostatic hypertrophy in which there is doubt as to renal efficiency, in cases when the bladder is infected or dilated, or when there is general toxemia. The two stage method, first practised in Carlier's clinic at Lille, has been received with such favor in France as to rival the one stage operation even in uninfected cases. Cystotomy not only overcomes stagnation of urine in the bladder, but removes intravesical pressure, facilitates the function of the ureters, favors a return of the kidneys to normal, clearly lowers the general blood pressure, improves the appetite and the patient's general condition. A strict low protein and low salt or salt free diet is also ordered in preparation for the second operation. Cystotomy is done under novocaine local anesthesia and consists in the introduction into the bladder through a small stab opening of a No. 20 Malécot sound. In cases with dilated bladder complete evacuation is not allowed for two days. Drainage is continued from one, to as long as eighteen months, and causes so little inconvenience that several patients preferred its permanent use to undergoing a second operation of prostatectomy. The author has performed the two stage operation in twenty-eight cases, all in bad condition generally and locally, without any deaths. Four fifths of these patients would have succumbed under a primary prostatectomy.

PRESSE MÉDICALE.

May [illegible]

The Oxycephalic Syndrome.—Mario Bertolotti asserts that the notion of oxycephaly generally held is too restricted. In addition to the manifestations more widely known, viz., the cranial deformity, disease of the optic nerves, exophthalmos, strabismus, and nystagmus, there are abnormalities in the bones of the face, affecting the orbits, nose, palate, and both superior and inferior maxillæ. These deformities impart an appearance as of adenoid trouble, quite typical of oxycephaly. Changes in the facial bones, according to the author's radiographic research, are secondary to depression of the middle cerebral fossa and downward displacement of the sphenoid, the result in turn of abnormal sphenobasilar synostosis. Either the upper or the lower jaw may show marked prognathism. Moreover, the particular bony suture exhibiting abnormal synostosis varies, and several sutures may be simultaneously affected. Oxycephaly, in the broad sense, includes several different abnormal forms of calvarium, as acrocephaly, scaphocephaly, trigonocephaly, aprocephaly, etc. Bertolotti believes, therefore, that the term oxycephaly should be dropped, and the more correct, broader application "pathological craniosynostosis" be substituted. He finds that even in cases preserving a vision of 5/10 to 9/10, there is a special, constant, grayish pallor of the optic disc, which is of diagnostic import. With oxycephaly may be associated teratological anomalies, ductless gland disorders as ex-

ophthalmic goitre and achondroplasia, or meningeal syndromes manifested in general paralysis or idiocy.

New Diagnostic Procedure in Syphilis.—Landau's procedure, as recently simplified, involves the use of a one per cent. solution of iodine in tetrachlormethane, prepared each time before use by mixing the two ingredients in a mortar with a glass rod. A small quantity of the patient's blood serum is mixed with some of the reagent in a test tube, and allowed to stand undisturbed for four hours at room temperature. Syphilitic serums yield a clear, yellow fluid, while normal serums yield one which is cloudy and grayish white. In comparative trials of the Wassermann reaction and the Landau test as originally performed—with a one in 2,000 iodine and liquid petrolatum mixture—the Landau proved more constantly positive in syphilitics. All cases in the tertiary stage gave a positive Landau, and the early cases with a chancré yielding a positive Landau were seventeen times as many as those yielding a positive Wassermann. Blood to be tested by the Landau reaction must be examined shortly after it is obtained from the patient, for when twenty-four hours have elapsed, some syphilitic serums fail to react positively.

SEMAINE MÉDICALE.

May 6, 1914.

Functional Disability, Pain, and Edema after Removal of Breast for Cancer.—R. de Bovis recommends leaving a few fibres of the pectoral muscles in the upper part of the wound as a protection to vessels and nerves. Where the incision has been made near the deltoid a special opening should be made in the axilla for drainage. The drain should be introduced only through the skin, and removed in forty-eight hours, if all goes well. Afterward, a drain is unnecessary, as the discharge soon ceases. With the arm kept close to the side, there is little chance of axillary infection. Where these simple procedures intended to spare the patient later discomfort, are found ineffectual, Ruth's plan may be followed of inserting the distal part of the pectoral muscles into the axilla and suturing it to the serratus magnus and latissimus dorsi.

Renal Ectopy and Appendicitis.—F. Lejars reports the case of a girl aged seventeen years who for four years had had frequent attacks of pain in the right iliac fossa with nausea and obstinate constipation, and was admitted for surgical treatment of chronic appendicitis. A large mass in the iliac region, of firm consistence, but slightly movable, not recalling in shape a kidney, was noted, with a zone of tenderness below it. Upon incision, it was found to be a kidney about twice the normal size. It was reduced and the peritoneum sutured over it. The appendix, large and manifestly diseased, was also removed. The renal displacement in this case had probably been a factor in the appendicular trouble and the attacks of pain.

ROUSSKY VRATCH.

[illegible]

Cumarin; a New Cardiac Remedy.—V. D. Zelensky tested this new glucoside of apocynum cannabinum on animals, with the following results: A toxic dose applied to a frog's heart increases at first the diastole and systole and slows somewhat the heart's action. This is followed by weaker contractions of the ventricles, arrhythmia, slowing of the heart, and final cessation in systole. On the isolated heart of cats, small doses produce slowing and somewhat increased systolic contractions; larger doses have a greater effect. The blood pressure, depending on the dose, was found raised in experiments on dogs. This increased pressure was due to the local action of the drug on the vessels. The author concludes that cumarin is an active cardiac tonic similar in action to drugs of the digitalis group.

Influence of Animal Food on the Aorta and Internal Organs of Rabbits.—V. K. Varisheff produced in rabbits changes in the aorta and internal organs similar to arteriosclerosis in man by feeding them with milk, eggs, meat and codliver oil. The author attributed the cirrhotic changes to cholesterinemia.

March 1, 1914.

Action of Poisons on the Bloodvessels of the Lungs.—V. I. Berezin concludes from experiments on animals that adrenaline, in concentrations sufficient to constrict the peripheral bloodvessels, either has no action on the pulmonary bloodvessels or else causes considerable dilatation. Nicotine, histamine, pilocarpine, and barium chloride act as pulmonary vasoconstrictors. Caffeine causes at first constriction and then dilatation. Atropine has no appreciable effect, but when the vessels have been first constricted by pilocarpine or histamine it removes their action.

Chemotherapy of Malignant Growths.—P. S. Krym studied the effect of colloidal selenium in eight cases of cancer with negative results. From the literature and her personal observations, the author concludes that up to date the possibility of cure of malignant growths with colloidal salts has not been established and improvement of the patients after these drugs may be attributed to a mental effect.

Frequency of Gallstones.—E. R. Gesse and M. I. Gesse present the findings of 17,402 autopsies performed at the St. Petersburg Obuchoff Hospital for the past ten years. Gallstones were found in 378 cases, or 2.17 per cent. Of these eighty-two, or 0.73 per cent., were found in men and 296, or 4.75 per cent., in women. In 319 cases, or eighty-four per cent., the presence of gallstones was not evident from the clinical history. In fifty-nine cases, or sixteen per cent., there were clinical evidences of cholelithiasis. The most frequent complication—cholecystitis—appeared in twenty-four per cent. In fifty-eight cases there was cholecystitis without gallstones. Of fifty-nine cases in which the gallstones were the direct cause of death, thirty-three showed suppurative cholecystitis, ten showed acute obstruction of the common duct, one showed obstruction of the hepatic duct, and fifteen primary cancer of the gallbladder. The conclusions drawn were that cholelithiasis is of less frequent occurrence in Russia than in Europe, that it is more frequent and more complicated in women than in men, that it is more frequent in the sixth decennial period of life, that it is masked in a considerable number of cases (eighty-four per cent.), that chole-

cystitis without gallstones is not at all rare, and that in the etiology of primary cancer of the gallbladder gallstones play an important role.

Etiology of Nocturnal Enuresis.—P. M. Fronstein maintains that in all cases of enuresis there is some underlying pathological condition; it is not merely a bad habit to be overcome by punishment or training. In many children, the underlying cause is adenoids. In three cases of enuresis in recruits, an occult spina bifida was discovered as the underlying cause. The author pleads for more careful study of enuresis.

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May 16, 1914

Spasm of the Cerebral Vessels.—William Russell thinks that cerebral angiospasm not only may occur, but is rather frequent. He cites the observation that transitory hemianopsia has been associated with marked reduction in the size of the vessels in the affected portion of the retina and that return of vision was accompanied by relaxation of the spasm. Among common conditions due to cerebral angiospasm are certain forms of migraine, transitory loss of memory, mental obscuration in which there are attacks of greater obscuration and inability to work, epileptoid attacks, vertigo, and temporary loss of ability to perform ordinary work. If the angiospasm recurs very frequently, or if an attack is considerably prolonged, more or less marked cerebral softening may result. Drugs which induce vasodilatation usually relieve the symptoms at once.

Epilepsy and Tuberculosis.—B. Henry Shaw considers the possible relation between these two diseases from observations made in a large service in a mental hospital. From statistical studies he comes to the conclusion that there is a definite causal relation between epilepsy and tuberculosis. Insane and defective patients from urban districts are epileptic in a larger proportion than rural. Tuberculosis in childhood is universally more fatal among boys than among girls; the recent increase of epilepsy has been among girls. In the hospital, the death rate from tuberculosis is ten per cent. higher among epileptics than among other patients. Sixty epileptics were given the tuberculin test and of these ninety-five per cent. gave suggestive or positive reactions. A peculiarity of the reaction among epileptics is the great frequency, fifty per cent., with which patients show a fall of temperature to below normal after the primary rise. By observing the temperatures of epileptics for ten hours after their fits, it was found that the rises corresponded fairly closely with the results of the tuberculin tests, suggesting an autoinoculation with tuberculin from the fit. Having found that epilepsy is much more frequent in the urban population, and that tuberculosis is more prevalent and more fatal among epileptics than among other insane. Shaw offers the following theory to explain the relation between the two diseases: When a child whose vitality is lowered through lack or care and proper nourishment, to say nothing of fresh air, and who may in addition suffer from unstable nervous heredity, contracts tuberculosis, it may very conceivably be either that a reflex effect is induced or that the toxins thrown into its system from the tuberculous focus have an action, centric or synaptic, on the child's partially developed and ill regulated nervous organization, resulting in disturbance of the normal balance, and—especially in cases predisposed thereto by inherited nervous instability—the immediate result is an epileptic seizure, which, by bringing about autoinoculation, has the effect of rendering the toxic focus somewhat quiescent for a time. When the effects of this autotuberculinization wear off the fit recurs, and after a time the sensitive neurons acquire a habit, or synaptic changes take place from which recovery becomes unlikely. This constant autoinoculation either after a longer or shorter time brings about a cure of the tuberculous lesion, the danger of recurrence of the epileptic seizures being in direct ratio to the length of such period, or it keeps the toxin-producing focus in check until debility from exhaustion of one kind or another deteriorates the defensive powers of the system, and rapid tuberculosis results. It will be familiar to every one having experience of epileptics what a low asthenic form the tuberculous process takes in them, and how advanced the lesions are post mortem.

Strychnine Tuberculin Treatment.—J. H. Whelan finds great advantage in giving daily doses of strychnine along with weekly doses of tuberculin, particularly in hospital cases of tuberculosis. He gives a single large dose each day, administering from eighteen to twenty-five minims of a one in 400 solution of strychnine hydrochloride intramuscularly. He gives strychnine in all cases, even where tuberculin is contraindicated, "and with invariably good results." Appetite and general condition are always improved. Debove's lavage often becomes unnecessary. Pulmonary hemorrhage is no contraindication to strychnine. He believes that the drug "stimulates the formation of antibodies, especially when combined periodically with tuberculin."

LANCET.

May [illegible], 1914

Development of the Heart in Man in Relation to Its Functional Activity.—David Waterston's researches, using human embryos from three mm. in length lead him to the following conclusions: "1. In the first stage of its development the heart is a self regulating organ. Its rhythmic activity is shown by peristaltic waves of contraction which sweep over it from end to end, and at this stage it possesses a continuous muscular coat. It is quite independent of the central nervous system. 2. In the next stage—i. e., when the primitive chambers are being divided—a new mechanism arises in the form of a node of specialized tissue situated at the junction of the sinus venosus and atrium, which passes thence to the dorsal wall of the atrium and the region of the pulmonary veins. This is the first of the nodal tissues to appear, and is the precursor of the sinuatrial node of the adult heart. 3. The *a.-v.* bundle and node make their appearance about the time of the further division of the chambers of the heart, as a bundle of fibres lying under the posterior endocardial cushion of the atrial canal, and extending from the atrial wall to the ventricular muscular septum. The evidence goes to show that

this bundle is derived from the tissues in which it appears, and that from the first it is surrounded by a sheath of loose connective tissue. Fibres and cells from the central nervous system invade this bundle, and also go to other portions of the heart wall, but the intrinsic regulating mechanism appears to arise independently of the nervous system, and is connected only secondarily through that system with the other parts of the body."

Dietetic Disorders in Infants.—Eric Pritchard discusses some of the common errors in diagnosis and treatment of these conditions, laying particular stress on the importance of considering disturbances of the motor functions of the alimentary canal. Many cases of so called indigestion are intractable to treatment because they are not recognized as being due to a perverted or incoordinated action of the motor functions, a result dependent more on habit than on the particular qualities of the food which for the time being the infant may be consuming. Errors in the diet of the earliest days of life may lead to symptoms which are called indigestion, but these symptoms may be perpetuated as bad habits long after the cause of them has been removed. The conditions which Pritchard describes, he believes, though originally produced by faulty methods of feeding, were wrongly ascribed to defects in the food and were wrongly treated by changes and alteration in the diet. There is only one cure for faulty habits of this kind, and that is reeducation. Among conditions discussed are: Cardiospasm, with and without esophageal dilatations and diverticula; "rumination"; pyloric spasm; and spasm of various portions of the intestine. Diarrhea may often be due to an abnormal hypersensitiveness of the neuromuscular mechanism of the intestine. In cases in which diarrheal movements contain undigested curds it can often be demonstrated that these curds are merely balls of mucus, and when the treatment is based on the idea that these are undigested milk, it is usually fruitless. Reflexes arising from violent sucking at a dry breast or on a nipple with too small an aperture may also lead to diarrhea. Constipation may be the result of a dulling of the rectal reflex through overstimulation by cathartics, from excess of fat, or from underfeeding. Colicky pains are usually due to spasm of the intestinal muscles or of some sphincter. The use of the x ray and bismuth meal is the most valuable means of diagnosing these motor disturbances, but a carefully taken history will usually give a clue to the primary cause which led up to the formation of a bad habit of action of the neuromuscular mechanism.

Subtotal Gastrectomy.—C. Mansell Moullin reports the case of a woman from whom he removed five years ago for cancer the greater portion of the stomach—all except a small area at the cardiac end which was anastomosed directly to the jejunum. The cancerous nature of the mass was proved by histological examination. Up to the present time she has remained perfectly well and shows no signs of any recurrence. Moullin believes that it would be well to perform a partial gastrectomy in most cases of chronic indurated ulcer of the stomach on account of the great frequency with which cancer later develops.

Malignant Tumors of Bones.—R. Wenglowski has devised a new and conservative treatment of these lesions which avoids the resection of bone and the subsequent transplantation of bone into the part. The tumor is removed from the soft parts and all exuberant growth is scraped from the bone, which is laid bare as for resection. The soft parts are then protected by being covered with several thicknesses of gauze, a layer of sterilized asbestos, and lastly, a plate of metal. Then, by means of specially devised instruments, the entire extent of involved bone is killed and completely sterilized with steam. Steam is brought into contact with the bone through hollow metal instruments, either straight or suitably curved and perforated. By tests on animals he found that the temperature in the medulla of a bone could be raised to 80° C. with an exposure lasting from four to four and one half minutes, the steam being applied to the outside of the bone. The process not only kills all the exposed cells but also completely destroys all organisms. The killed bone then corresponds to a section of transplanted bone. "The chief advantage of the method consists in the complete and natural connection of the killed bone with the sound bone, such a connection as cannot be produced by the most ingenious operation. Moreover, the sterilization is technically much more simple and easy than the resection and transplantation."

BOSTON MEDICAL AND SURGICAL JOURNAL

May 31, 1906.

When Is the Diagnosis of Tuberculosis in Children Justified?—John B. Hawes 2d, by tuberculosis understands a clinical disease with definite symptoms requiring definite treatment. A diagnosis of tuberculosis is rarely justified unless there is a positive skin tuberculin reaction. Constitutional signs and symptoms are usually present and require careful study and investigation. If such symptoms are absent, a definite diagnosis is unwise, although this should not interfere with placing the child under proper treatment. Signs referred to the chest and lungs are of interest and value, if present; if absent, their absence should not preclude a definite diagnosis. If present without constitutional disturbance, one should look for chronic influenza and pneumococcus infections. Positive x ray evidence is of value in conjunction with other evidence. Diagnoses based on the x ray alone are apt to be wrong, and are unjust to the patient.

Lateral Curvature of the Spine.—Z. B. Adams says that a careful x ray study in each case is indispensable before treatment. Many cases show a congenital lesion at the lumbosacral junction. The fact that the age, ten to fourteen years, when the anterior lumbar curve becomes constant, is the age when scoliosis develops in a large number of cases, is interesting. At this age the weight of the upper trunk is increasing most rapidly and the epiphyses of the iliac crest have not appeared. The vertebral sacral angle varies widely, but is great in females. The increased tipping throws greater strain, both downward and forward, on the articular processes, and as the angle of inclination increases, the horizontal thrust becomes more vertical and the strains tend to unite. Hence, when

these processes are defective, scoliosis develops. Many of the patients should be operated on either before correction is attempted, or after correction is obtained. A knowledge of the character of the lesion allows a prognosis. This knowledge explains some of the many failures of the past.

Poor Health in the Child.—John Bryant says that adhesions, ptoses, and other demonstrable physical defects, are of very common occurrence at all ages in both sexes, but the frequency of these defects in the adult is not much greater than in the child. It is not improbable that such defects may stand in a causal relation to some at least of the disabilities of the child and of the adult. An anomalous ligament of Treitz may be a factor in obstruction of the duodenum. A simple double measurement of the thorax is described, which is likely to prove an aid in the recognition of certain intraabdominal abnormalities. This measurement is in a variable degree an indicator of physical efficiency, and is useful after the age of five years. The treatment of developmental defects is primarily nonsurgical, and if properly carried out in the child is preventive. It will result in making an adult not only more efficient, but one who may entertain the hope of having physically more perfect children.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

May 23, 1914.

Chronic Backache; Diagnosis of Sacroiliac Relaxation.—R. W. Lovett pleads for the careful etiological study of chronic backache or lameness with a classification which has worked satisfactorily in his practice. Cases are cited to show the variety of symptoms and the way in which treatment has or has not been successful. Treatment of the pelvic variety belongs to the gynecologist; there are besides cases of either static or pelvic cause; in these mechanical treatment may be desirable before operation. The treatment of arthritis of the spine consists of fixation of the spine, and he has found a canvas corset, lacing in the back and reinforced by light steel strips, preferable to the plaster of Paris jacket. In the severest cases, a leather corset or steel back brace may be required. Treatment of traumatic cases does not differ essentially from that of the severer arthritic cases, nor from that of mild static cases. In the treatment of static cases due to overstrain of the posterior musculature, unilateral defects in balance should be carefully studied and corrected. The general health must be inquired into, overstrain and faulty habits of life remedied. Sacroiliac relaxation is commented upon and attention called to the fact that adhesive plaster straps on the skin cannot possibly immobilize relaxed sacroiliac joints which at every step must bear the weight of the trunk. That treatment of this sort often relieves symptoms is fair evidence that the diagnosis is incorrect.

Meckel's Diverticulum; with Especial Reference to Diverticulitis.—J. P. C. Griffith states that affections of Meckel's diverticulum appear to be uncommon, although the organ in some form is found in one to two per cent. of people. He refers to the following conditions: Strangulation of the intestine by the diverticulum or its remains; persistence of the diverticulum with an opening at the umbilicus; formation of a cystic tumor; concretions of varying size in the diverticulum; superinvolution of the diverticulum, with resulting narrowing of the intestine; stenosis of the ileum caused by the traction of a short diverticulum attached to its distal extremity or elsewhere; invagination of the diverticulum, liable to be followed by an ileocecal intussusception; volvulus of the diverticulum, or of the ileum; hernia of the diverticulum; inflammation of the diverticulum. The diagnosis of diverticulitis is summarized as follows: 1. Localization of pain and tenderness, not so often at McBurney's point as somewhat higher and to the right of the umbilicus, or even about it, or in some entirely different region. 2. An area of puffiness or of firm resistance in this region. 3. Absence or slight degree of meteorism, at least early in the attack. 4. Blood in stools and vomited matter. 5. Previous existence of an umbilical fistula, or of some malformation elsewhere in the body.

Supraclavicular Anesthetization of the Brachial Plexus.—H. Neuhof describes a case of collapse following the use of Kulenkampff's method. Ten c. c. of a one per cent. solution of novocaine with epinephrine, after the Braun formula, were employed, and the collapse, he says, may be ascribed to acute novocaine poisoning or to trauma of the brachial plexus. He thinks, however, that supraclavicular anesthetization of the brachial plexus will prove exceedingly valuable when serious complications can be avoided.

A Study of Heat in Cancer.—J. F. Percy calls attention to the original observation of Vidal that methods of treating malignant growths with vaccines and serums are all attended by a reaction, the principal symptom of which is the production of heat. He has devised a practical method for the application of heat in the treatment of carcinoma, a method free from objections, in which penetration of heat can be definitely determined and regulated. This is the application of heat from an electrocautery, accurately controlled by a rheostat and applied to the affected tissues.

MEDICAL RECORD.

May 23, 1914.

Education of the Deaf and Dumb.—N. J. P. Van Baggen states that the principal object of the instruction of the deaf and dumb child has always been to withdraw it from its mental isolation and to facilitate intercourse with its fellow creatures. There has been constant progress in the instruction of the deaf mute. To Heinicke belongs the credit of first founding (1777) the German or oral system on a solid basis. In reviewing the sign and oral systems, we find the latter supplanting the former; there is now scarcely an institute where the sign system has not been brushed aside. The oral system allows its pupils to hold intercourse with every one, instead of only with other deaf mutes and the few who are familiar with the sign and manual language. There is another advantage, of far deeper meaning. The sign and manual language is purely artificial; it avoids the difficulty the deaf mute has in using articulate speech, while the oral system attempts the restoration of normal speech, and therefore must be considered as the healing or hygienic system. It tries to take advantage of the remnant of hearing which many of the

deaf and dumb possess. The author discusses the questions, Which is the best means of measuring the hearing of deaf and dumb pupils? How can we best awaken and improve their hearing power? What are the obstacles encountered during the process of exercising the hearing?

Calcium in Tuberculosis.—M. Kahn reviews the literature practical and experimental from the time of Fourcroy (1783), and feels doubtful whether lime in the treatment of tuberculosis is to be recommended. However, he says, there is no danger in its use, and, according to a number of physicians, it is of marked benefit.

Pulse Pressure in Diagnosis and Prognosis.—J. S. Lankford asserts that experience is daily proving that a blood pressure reading is not complete, and may be very misleading if the pulse pressure—the difference between diastolic and systolic pressures—is not ascertained. He cites a number of illustrative cases, and states that the method of auscultation which he describes, is the best way to obtain the pulse pressure.

Scarlatina Treated with Vaccines and the Method of Milne.—E. C. Schultze and L. A. Goldberger attach etiological importance to Micrococcus *"S,"* which was described by Schultze in 1910. To determine the value of the discovery therapeutically, they decided to treat all their scarlet fever patients with a vaccine prepared from this microbe. Beside the vaccine injection, all patients received a preliminary course of eight or ten doses of calomel (0.1 to 0.25 gram), and castor oil or magnesium citrate. Their throats were swabbed with a solution of phenol in oil, and their bodies rubbed with a ten per cent. solution of eucalyptus in oil, as advocated by Robert Milne in 1908. On account of a too great absorption of phenol, as evidenced by smoky urine, they found it better to use a five per cent. solution. In 121 of the cases only one injection of vaccine was necessary; in the other seven from two to four injections were given. The reaction was rather striking. The temperature fell by crisis, and not by lysis as described in the textbooks, reaching normal in from twenty-four to seventy-two hours. The general condition improved. In some cases the rectal temperature registered 104° or 105° F. In the 128 cases, there were two deaths (1.5 per cent.). One other death occurred, but a complicating meningitis really caused the fatal result. An analysis of the results shows the following: 1. Rapid improvement in most cases, the temperature falling by crisis. 2. Comparatively few complications. 3. Very few secondary contact cases occurred. 4. Scarlet fever could probably be much reduced if all school children were examined by the health authorities at the beginning of each term, and during the school year; cultures being taken from their throats and examined for Micrococcus *"S,"* as well as for Klebs-Loeffler bacilli.

ANNALS OF OPHTHALMOLOGY

April, 1914

The Eye Grounds in Psychosis.—William L. Benedict reports examinations of the fundus in psychopathic individuals in a table that shows the number of cases in each psychosis, the number in which the fundus was normal, the number in which papillitis, retinitis, low grade neuroretinitis, hyalitis, arteriosclerosis, central choroiditis, and diffuse and disseminated choroiditis were present; also the number in which the Wassermann blood reaction and the cerebrospinal fluid were positive. He concludes that well defined disorders from extensive morbid conditions may exist for some time without change in the ophthalmoscopic appearance of the eye grounds. Cases of dementia præcox, either slowly developing or rapidly deteriorating, show no associated disc changes peculiar to this disease, but, on the other hand, show a higher percentage of normal fundi than either the organic or functional groups of psychosis. In functional psychoses, there is no definite association between the mental disorder and the ophthalmoscopic appearance of the fundus.

INTERSTATE MEDICAL JOURNAL

May, 1914.

Current Vaccine Therapy.—A. P. Hitchens says that problems of vaccine therapy at the present time are really problems in hydraulics. A certain area contains substances which should be removed; we have a high pressure main containing fluids which will remove them if the fluids can be brought to bear; we need information upon the possibility of opening up our channels of irrigation so as to effect the desired result. We need first a survey: How are the bacteria placed with regard to the barriers surrounding them? What channels are available? How can we best make the channels serve our purpose? Wright has already pointed out a number of accessory methods of value to the immunizator. His suggestions concern chiefly the use of sodium citrate for increasing the fluidity of the blood and physical and mechanical contrivances for increasing the flow of blood through the infected part. The author believes there are materia medica preparations which, if properly used, would be of equal accessory value. In the treatment of acne, for instance, would it not be possible by small doses of certain drugs to cause a temporary flushing of the face which would be as effective as facial massage at prescribed times.

Internal Secretions and Dental Caries.—H. P. Pickerill contends that there are deficiencies of the thyroid, and perhaps of the pituitary and thymus, which may be concerned in lowering the resistance of tissues to dental caries. It is necessary, however, to be careful of generalization—because thyroid deficiency may be a causative factor in certain patients, it does not follow, *ipso facto,* that it is always a cause of caries. There are many other factors, physiological and pathological, to be considered.

Gallbladder Dyspepsia.—W. F. Cheney states that different and entirely opposite types of dyspepsia seem to be associated with different cases of gallstones, or cholecystitis. The three most often met with are hyperchlorhydria, the clinical history resembling that of ulcer; subacidity or achylia, the symptoms suggesting the possibility of cancer; and disturbance of motility, with atony, myasthenia, and food stasis. As regards the gallbladder, there may be no symptoms nor signs pointing to it. In another group of cases, the manifestations are mixed,

and are mainly those of dyspepsia, interrupted at times by those of true biliary colic.

The Present Treatment of Pneumonia.—Elsworth Smith believes that, though every encouragement and success should be granted bacteriology, it is opportune to sound a definite warning against the indiscriminate use of the many biological products vaunted as cures in pneumonia, but which do not comply with the requirements of the scientific laboratory; being simply combinations of poisonous organisms made up on the shotgun plan, in the hope of hitting the bull's eye. Practically, it would seem to him that the only serums and vaccines which we are justified in trying today are those of Cole and Rosenow.

JOURNAL OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

March, 1914.

The Pathological Tonsil.—Hugh Miller believes that malposition of noninflammatory faucial tonsils may, at times, be responsible for disturbances within the middle ear, and cites cases in which aural suppuration has ceased following enucleation of these glands. The theory is that the tonsils are situated above the horizontal portion of the palatoglossus and palatopharyngeus, and that these muscles tend to force the tonsils upward and outward toward the pharyngeal opening of the Eustachian tube, interfering with its function by partially, or even completely, occluding its opening. The resulting accumulation of secretions frequently produces complications within the ear of far reaching extent. On the other hand, when the tonsils are low down in the fossa, and loosely attached to the capsule not unlike a polyp, they may rest upon the dorsum of the tongue, or even exert pressure upon the epiglottis and upper part of the larynx, producing a reflex cough and frequent desire to swallow.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

April, 1914.

Anatomy Applied to the Diagnosis of Medical Conditions.—W. E. Robertson and J. B. Roxby discuss the clinical significance of the relations of the ethmoid cells and sphenoid sinus to the optic nerve and ophthalmic division of the fifth; the anatomical basis of transferred abdominal pain in intrathoracic disease; the clinical significance of the autonomic cerebrospinal arc; sacroiliac disease and possible diagnostic errors in the lumbosacral plexus distribution, and the cause of abdominal pain in angina pectoris. In one of their angina pectoris patients, there was noted, in addition to the usual pain in the precordium and left arm, a pronounced hyperesthesia over the chest and abdomen, with hyperalgesia and actual rigidity in the epigastrium, lasting several days. There is no unanimity of opinion as to the manner in which pain is produced in angina pectoris. The authors consider that all pains of exocardiac situation in this disorder, including those in such more or less unusual localizations as the epigastrium, testicles, and legs, can be explained from the fact that a rich plexus of autonomic fibres surrounds the aorta throughout its length, which fibres are in nervous relation with cord segments at every level. The constancy of arterial degeneration, notably of the aorta, in angina pectoris renders it probable that the aorta is the origin of the pain. The seat of the pain doubtless depends upon the part of the aorta especially involved and the autonomic cerebrospinal association of the surrounding plexus.

Digitalic Acid.—L. Kolipinski describes digitalic acid as a white, crystalline substance with an acid taste and peculiar rancid odor, soluble in water or alcohol. Its digitalis effects are very prompt, and are not marred when very large doses are given. It seems devoid of the property of causing toxic cumulative effects. The author gives it in pill or tablet form in a single daily dose of 1/32 to 1/16 grain, but has used as much as ¼ grain a day without untoward effect. Such a large dose does not cause any more marked digitalis action than the smallest dose mentioned. Sodium digitalate may be given in like doses, and is suitable for hypodermic injection. When ingested, the digitalate begins to act within an hour, and the effect lasts one to three days. Where the hypodermic route is used, there is local smarting for a few minutes, but induration or inflammation never follows; the action on the pulse and heart sounds appears in fifteen to thirty minutes. For prolonged use digitalic acid is the best form in which foxglove can be given. When ordinary digitalis begins to cause headache, vertigo, vomiting, and purging, digitalic acid may be substituted, the symptoms ceasing forthwith.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and Eighth Annual Meeting, Held in New York, April 28, 29, and 30, 1914.

The President, Dr. WILLIAM FRANCIS CAMPBELL, Brooklyn, in the Chair.

Exophthalmic Goitre and Its Treatment.—Dr. JOHN ROGERS, of New York, stated that the first stage was a simple hypertrophy, and following this or coincident with it there was more or less hypothyroidism: after this they had the third stage or hyperthyroidism. After hyperthyroidism they had exophthalmic goitre, but only in twenty-five per cent. of the cases he had seen had there been exophthalmos. If the disease lasted long enough the exophthalmic goitre was followed by a fifth stage or myxedematous condition. The irregular types of exophthalmic goitre could be grouped more or less into different stages which were prolonged in a given case. As to the prognosis in exophthalmic goitre, over eighty per cent. more of deaths occurred in the exophthalmic stage than in the hyperthyroidism stage. The apparent cause of thyroid abnormalities was fatigue, a simple hypertrophy which was so common, with the multiplication of glandular elements in response to demands put upon the thyroid which were greater than the normal organ could supply.

The antithyroid serum seemed to be the best conservative medical treatment. It should not be persevered in, except for a short time. The cases

could be much better cured by ligation of the vessels. Hemithyroidectomies were much less numerous than ligation of the vessels, which could be done under local anesthesia. The exophthalmic cases could be treated better by ligation of the vessels. He ligated all four of the thyroid arteries and tied off the tip of each upper pole.

Dr. Martin B. Tinker, of Ithaca, stated that the chief pathological conditions were limited to the thyroid gland in the early stages of the disease. In many cases physicians allowed patients to go on with thyroid trouble until they got a dilated heart or were on the verge of insanity, until they had cirrhotic changes in the kidneys and liver and other secondary conditions, and they were confused by the conditions which arose as the result of thyroid poisoning. If the disease was recognized early, many lives might be saved. He had urged on many occasions that the treatment of hyperthyroidism should be undertaken before serious trouble had occurred in other parts of the body. Two patients within a year came to him who had gone to insane asylums. Whether their insanity could have been prevented in the early stages, if treatment had been undertaken, no one could tell, but there was good reason to believe that if these patients were taken early they might be saved many of the results which occurred later.

Doctor Barringer, of New York, generally found in these cases that there had been a history of overwork. In 196 cases the history of overwork had doubled a history of fright. There patients fainted without the slightest provocation. In this group there had been various disorders, such as delayed menstruation; sometimes profuse menstruation had been complained of more than amenorrhea. A large percentage of this group had had infectious diseases. A proportion of them had had adenoids, enlarged tonsils, and appendicitis. A high percentage of them were anemic. The early cases could be cured by taking them out of school life and prescribing prolonged rest.

Value of Tests for Functional Activity of the Kidney before Operation.—Dr. James N. Vander Veer, of Albany, said that the so called phloridzin test was too sensitive. Phloridzin indicated the extent of kidney parenchyma which was capable of functioning. As to the methylene blue test, only fifty per cent. of the drug was excreted, and it appeared as chromogen in the urine, requiring the use of acetic acid and boiling to demonstrate it. This test was too prolonged to be used advantageously. Letters received from 150 surgeons showed that sixty to seventy per cent. used the phthalein test when they operated on patients. No more striking evidence of the keen desire for increased accuracy in diagnosis and prognosis in urinary surgical work, was to be found than in the persistent and laborious attempts made in order to arrive at a trustworthy method of estimating the functional value of the kidney. Failure of renal function was responsible for a certain proportion of the death rate.

Doctor Ware, of New York, said the statistics of Young and Freyer, when there were no functional tests of the urinary tract, were just as good now as then. He recalled, years ago when Young reported 100 prostatectomies with no deaths, and did not make use of functional tests.

Doctor Gibbons, of New York, had operated in a great many cases of cancer of the breast without making use of functional tests of the kidney, and no patients had died on the table or as the result of the operation; but he packed all around the chest with hot towels. It was a matter of having sense not to operate on dying patients. Some might call it sense; he called it surgical cunning. A friend of his used to say that if the pathologist said cancer, the patient would live; if he said the disease was not malignant, the patient would die.

Dr. Paul Pilcher, of Brooklyn, believed in the value of the phthalein test. During the past year or so he had lost cases by operating, when it seemed that if he had been warned beforehand that there was something wrong with the kidneys, he might not have operated, or if he had waited and prepared the patients properly, and operated some time later, life might have been saved. Many a patient would be saved by knowing which of the kidneys was doing the better work.

Dr. Edwin Beer, of New York, agreed that functional tests, properly interpreted, would save a great many lives. He was convinced that practically all these tests had their indication and were of value, and by carrying them out they would prevent a great many deaths which would otherwise follow operations.

Transfusion of Blood, Direct and Indirect.—Dr. John A. Hartwell, of New York, said that in hemorrhage, transfusion was of value, provided it was properly done. Transfusion in cases of ectopic gestation where rupture had occurred, in gastroduodenal ulcers, and typhoid fever was indicated and was valuable. He encouraged transfusion in the more advanced cases of splenic anemia, pernicious anemia, and the severe grades of anemia of unknown origin. Transfusion as a therapeutic agent in pernicious anemia had been of only temporary value. Transfusion was a valuable aid in the treatment of septic conditions, although the results reported by some had been disappointing.

Dr. George W. Crile, of Cleveland, said that Doctor Hartwell had not referred to transfusion of blood in acute surgical shock, or in patients on whom through emergency it was necessary to perform a major operation. There was no question whatever that in acute surgical shock direct transfusion of blood had given the greatest amount of relief and would revive a patient better than any other method. He had used it many times in acute traumatic cases.

Dr. David J. Kaliski, of New York, said that preliminary tests before transfusion were important in preparing for it. It had been his practice to make preliminary blood tests in all cases before transfusion, and by this means he had been able to rule out accidents during transfusion which might occur either from hemolysis or agglutination or from both. A Wassermann test was made in every case to rule out syphilis.

Dr. Robert H. M. Dawbarn, of New York, had recently obtained remarkable results in the class of cases under discussion by the addition of large doses of ergot to the saline solution. He asked the

members to try it and report. There was not a single case on record of death from an overdose of ergot, and it had been given in large doses in cases of congestive headaches. The dose was half an ounce of ergotal with about 1,800 to 2,000 c. c. of normal saline.

Uterine Hemorrhages in Young Girls.—Dr. HENRY C. COE, of New York, stated that in the absence of any discovered cause for the hemorrhage, local or general, the practitioner was thrown back upon experimental medicine, and must interrogate rigidly the ductless glands, with more or less doubtful results. Organotherapy must be regarded as the best curative agent. The prognosis must depend upon the actual or supposed cause of the condition. Care should be exercised in making caustic applications to the endometrium, which were not absolutely controllable and might cause irreparable injury to the delicate organs in subjects of tender years. One of his colleagues had met with success in the treatment of obstinate hemorrhage in young women, by ligation of the uterine arteries per vaginam, which was practically out of the question in young children. The writer could conceive of cases in which explorative abdominal section might be elected, even when pelvic examination was negative, but it would be a desperate case indeed in which both ovaries should be removed, not to speak of supravaginal amputation of the uterus.

Dr. HARVEY P. JACK of Hornell, had had many cases of hemorrhage in young girls. In several repeated curettements, hygienic measures, parotid gland, and thyroids had been administered without relief. These cases seemed hardly to recover from the exhausting hemorrhage of one menstruation before another began. Thyroids in small doses, long continued, had proved of great benefit in a few, but the agent that had cured every one of these severe cases so far, and two were now under treatment, was calcium chloride. One girl in particular had been brought from a bleached out nervous wreck to brilliant health by the use of this drug alone.

Sterility in Women.—Dr. WILLIS E. FORD, of Utica, said that formerly he was accustomed to use galvanism for a considerable period in these cases to cause development of the uterus after slitting the posterior neck and divulsion, and he had the history of many cases in which pregnancy followed, even after a lapse of a number of years. This treatment had to be carried on, however, for several months, and the results were good for a time, but he did not think they compared with the shorter and more simple procedure advocated by Pozzi, especially with respect to the permanency of results. He had been at work long enough to follow the histories of many young girls for ten years or more and up to the time of their marriage, and even afterward, and he was convinced that if early and complete drainage was secured through the uterus by this simple procedure in the few cases of cervical deformity, many serious conditions met with later in life would be prevented and sterility avoided in many instances.

Dysmenorrhea.—Dr. ROSALIE SLAUGHTER MORTON, of New York, had been much astonished in looking over the literature to find so many gynecologists who considered pain at the menstrual period normal. Martin, of Germany, designated as dysmenorrhea those disturbances which most women experienced at the time of menstruation, such as pains in the back, discomfort, continual desire to urinate, etc., and said that these were attendant symptoms which were borne by women uncomplainingly. Anteflexion was more commonly associated with pain. He had seen these cases do well with systematic regulation of diet, the drinking of sufficient water, proper hours of sleep, and graduated outdoor and indoor exercises, with a strict attention to the minor troubles, bringing these patients from semiinvalids to efficient individuals. The working classes were troubled with dysmenorrhea, the percentage depending largely upon the development of the individual. Kelly found that seventy-five per cent. of the college women suffered from dysmenorrhea. Doctor Morton had found poorly nourished, overworked store employees to the extent of seven per cent. with no pain at the menstrual period. In several young patients with habitual constipation, with no definite pain at the onset of menstruation, with uterus and annexa normal, there was prolapse of the sigmoid, and by correcting this condition the dysmenorrhea had disappeared. She recommended postural treatment.

Doctor Morton exhibited and demonstrated a table for use in cases of abdominal ptosis. The force of gravity relieved the anteflexion and the prolapse, and the amount of inclination which could be given to the table in the treatment of cases, was such that she found it valuable in giving douches to patients who had inflamed vaginal vault or a congested cervix.

Dr. CAROLINE S. FINLEY, of New York, stated that mothers asked her whether they should keep their girls in bed the first day during the menstrual period, and she always advised them, if the girls were normal, not to do so. There were several physicians who believed that women who remained in bed the first day of the menstrual period did not have a more normal menstrual life than those who did not. She emphasized the role of errors of digestion during menstruation; pain might be due to intestinal indigestion. By relieving the constipation they therefore helped mild cases of dysmenorrhea. Again, so many patients of hers would say that their daughters had leucorrhea and were "scared to death." She found on examination it was simply a serous discharge which came before the menstrual flow and which was one of the safeguards.

Dr. I. C. RUBIN, of New York, said that theoretically, there was every reason to agree with Doctor Morton as to pelvic congestion causing the pain which was common in dysmenorrhea. If one used the seventy-fifth of a grain of atropine, a tablet, three times a day, it would cause cessation of pain. It must be taken a few hours before the expected period. The atropine was supposed to affect also the uterine muscles. A great many unmarried girls, especially factory girls, suffered more from dysmenorrhea than girls in better social states.

Dr. MARY T. ROSE, of New York, said there was one point the general practitioner should emphasize, that the congestion in these cases was due to re-

tention in the rectum. She found this especially in women with dysmenorrhea symptoms. A good deal of their trouble was primarily the retention of fecal matter.

Pregnancy in a Tuberculous Woman.—Dr. E. Parry, of New York, said that if a woman with tuberculosis became pregnant, she might bear the first pregnancy well, the second pregnancy not as well, and the third one not at all. After parturition, tuberculosis advanced rapidly. A woman should never become pregnant who had tuberculosis. There were ninety-seven cases of laryngeal tuberculosis reported in the literature, and of this number ninety were fatal. Actively tuberculous patients should be forbidden to marry, or if they did marry they should not become pregnant, or if they become pregnant, a therapeutic abortion should be performed.

Dr. Ralph W. Lobenstine, of New York, stated that not infrequently pregnancy, especially if too rapidly repeated, would lay the foundation for tuberculosis. That point was generally overlooked. Either pregnancy or the act of parturition aggravated the existing tuberculosis in a large percentage of cases. In von Bardeleben's cases forty per cent. proved fatal. In our series fifty per cent. of the severe cases ended fatally within two months post partum. The bad cases lost rapidly, either during labor or within three weeks post partum. During the puerperium the tuberculosis might assume a fulminating character and cause death in a surprisingly short time. The causes of the rapid changes post partum were briefly these: Prolonged muscular exertion of labor, loss of blood, use of anesthesia, and the possibility of toxins or tubercle bacilli being forced into the system from the placental site all of these were serious and far reaching in their results. Therapeutic abortion was indicated in the early months in all active cases. This was the only time they might have success; later they would not have success. Tuberculous individuals should not be allowed to marry. He felt strongly about this, and said that if they married they should be forced to keep from propagating.

Dr. John O. Polak, of Brooklyn, was in full accord with the position taken by Doctor Lobenstine and Doctor Parry as to tuberculosis and pregnancy being incompatible in certain stages of the disease, and when they had the indications, as they did in any active process, for interference, they should resort to it. He spoke particularly of the method of emptying the uterus. A considerable experience had shown that unless in these cases the uterus was emptied early they had a very prolonged abortion, so to speak, by the ordinary expectant plan. Under local anesthesia these patients could be delivered by a vaginal hysterotomy at the third month. Before the eighth week ordinary curettage could be done without the slightest difficulty. After that time, when placental formation had taken place, he advocated anterior vaginal hysterotomy under local or spinal anesthesia.

Infection with Bacillus coli communis Complicating Pregnancy.—Dr. Edward P. Davis, of Philadelphia, stated that colon bacillus infection of the large intestine complicating pregnancy was seen in women who had neglected hygienic precautions during pregnancy, who had remained obstinately constipated, or who had taken irritant drugs to empty the bowels. The pain was usually localized in the intestine and not in the peritoneum. The colon bacillus might affect the newborn infant, causing icterus and ophthalmia. It might be the cause of septic abortion or of septic infection. The treatment of colon bacillus infection of the bowels was prompt removal of the appendix. The writer had seen numerous cases where symptoms did not justify surgical interference and the patients recovered with medical treatment. In cases of infection of the uterus and appendages by the colon bacillus, as determined by an examination of the contents of the uterus, the treatment did not differ from puerperal infection of other origin, except in a tendency to mixed infection, and pus formation which must be remembered. In these cases pelvic abscess might be expected and demand drainage.

Cystitis colli or Trigonitis.—Dr. Henry D. Furniss, of New York, said that before the use of the cystoscope, these patients were all considered as neurotics or as patients with irritable bladders. Authorities had attempted to separate these cases of cystitis colli, referring to one variety as the noninflammatory and the other as the inflammatory type. In the noninflammatory type the trouble at the neck of the bladder might be due to pressure from a retroverted uterus, a pelvic growth ,cystocele, or any other cause of pelvic congestion. He was of the opinion these were coincident infections, and very seldom was there any other form of cystitis colli than that due to infection. The two principal infections were gonorrhea and colon bacillus. The best results were obtained by local treatment to the trigonum with three to eight per cent. nitrate of silver. The nitrate of silver was neutralized by the urine.

Dr. John O. Polak, of Brooklyn, had found these infections more frequent than previous writers had been inclined to consider them. For several years he had discarded vulvar pads, having found a direct relation between the number of bacillus infections sufficient to convince him to discontinue the vulvar pads. The intestinal tract was apt to soil the vulvar pads and infect the wound frequently from the vulva and so cause infection of the genital tract. He had found post partum a large number of cases of cholecystitis, the majority having subsided under the expectant plan of treatment, to fall later into the hands of the surgeon for operation for chronic gallblader inflammation. He had seen many cases of appendicitis during pregnancy associated with colon bacillus infection of the kidney. He had seen a number of cases of appendicitis in the puerperium; but he had yet to see a case of colon bacillus infection of the kidney that necessitated the interruption of pregnancy.

Dr. Reginald M. Rawls, of New York, had gone over the reports of about 400 cases in the literature and found that the great majority of cases of colon bacillus infection recovered spontaneously under conservative treatment. He would not be so radical as Doctor Davis in recommending operation in so many of the cases.

Dr. Paul Pilcher, of Brooklyn, stated that one of the most dangerous things they could do was to

resort to surgery upon a kidney with infected pelvis, and if they were going to cut a kidney in the presence of infection, they should end in the majority of cases by taking the kidney out. His results in the cases of pyelitis in pregnancy had been very good and in none had he operated upon the kidney. He had drained many of them. As to infection of the intestinal tract from colon bacillus, Doctor Davis said appendicectomy had been done in a number of these cases. He would like to suggest one other thing. He had found the greatest advantage of a permanent nature to come from appendicostomy rather than from appendicectomy. As to infection at the neck of the bladder, he was not quite willing to call these cases cystitis colli. They seldom saw the bladder infected in these cases; it was rather a disease of the urethra. The treatment was applied to the neck of the bladder and the urethra rather than to the bladder itself.

Dr. ROSALIE S. MORTON, of New York, believed this condition to be one which was frequently overlooked. She had had under her care a young woman who had suffered with this infection as a result of tears at the time of an instrumental delivery, four years ago. If the attention of the profession was called to the frequency of this infection, she was sure many of these patients would be saved from years of invalidism.

Methods of Treatment of Puerperal Infections Which Have Given Improved Results.—Dr. RALEIGH R. HUGGINS, of Pittsburgh, stated that 125 cases of infection following abortion after the second month of delivery, had been treated in a conservative manner as far as the inside of the uterus was concerned, with the exception of cases where firm contraction of the uterus was not present, or where it could not be secured by the use of strychnine, ergot, or pituitrin, nor the uterine cavity firmly packed with iodoform gauze. This was done for the purpose of securing firm contraction, if the uterus had not been emptied to secure expulsion of the contents. The satisfactory use of magnesium sulphate locally in erysipelas led the writer to try it in the treatment of puerperal infection. At first it was given in a one per cent. solution of saline and about thirty grains at a time. Later it was learned much greater quantities could be given safely, if given slowly. Doctor Harrar, of New York, had used 250 grains without any alarming effects. Distilled water had been used instead of saline, and there had been fewer chills following its administration. There had been no accidents from its use, and he had given it more than 150 times. It was not bactericidal, but the tissues were stimulated to greater resistance.

The most rational treatment in the beginning of every case of sepsis starting within the uterus, was based upon a keen appreciation of the pathological condition present. The first most important indication was to secure firm contraction of the uterus; second, a healthy respect for Nature's protected zone, and in this way to limit the spread of the infection. Good drainage was also an important factor and was secured by placing the patient in a sitting position. Active general measures, such as attention to diet, elimination, and fresh air were the important factors in the treatment of puerperal infection.

Doctor JAMES A. HARRAR, of New York, had used the intravenous infusion of two per cent. solution of magnesium sulphate in freshly distilled water in a number of cases of streptococcic toxemia, and in twelve cases of streptococcic bacteriemia, proved such by repeated positive blood cultures. Doctor Huggins had been extremely fortunate in securing such a large number of bacteriemias upon which to test the blood, and his results had certainly been extraordinary. In a large service, as at the Lying-in-Hospital, of over 5,000 puerperal women a year, including infected post partum cases sent in by doctors and midwives, they had had in three years but twelve cases of bacteriemia in which to use the injections. That bacteriemia was more often suspected clinically than was proved by blood cultures, was demonstrated by a former pathologist, Doctor J. E. Welch. In 176 cases referred for blood cultures prior to 1908, he secured positive cultures in but forty-six. Of these forty-six patients, forty-three died under ordinary methods of treatment. Since then in the twelve cases of bacteriemia treated with magnesium sulphate, the results had been as follows: Three patients were admitted to the hospital late in the course of an acute pyemia with multiple abscess formation, and died shortly after a single infusion given as a last resort. Three more with such complications as peritonitis, panophthalmitis, and septic embolus in the pons, died after three or more injections with only temporary improvement. Six cases with hemolytic streptococci in the blood ended in recovery. Some patients during convalescence suffered from secondary abscesses, but with increased resistance were able to overcome the infection. Four of the six patients who recovered were desperately ill when first seen, delirious, and in a low typhoid state. They were of the type in which the prognosis heretofore had been quite hopeless. The other two were cases which presented high temperatures, but no mental symptoms and did not give the impression of being in very bad shape at any time. Doctor Meltzer warned against the depression of the respiratory centres by magnesium sulphate, but in considerably over 100 intravenous injections of from 200 to 400 c. c. of a two per cent. solution of the salt, he had seen no toxic effects of any kind.

Doctor SAMUEL J. DRUSKIN, of New York, pointed out that in the cases under discussion, the bloodvessels extending to the mucous lining were filled with clots, but the middle and outer layers were not. He also found the same reaction in the normal uterus. These clots were soft and had a tendency to break down. It had been demonstrated that the chorionic villi penetrated the mucous membrane, split the inner muscle fibres and bundles, and there was penetration of the bloodvessels near the inner surface of the uterus. The bloodvessels reacted by hyaline degeneration, and there was a tendency toward splitting of the coat of the bloodvessel. The effect of this was, when the uterus contracted after parturition, that the inner muscular layer did not close up and press the blood out

of the vessels. The bloodvessels themselves, even arteries, did not react as they normally did, and had a tendency to become thrombosed. It would appear that the condition was not primarily an infection due to microorganisms, but that they had, first, closure of the bloodvessels from thrombi, which later on became infected.

Letters to the Editors.

A FRAUDULENT SUBSCRIPTION AGENT.

New York, *May 30, 1914.*

To the Editors:

There is a young man going around getting subscriptions for a Jewish weekly paper. This man is an imposter and has no such authority. He has swindled many physicians, including myself. If he should call on any physician kindly put him off till the next day at a certain hour and telephone to me that I may be on hand to arrest him.

H. Reiter, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Geriatrics. The Diseases of Old Age and Their Treatment. Including Physiological Old Age, Home and Institutional Care, and Medicolegal Relations. By I. L. Nascher, M. D., New York. With an Introduction by A. Jacobi, M. D. With 50 Plates, Containing 81 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1914. Pp. xviii-517. (Price, $5.)

This book is of value to every clinician or specialist who is conscious of professional duty to the advanced in years. It is replete with information culled from all available sources, on the physiological and pathological processes as they occur in the aged. The term *geriatrics* is compounded of *geron,* "old man," and *iatrikos,* "medical treatment."

Dr. Abraham Jacobi, oblivious of an admirable French work on the subject, contributes an introduction, in which he calls this the "first modern, comprehensive book on the normal and morbid changes of old age." "Premature incompetency and premature death mean private and collective bereavement," and it is the domain of the physician to combat them. Hitherto, the study of age peculiarities has been made of the child only, and with admirable thoroughness; while that of senility has suffered neglect; yet it will well repay one to become familiar with this admirable aggregation of information. It took a long time for pediatrists to realize the immensity of the field of developmental peculiarities they are now so admirably elaborating.

The chapter on childhood and old age is an admirable summary of comparisons of physical traits. "Metabolic activity is altered in old age and markedly different from metabolic activity in childhood. In childhood there is active destructive and constructive metabolism, the regeneration being in excess of the waste. . . . In old age metabolic activity is lessened, the anabolic processes being less active than the catabolic processes. Insufficient repair is found more especially in the higher order of tissues, the brain, marrow, spleen, and muscle, tissues which require a plentiful supply of blood for their nutrition, while in the lower order of tissues, like connective tissue, fat, and hair, there may be increased growth." (Pp. 7-8.) Doctor Nascher says of mental traits: "Whatever acts the aged individual performs are the result of a conscious purpose and reason or else of habit or irritation. Sense perception is strong in childhood, weak in old age. This weakness is due partly to impairment of the sense organs, partly to weakened mental perception. Memory is strongly developed in the child; it receives impressions, stores them, and recalls them at will as mental pictures, sounds, or other sensations, without apparent effort. In the aged only powerful impressions or those directly affecting the individual are retained." (p. 9.) "The child, in its general conception of life and the world, gives no thought to its somatic self; the aged gradually constricts his conception of life and the world until it is centred upon himself; his interests are all concentrated in the preservation of his life. While the fundamental difference between the young and the old organism must be sought in some essential change in the character of the cell, the fundamental difference between childhood and old age can be summed up in this: Youth wants to know; age waits to be." (P. 10.)

Then follows a series of careful chapters on physiological old age, and a much larger number on pathological old age, divided into primary senile diseases and secondary senile diseases, modified diseases of old age, preferential diseases of old age, diseases uninfluenced by old age, concluding with a department on hygiene and medicolegal relations.

We heartily commend the use of this excellent book to all clinicians.

Dental Diseases in Relation to Public Health. By J. Sim Wallace, D. Sc., M. D., L. D. S., Formerly Dental Surgeon and Lecturer on Dental Surgery, London Hospital. London: Published at the Office of the Dental Record, 1914. Pp. 90.

The author of this short essay had the purpose of bringing home to physicians the importance of a knowledge of the physiology of oral hygiene. He feels that the subject has received very scant attention in the medical schools, yet it equals in practical importance the physiology of the heart, liver, or any other organ. He accentuates the prevalence and seriousness of diseases caused and aggravated by dental disease and explains the means of prevention. A most important chapter on children and dental diseases terminates the volume. The writer speaks with the authority of long experience as a dental surgeon and teacher, and has written other articles pertaining to the correlation between dental disease and public health, both in infancy and adult life. The subject is presented in a systematic and broad minded way and cannot fail to carry conviction. It would be profitable reading for every physician, particularly as so little attention is given the subject by those having in charge the education of our medical students.

Bibliography of the Education and Care of Crippled Children. A Manual and Guide to the Literature Relating to Cripples Together with an Analytical Index. By Douglas C. McMurtrie. First Edition. New York: Douglas C. McMurtrie, 1913 Pp. xii-99.

The author of this most exhaustive and useful bibliographical list pertaining to the literature on the education and care of crippled children, has experienced great difficulties in his task on account of the scarcity of comprehensive books or articles on the subject, and the slight interchange of experience among institutions and workers in this field. There are 724 articles listed and most of these the author has personally gone through; to anybody starting on the same mission, this manual will be of inestimable value. It is brought up to August, 1912, and makes available what has been written in all languages about the care of crippled children. The book is carefully indexed according to names of articles, authors, and countries.

Die moderne Therapie der Gonorrhöe beim Manne. Ein Leitfaden für Studierende und Aerzte. Von Prof. Dr. Paul Asch. in Strassburg i. Els. Mit 25 Abbildungen im Text. Bonn: A Marcus & E Webers Verlag, 1914. Pp. 84.

This small volume exhibits that cut and dried type of deduction which is the result of too much condensation. We doubt very much whether many of the author's views will meet with approval in this country. He believes, for instance, that for the incubation period of gonorrhea to extend from four to eight weeks "is not so rare as we have been in the habit of thinking." He follows this, however, with the statement that gonococci may appear in atypical forms; in some instances simply as round cocci. He believes in primary gonorrheal epididymitis. He states that even without local treatment only twenty to forty per cent. of his acute cases show posterior urethritis, while with local treatment, only in seven per cent. has posterior urethritis developed, and in none epididymitis. He be-

leaves in abortive treatment by irrigations with argyrol and is enthusiastic about electrargol injections for epididymitis. Beyond this the book presents the usual suggestions for local and systemic treatment; especially urethroscopic treatment.

Interclinical Notes.

In *Harper's Bazar* for June 1, 1914, is an exquisite allegory, The Seeding Ground, by Inez Haynes Gillmore; although it is concerned with sex to the *n*th power, we believe that it could be read without adverse comment in a Presbyterian assembly. Even to us this was more than a fine piece of prose poetry; a woman reader ought to be shaken by it to the very centre of her being.

* * *

Our old friend, Dr. Ben Trovato, tells us that his realization of *Per aspera ad astra*, is devouring an artistically planked shad.

* * *

Pathfinders of Physiology is the title of a sixty-six page book written by our colleague, J. H. Dempster, A. B., M. D., editor of the *Detroit Medical Journal;* it is the result, he says, of his indulgence in biography as a recreation. Notwithstanding the title, the chapter headings do not bear the expected names, but, instead, physiological processes such as circulation, respiration, etc. The book would have looked better without the black letter side heads. We commend the work to our friends, however, particularly to those interested in the history of medicine, as a well written and entertaining contribution to biographical medicine, worth much more than the one dollar charged.

* * *

G. P. Putnam's Sons have issued at $1.75, a *Textbook of Anatomy and Physiology for Nurses*, by Amy E. Pope, with 135 illustrations, several of them handsomely colored. The author has handled her difficult task well and has produced a useful and not too exhaustive work. The trouble in writing scientific works for nurses is to know where to leave off, that the pupils may not, on the one hand, acquire a mere smattering of the subject, and, on the other, learn a useless and burdensome amount of detail. Discretion has been used in this finely printed and creditable book.

* * *

It is reported from Peking that persons under forty years of age living in the province of Sze-chuen are to be shot if they persist in the use of opium. This radical method of cure is commended to the attention of the various crusaders of New York State; the same remedy could be used on physicians who object to having the control of poisons removed from their hands to those of morally irresponsible laymen.

Meetings of Local Medical Societies.

MONDAY, *June 8th.*—Society of Medical Jurisprudence, New York; Roswell Park Medical Club, Buffalo; Williamsburg Medical Society, Brooklyn; New Rochelle Medical Society.

TUESDAY, *June 9th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); Associated Physicians' Economic League of New York; Medical Society of the County of Schenectady.

WEDNESDAY, *June 10th.*—Medical Society of the Borough of the Bronx; Richmond County Medical Society; Dunkirk and Fredonia Medical Society (semiannual); Rochester Academy of Medicine; Medical Society of the County of Montgomery.

THURSDAY, *June 11th.*—New York Academy of Medicine (Section in Pediatrics); Gloversville and Jamestown Medical Association; Physicians' Club of Middletown; West Side Clinical Society, New York; Blackwell Medical Society of Rochester; Jamestown Medical Society (annual); Society of Physicians of Village of Canandaigua.

FRIDAY, *June 12th.*—New York Academy of Medicine (Section in Otology); Society of Ex-Interns of the German Hospital of Brooklyn; Eastern Medical Society of the City of New York.

Official News.

United States Public Health Service:

Official list of commissioned, [illegible] commissioned and other officers of the United States Public Health Service [illegible] May 7, 1914.

Carrington, P. M., Surgeon. Directed to take temporary charge of San Diego, Cal., quarantine station, during the absence of Acting Assistant Surgeon McKay on account of sickness. **Clark,** T., Surgeon. Upon the request of the State Board of Health of Maryland, directed to proceed to Annapolis, Md., for the purpose of making a physical and mental investigation of the boys and girls of the National Junior Republic in that city. **Frost,** W. H., Passed Assistant Surgeon. Granted five days' leave of absence from May 26, 1914, under paragraph 193, Service Regulations. **Gardner,** C. H., Surgeon. Granted two days' leave of absence from May 23, 1914, under paragraph 193, Service Regulations. **Gassaway,** J. M., Senior Surgeon. Granted one day's leave of absence from May 20, 1914, under paragraph 193, Service Regulations. **Guiteras,** G. M., Surgeon. Directed to proceed from Vera Cruz to Tampico, Mexico, to ascertain sanitary conditions, thence to Havana, Cuba, to relieve Passed Assistant Surgeon R. H. Creel. **Gwyn,** M. K., Surgeon. Granted one month's leave of absence on account of sickness, from May 14, 1914. **Hamilton,** H. J., Acting Assistant Surgeon. Granted three days' leave of absence from May 21, 1914. **Mathewson,** H. S., Surgeon. Granted fourteen days' leave of absence from June 13, 1914. **Paine,** Liston, Assistant Surgeon. Directed to proceed to such places on the Ohio River watershed as may be necessary for the purpose of making sanitary surveys, collecting samples of water, etc. **Robinson,** D. E., Surgeon. Granted three days' leave of absence from May 23, 1914. **Safford,** M. V., Assistant Surgeon. Detailed to attend the meeting of the American Society of Tropical Medicine at Boston, Mass., May 29 and 30, 1914. **Smith,** F. C., Passed Assistant Surgeon. Granted six days' leave of absence from May 9, 1914, under paragraph 193, Service Regulations. **Sprague,** E. K., Surgeon. Detailed to attend the meeting of the Vermont Health Officers' Association at Rutland, Vt., May 28, 1914, for the purpose of delivering a public health address. **Sutton,** D. C., Assistant Surgeon. Granted fourteen days' leave of absence from June 5, 1914. **Thompson,** L. R., Assistant Surgeon. Directed to report to Assistant Surgeon General W. G. Stimpson at the bureau, June 8, 1914, for examination to determine his fitness for promotion to the grade of passed assistant surgeon. **Turnipseed,** D. C., Assistant Surgeon. Directed to proceed to Ellis Island, N. Y., stopping at the bureau en route, and report to the chief medical officer for duty. **Wickes,** H. W., Surgeon. Directed to proceed to the State hospital at Tewkesbury, and, if necessary, to Westford, Mass., to investigate a suspected case of typhus fever.

Boards Convened.

Boards of medical officers convened for the physical examination of candidates for appointment as cadets in the Revenue Cutter Service, to meet June 1, 1914, as follows:

Bureau, Washington, D. C.: Assistant Surgeon General W. G. Stimpson, chairman, Passed Assistant Surgeon H. de Valin, recorder. Marine Hospital, Detroit, Mich.: Senior Surgeon H. W. Austin, chairman, Assistant Surgeon John H. Linson, recorder. Marine Hospital, Stapleton, N. Y.: Senior Surgeon G. W. Stoner, chairman, Passed Assistant Surgeon C. P. Knight, recorder. 410 Chestnut Street, Philadelphia, Pa.: Senior Surgeon Fairfax Irwin, chairman, Acting Assistant Surgeon R. F. Gerlach, recorder. Marine Hospital, Chicago: Surgeon J. O. Cobb, chairman, Assistant Surgeon Joseph Bolton, recorder. Marine Hospital, Boston, Mass.: Surgeon H. W. Wickes, chairman, Passed Assistant Surgeon G. L. Collins, recorder. 235 Central Building, Seattle, Wash.: Surgeon B. J. Lloyd, chairman, Assistant Surgeon D. S. Baughman, recorder. Marine Hospital, Savannah, Ga.: Surgeon Edward Francis, chairman, Passed Assistant Surgeon J. R. Ridlon, recorder. Marine Hospital, Baltimore, Md.: Surgeon J. T. Burkhalter, chairman, Assistant Surgeon C. E. Waller, recorder. Marine Hospital Office, Newbern, N. C.: Acting Assistant Surgeon R. S. Primrose

chairman, Acting Assistant Surgeon R. D. Jones, recorder. Marine Hospital Office, New London, Conn.: Acting Assistant Surgeon J. G. Stanton, chairman.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Md., for the physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Surgeon J. T. Burkhalter, chairman, Assistant Surgeon C. E. Waller, recorder.

Board of medical officers convened for the reexamination of an alien at Detroit, Michigan. Detail for the Board: Senior Surgeon H. W. Austin, chairman, Assistant Surgeon J. H. Linson, member, Acting Assistant Surgeon K. L. Weber, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending May 29, 1914:

Harden, Robert Du Rant, First Lieutenant, Medical Reserve Corps. Ordered to active duty and assigned to Fort Monroe, Va. **McBrayer,** Charles E., Captain, Medical Corps. Relieved from duty at Fort William H. Seward, Alaska, and **Pierson,** Robert H., Captain, is relieved from duty at Fort Gibbon, Alaska, and both will take transport to sail from Alaska for the United States (the date of sailing of this transport is not known, but it will be on the transport which sails from San Francisco, for Alaska, June 15, 1914, on its return voyage from Alaska). **Marrow,** Charles E., Major, Medical Corps. Relieved from duty at Fort Lawton, Wash., upon arrival of Major Benjamin J. Edger, Jr., and will then proceed to Fort Huachua, Ariz. **Russell,** F. F., Major, Medical Corps. Relieved from duty as attending surgeon, New York city, and ordered to proceed to Vera Cruz, Mexico. **Sharpe,** Herbert H., Captain, Medical Corps. Relieved from duty at Fort Winfield Scott, Cal., and will proceed at the proper time to San Francisco, Cal., and take the transport to sail from that place on or about June 15, 1914, for Fort Davis, Alaska, relieving First Lieutenant William Meister, who upon being thus relieved will proceed to Fort Liscum for duty. **Smith,** Herbert A., First Lieutenant, Medical Reserve Corps. Ordered to active duty and assigned to Fort Porter, N. Y.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Navy for the three weeks ending May 23, 1914:

Benton, F. L., Surgeon. Detached from the receiving ship, Navy Yard, Norfolk, Va., and ordered to the Marine Detachment, Pensacola, Fla. **Berryhill,** T. A., Medical Director. Detached from the Navy Yard, New York, and ordered to the Naval Hospital, Great Lakes, Ill. **Blackwood,** N. J., Medical Inspector. Commissioned a medical inspector from September 29, 1913. **Bovée,** J. W., Assistant Surgeon, Medical Reserve Corps. Resignation accepted May 14, 1914. **Bowman,** F. H., Passed Assistant Surgeon, Medical Reserve Corps. Ordered to the Naval Hospital, Boston, Mass. **Bradbury,** W. E., Assistant Surgeon, Medical Reserve Corps. Ordered to the Naval Hospital, Philadelphia. **Butler,** C. St. J., Surgeon. Detached from the medical supply depot, and ordered home to await orders. **Connor,** W. H., Passed Assistant Surgeon. Detached from the Naval Hospital, Boston, Mass., and ordered to the *Isla De Luzon.* **DeValin,** C. M., Surgeon. Ordered to the Navy Yard, Portsmouth, Va. **Halsey,** W. H., Passed Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the *Montana.* **Howard,** J. V., Assistant Surgeon. Ordered to Mare Island Hospital. **Kaufman,** J. B., Passed Assistant Surgeon. Detached from the *Ozark* and ordered to the Great Lakes Training Station. **Lee,** A. E., Passed Assistant Surgeon. Detached from the Marine Detachment, Peking, China, and ordered to the *Galveston.* **McDowell,** R. W., Passed Assistant Surgeon. Ordered to the *Ozark.* **Mears,** J. B., Passed Assistant Surgeon. Ordered to the Naval Training Station, St. Helena, Va. **Miller,** C. K., Acting Assistant Surgeon. Revocation of appointment as acting assistant surgeon to take effect May 22, 1914. **Morris,** Lewis, Surgeon. Detached from duty as fleet surgeon, Asiatic Fleet, and ordered to the civil hospital, Shanghai, China, for treatment. **Omelvena,** J. G., Assistant Surgeon. Ordered to Newport Hospital. **Owens,** W. B., Passed Assistant Surgeon. Detached from the Marine Detachment, Managua, Nicaragua, and ordered to the *Talahassee.* **Pratt,** L. L., Assistant Surgeon. Ordered to Philadelphia Hospital. **Schmidt,** L. M., Passed Assistant Surgeon. Detached from the *New Jersey* and ordered to the *Louisiana.* **Stenhouse,** H. M., Assistant Surgeon, Medical Reserve Corps. Commissioned an assistant surgeon from April 4, 1914; ordered to Las Animas Hospital. **Stoop,** W. A., Assistant Surgeon, Medical Reserve Corps. Commissioned an assistant surgeon from April 4, 1914. **Stoops,** R. E., Passed Assistant Surgeon. Detached from the Marine Detachment, Pensacola Fla., and ordered to the *New Jersey.* **Stuart,** M. A., Passed Assistant Surgeon. Detached from the *Galveston* and ordered to the Marine Detachment, Peking, China. **Sullivan,** N. R., Assistant Surgeon. Detached from the Canacao Hospital and ordered to the *Villalobos;* detached from the *Villalobos* and ordered for treatment to the Civil Hospital, Honkow, China. **Taylor,** J. S., Surgeon. Detached from the Naval Training Station, Great Lakes, Ill., and ordered to the *Illinois.*

Births, Marriages, and Deaths.

Married.

Fischman—Spivack.—In New York, on Tuesday, June 2d, Dr. Max Fischman and Miss Helena Spivack. **Gingrich—Hopper.**—In Philadelphia, on Friday, May 15th, Dr. E. H. Gingrich and Mrs. Elizabeth Hopper.

Died.

Border.—In Charlestown, Md., on Sunday, May 17th, Dr. Daniel W. Border, aged sixty-one years. **Braden.**—In Lebanon, Tenn., on Tuesday, May 19th, Dr. D. W. Braden, aged eighty-nine years. **Brewer.**—In Chicago, Ill., on Monday, May 18th, Dr. Horatio S. Brewer, aged sixty-eight years. **Cogshall.**—In Detroit, Mich., on Thursday, May 21st, Dr. Bela Cogshall, aged seventy-five years. **Combs.**—In Winchester, Ky., on Sunday, May 17th, Dr. Glenmore Combs, aged sixty-eight years. **Devilbiss.**—In Chambersburg, Pa., on Sunday, May 17th, Dr. Henry Clay Devilbiss, aged sixty-five years. **Doolittle.**—In Whiting, Ind., on Friday, May 15th, Dr. Bertram U. Doolittle, aged thirty-three years. **Dugan.**—In Philadelphia, on Wednesday, May 20th, Dr. William J. Dugan, aged forty-five years. **Dunn.**—In Richmond, Ark., on Tuesday, May 19th, Dr. John M. Dunn, aged eighty-two years. **Gruening.**—In New York, on Saturday, May 30th, Dr. Emil Gruening, aged seventy-one years. **Holaday.**—In Mooresville, Ind., on Saturday, May 16th, Dr. T. F. Holaday, aged seventy-nine years. **Hughes.**—In Spokane, Wash., on Sunday, May 17th, Dr. Marietta Hughes, aged seventy years. **Hunt.**—In Anderson, Ind., on Monday, May 18th, Dr. Mason Volney Hunt, aged sixty-five years. **Karsner.**—In Oroville, Cal., on Friday, May 15th, Dr. J. H Karsner, aged sixty-nine years. **McFall.**—In New Albany, Ind., on Thursday, May 21st, Dr. Hettie McFall, aged fifty-two years. **Marsh.**—In Albany, N. Y., on Tuesday, May 19th, Dr. Edward Marsh, aged sixty years. **Oliver.**—In Woodlawn, Ala., on Monday, May 18th, Dr. Hillary T. Oliver, aged seventy-six years. **Page.**—In Madil, Okla., on Saturday, May 16th, Dr. John H. Page. **Preston.**—In Davenport, Ia., on Thursday, May 21st, Dr. Charles Hicklen Preston, aged sixty-nine years. **Raymond.**—In Washington, D. C., on Friday, May 15th, Dr. John Underwood Raymond, aged sxty-four years. **Ribble.**—In Wytheville, Va., on Thursday, May 21st, Dr. W. H. Ribble, Sr., aged seventy-nine years. **Shepard.**—In Shepard, Ohio, on Friday, May 15th, Dr. William Shepard, aged eighty-nine years. **Sullivan.**—In Monroe, Ia., on Thursday, May 21st, Dr. W. E. Sullivan, aged thirty-six years. **Swann.**—In New York, on Thursday, May 28th, Dr. Arthur W. Swann, aged thirty-four years. **Thorpe.**—In California, Mo., on Monday, May 18th, Dr. A. V. Thorpe, aged sixty-two years. **Van Alstyne.**—In Binghamton, N. Y., on Monday, May 18th, Dr. John L. Van Alstyne.

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INSOLATION.

Its Prophylaxis and Treatment.

By PAUL G. WOOLLEY, M. D.,
Cincinnati.

It is needless to say that the treatment of any condition should depend upon the cause of the condition. It happens, however, that in certain cases or diseases, the causes are not definitely known, and, therefore, since opinion varies concerning the origin of the symptoms, treatment varies accordingly, even in some instances, individually, and so becomes rather symptomatic than etiological. Further, sometimes through carelessness, sometimes through ignorance, a certain definite disease or symptom complex is treated symptomatically, in spite of the fact that a considerable amount of information exists concerning its causes. This has been quite true of the treatment of insolation.

Generally speaking, the treatment of insolation has been based upon the fact that in that condition too much heat has been produced in the body, and that too little heat is given off; in other words, that the disease is due entirely to heat retention. The whole effort in treatment has therefore been to reduce the temperature of the body by the application of cold, and by encouraging superficial evaporation. And that is all very well. But at the same time little account has been taken of the fact that in insolation abnormal substances are being produced continuously because of the increased temperature of the body, and that these abnormal products (or products in abnormal amounts) are not being eliminated with sufficient rapidity to insure the body against their deleterious action. But of that more will be said presently.

Insolation (siriasis, sunstroke, heat stroke, thermic fever) is a term applied to certain symptom complexes, the result of disturbances of heat regulation. These disturbances arise primarily from physical causes—the heat and water content of the air about the body, the condition of the peripheral vascular circulation, etc.—but these causes lead to, or produce chemical changes in the organism, which are manifested in the characteristic clinical symptoms.

According to the rapidity of development and the severity of the symptoms, the books speak of heat exhaustion and sunstroke. The former refers to syncope from exhaustion, "caused either by the direct rays of the sun or by a heated atmosphere in the shade." The latter refers to the results of "the general heating of the whole body, blood, and tissues, which may happen either from prolonged exposure to the sun's rays in a heated atmosphere, to a heated atmosphere in the shade, or to an abnormal thermotaxic state due to vasomotor or other heat regulating disturbances" (1).

From this statement it appears that there is little justification for a classification other than a much simpler one, which would arrange the cases into mild, severe, and hyperacute. The causes of all are obviously the same. The symptoms are phases of the effects of heat upon bodies which differ in one or another direction or degree. The type and amount of variation is determined by many factors—the use of alcohol, overeating, overwork and fatigue, bad ventilation, anxiety, worry, personal uncleanliness, wearing of too tight or too heavy clothes, etc. A recent article says that heat exhaustion is produced by high temperature; heat exhaustion brought on by exposure to the sun is sunstroke (2).

Sunstroke has been attributed to exposure to sunlight, more particularly to exposure of the head to the direct rays (3). But this does not account for the large group of borderline cases classed as heat exhaustion or prostration, which are encountered among stokers, laundry workers, and persons who are crowded together or who live in hot, badly ventilated, insanitary rooms, buildings, or barracks. Taking the whole series of cases that may be included in the group (represented by the classical hyperpyrexial sunstroke, by the atypical apyrexial heat stroke, and the heat prostrations which occur in the absence of direct sunlight), we may assert that insolation may occur under any circumstances in which heat accumulates in the body and in which the body does not rid itself of its metabolic end products. Since metabolism increases under the influence of abnormal heat, it will appear that symptoms of insolation are imminent whenever the heat production of the body exceeds the heat dissipation, and when, at the same time, the excretory processes are slowed.

Hirsch and Vincent believed the immediate cause of trouble was a diminution of oxygen and retention of toxic principles. Vincent also stated his belief in a toxic basis. Gordon (2) says that recent work tends to the conception of the paralyzing action on the nervous system of some toxic element which produces metabolic changes in the neurons, and, according to the degree of autointoxication, the effect of the sunstroke will be either an attack of ordinary heat prostration or syncope with

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unconsciousness or death. If this is true, then insolation is an autointoxication brought about by substances formed in the body under abnormal conditions of heat retention.

How the heat regulation of the body is upset we do not know. Of sunstroke we can, however, say this much: That preceding the onset of the symptoms, the body has been losing considerable amounts of water, and that at the same time metabolism has been abnormally rapid. The draining off of the water produces a relative concentration of the colloids of the tissues (the protoplasm), and in this state diffusion of metabolites is less rapid than when the colloidal concentration is normal. As diffusion is diminished, the substances which should be carried off in the cellular and body excretions, tend to accumulate in the cells and intracellular substance, and tend again to embarrass the cellular activities. It is entirely possible that this embarrassment results in incomplete splitting of certain protein substances, so that instead of the catabolic processes being carried to the physiological limit, they are stopped, in part at least, at a point where the toxic portion of the protein molecule (Vaughan) remains unbroken and active, and so the high temperature of the body, which was primarily produced by external heat, is subsequently caused by protein intoxication. In cases of apyrexial insolation the cause would be (following Vaughan) an overwhelming production of the toxic fragment of protein which causes collapse. The diminished secretion associated with increased metabolism—which means in terms of physiological chemistry retention of acid products (carbonic acid, lactic acid, etc.)—accounts for the fact that the alkalinity of the blood is diminished in insolation (2). Tissue acidosis helps to account for retention of catabolites, for unless a tissue is giving up water it does not give up its soluble substances, and in the condition of acidosis protoplasm does not give up water, but does the reverse.

So far as the rays of light are concerned, it is sufficient to note that it is not the violet and ultraviolet rays which are active, but the red and infrared rays [3, 6, 7, 8, 9, 10, 11, 12 and 13]. The evidence for this is largely found in the work of Aron. These rays are active in either one or both of two ways, in increasing the temperature of the air, or in heating the body itself.

The body loses heat in three ways—by conduction, by radiation, and by evaporation. Under normal circumstances radiation is the most active, but as the surrounding temperature rises, radiation becomes necessarily less important and evaporation (perspiration) becomes more active, until at temperatures which equal or exceed that of the body, evaporation alone is of value. Vierordt estimated the normal heat losses through various channels as follows: The urine and feces, 1.8 per cent.; by expired air, 3.5 per cent.; by vaporization of water from the lungs, 27.2 per cent.; by evaporation from the skin, 14.2 per cent.; by radiation and conduction, 73 per cent. Rubner showed that the heat losses, estimated in calories, by radiation and conduction, took place according to the following table:

Temperature	Calories lost by radiation	Calories lost by evaporation
7° C.	78.5	7.9
15° C.	55.3	7.7
20° C.	45.3	10.6
25° C.	41.0	13.2
30° C.	33.2	23.0

These figures indicate that under normal circumstances radiation is the most important method of physical heat regulation, but that under abnormal circumstances evaporation becomes the most important. Without increased evaporation, the body would not merely retain its heat, but absorb heat from its surroundings. This state of things had led Hill (16) to remark that so long as evaporation is active, high temperatures alone will not change the temperature of the body. It is only when evaporation is insufficient that heat produces serious results. Evaporation cannot occur when the body can produce no free water, or when the atmosphere is saturated with water.

In a series of experiments with monkeys, Aron showed that these animals, which are as accustomed to tropical climate as any that can be obtained, when exposed to the direct sunlight, quickly died, though the control animals who were kept in the shade, even that of an umbrella, survived. But he also showed that monkeys kept in the sun, but at the same time in a current of air, such as that produced by an electric fan or a natural breeze, suffered no injury. He further showed that monkeys, placed in an apparatus so that their heads were exposed to direct sunlight, but their bodies protected and kept cool, suffered not in health. He concluded, therefore, that it is not the direct effects of the sunlight which do damage, but the hyperthemia produced by the heat rays. He believes that the heat radiated from the sun warms the body tissue more rapidly than can be compensated for by the regulatory mechanism of the body. The tissues and the blood increase in temperature to a point higher than is compatible with life. Apparently the organs most susceptible to this increased heat effect are the brain and heart, and it is the lesions in these organs which are most essential in causing death. These characteristic lesions are hemorrhagic lesions in the brain, and (in monkeys) the heart.

Not less clear than the results of his experiments with animals, are Aron's results with human beings. They indicate, as he says, "that the temperature of the human skin increases in the sun, but does not reach the normal body temperature. In animals without sweat glands, the skin temperature rises above febrile heights and the tissues lying underneath are heated. On the other hand, penetration of heat through the human skin seems improbable, the effect of the rays being neutralized by water evaporation on the skin. The more perfect this water evaporation is, the better the normal body temperature may be maintained." "Monkeys exposed to the sun in Manila die in little over an hour because of their limited capacity to evaporate water, while man, with his well developed sweat glands resists the same climatic condition for a much longer period without detriment.' The great importance of this evaporation is shown by the remarkable fact that a man lying quietly in

the sun lost 280 grams in weight in one hour. This figure does not include the water, held in the man's clothes, but actually lost to the body.

The foregoing facts account very well for the usual cases of sunstroke. There remains, however, a small group of cases in which but slight increase of temperature has been observed. Arons accounts for these upon the basis of sudden loss of large quantities of water. He quotes P. Schmidt, who observed, under unfavorable climatic conditions during muscular work, water losses as great as one kilogram an hour. He proceeds to call attention to the fact that since the body cannot withstand a loss of water of more than ten per cent. of its weight, an acute loss of three to four kilos must necessarily result in grave disturbances, collapse, or death. Where losses of water are so great, evaporation is reduced and refrigeration decreased.

If the foregoing facts are true, then prophylaxis consists in preventing the accumulation of abnormal amounts of heat in the body. To accomplish this there are mediate and immediate methods. The former applies to habits and clothing, or, in general, to hygienic surroundings at any time, the latter to habits during severe hot weather.

To enable oneself to withstand great heat, the regulatory system of the body should be kept in a normal state of adaptability to circumstances. The skin should be kept clean to allow free evaporation; the clothes should be loose and light, moderately absorbent, but thin enough to allow the air to circulate freely and so assist evaporation. The diet should be such as not to create unnecessary demands upon the system. Alcoholic drinks should be tabooed; plenty of cool water or mild citrous drinks may be indulged in to advantage, since they serve to keep the excretory system freely open and to encourage refrigeration by evaporation. Fatigue, worry, anxiety should be avoided as far as is possible. Heavy work in the open should not be done, and even in the shade it should be limited. Dwelling houses and living rooms should be open, and the windows should be shaded in such a way as to exclude the heat rays without cutting off what breezes may blow. Fans, of any sort, are often indispensable, and cool (not cold) baths are infinitely refreshing as well as useful in keeping the body at ease.

During times of intense heat, and always during the hot hours of the day, all physical effort should be reduced to an absolute minimum. At such times rest in the shade, with as little clothing as circumstances permit, should be indulged in. The Oriental custom of taking a siesta in the middle of the day is highly commendable. In addition to these peaceful recommendations, it is advisable to suggest a light diet accompanied by as much water as can be gratefully consumed. Such a régime will result in quiet of mind and body and encourage a useful, moderate degree of perspiration and evaporation which results in a comparatively mild state of refrigeration. Attention should be paid to the excretory organs. Citrous drinks encourage the renal activities and so assist in the cleansing of the tissues. Much water will assist intestinal elimination and so assist in preventing intoxication from fecal stasis. Constipation must be avoided with as great care as diarrhea. Any exposure to the direct sunlight should be avoided as much as possible, and when such exposure is necessary it should be brief. An umbrella is a valuable protection.

The treatment of insolation is rather an unsatisfactory matter. This must be so because of the grave changes that are produced in the various organs of the body by the action of the intense heat and the products of abnormally rapid (and very probably aberrant) metabolism. One cannot expect to remove extravasations of blood in the brain or meninges in a few minutes or hours, and still less can one expect to restore the damage produced by the hemorrhages in less than a very considerable time. Moreover, the disease is rapid. Its victims fall where there are no therapeutic resources. They must be carried to some place where remedies are at hand; where ice can be obtained, and where baths can be given.

There are two main objects in view in treating any form of insolation: to reduce the heat content of the body and bring about elimination of its toxic contents. When these things have been done, *tempus edax rerum* alone will attend to the hemorrhages, the destruction of tissue, the fatty degeneration and the rest. But even time will not always allow the body to return to its former state. Often residual symptoms remain, such as a tendency to relapses, to headache, to partial loss of memory, to loss of sustained attention, to polyuria, even to glycosuria. There is the further possibility that insolation, particularly the moderately severe type, predisposes to meningitis.

Treatment of an attack of insolation is therefore one that combines refrigeration with elimination, both active enough to produce good effects without embarrassing organs, such as the heart, which are already damaged. To accomplish the former the practice is to give ice cold packs or baths. To compass the latter recourse is commonly had to stimulants. This latter seems not to be best, except as a last resort. Stimulation of an already burdened organ can do little good and much damage. Hydrotherapeutic methods are of more value in insolation than drugs. Ice packs or iced baths have a great value, but should not be continued for more than a few minutes (17) at a time and should be discontinued when the rectal temperature has reached 104° F. To replace the water lost to the body before the attack, and to increase elimination, there is no better method than infusion of saline solutions. If it is true that the oxygen content of the body is low and the acid content high, then such solutions should be alkaline. Such alkaline solutions as those recommended by Fischer (18), are extremely efficacious whether given by rectum or intravenously, in neutralizing the acids of the body and increasing water elimination by the kidneys. The following solution for rectal use should be prepared as follows:

Sodium chloride, ...30 grams;
Sodium carbonate[1] (crystallized), ...20 grams;

The injection should be given slowly enough to allow retention. The time consumed in injecting a litre should not be less than one hour.

For intravenous injection the following solution may be used:

Sodium chloride, ...14 grams;
Sodium carbonate (crystallized) .....10 grams;
Water, ...1,000 c. c.

This also should be given very slowly.

The effect of these solutions upon the secretion of urine is remarkable, and as a rule they will make it unnecessary to use digitalis. When this latter drug is used, it should be very carefully administered and its effects carefully watched. The use of strychnine is not advised in the active stage of the disease.

Such treatment will dispose of the immediate danger, and when this has been done treatment is symptomatic. Headache may be treated with acetanilid, phenacetin, salicylates. But these drugs should be used with extreme caution. This is particularly true of the coaltar products. Sleeplessness may be controlled with bromides, trional, or other mild sedatives and soporifics.

In apyrexial heat exhaustion external hydrotherapeutic measures are uncalled for, and treatment should be eliminative and stimulative. The internal hydrotherapeutic methods should be very useful in these cases and should be combined with friction, massage, warm packs with sufficient internal stimulant medication.

After recovery from an attack of insolation great caution must be observed by the patient to prevent recurrences from subsequent exposures to heat. He must pay careful attention to prophylactic measures, and use the greatest precautions in ordering his life. It is advisable for all such persons to arrange their time in such a way that they may spend the hot seasons at some great altitude or cool summer resort. Many tropical countries have what is known as a "summer capital," to which many people go to escape the heat of the lowlands.

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Treatment of Hemorrhage in the Upper Respiratory Tract.—Citelli, in *Revue hebdomadaire de laryngologies*, etc., for December 20, 1913, is stated to have used pituitary extract for this purpose, in view of the prolonged contraction of involuntary muscle tissue witnessed after administration of this agent in hemorrhage from the uterus. The drug was used in epistaxis due to various causes and in hemorrhage following operations, especially removal of the turbinates. It was given by subcutaneous or intramuscular injection—half an hour before the operation in the surgical cases. Excellent results were obtained.

THE TREATMENT OF RHEUMATIC FEVER.

By Horatio C. Wood, Jr., M. D.,
Philadelphia,
Professor of Pharmacology and Therapeutics, Medico-Chirurgical College.

The prevalence of the diagnosis of rheumatism has long been one of the reproaches of the medical profession; all sorts of pains entirely unrelated etiologically or pathologically have been thrown together into this convenient scrap heap of the careless diagnostician. But the symptom complex known as rheumatic fever or acute inflammatory rheumatism, both by the constancy of its manifestation and the uniformity of its lesions, justifies its claim to be a morbid entity.

A rational therapeutic effort may be directed toward, 1, the removal of the cause of the disorder; 2, the correction of the perverted function or, 3, the amelioration of symptoms. I shall divide our consideration of the treatment of rheumatic fever into three corresponding sections.

Treatment based upon the cause. Although the exact species of microorganism has not been definitely proved, the bacterial origin of rheumatic fever must be conceded to be well established. There are three principal views held concerning the pathogenesis of this disease: 1. It is due to a specific microorganism such as Micrococcus rheumaticus of Poynton; 2, it is a special manifestation of infection by Streptococcus pyogenes; or, 3, it may be the result of an arthritic invasion by any one of a considerable variety of bacteria.

Nowadays a bacterial etiology suggests in the minds of most clinicians, almost as a simple reflex, a bacterial therapy, and various efforts have been made to apply bacterial products of one variety or another to the treatment of inflammatory rheumatism.

In investigating the value of any new mode of treatment, we must consider, not merely the practical results which have been attributed to it, but also the scientific basis. Hippocrates, one of the shrewdest observers that the medical profession has ever known, wrote twenty-five centuries ago, "Experience is fallacious and judgment difficult." While it is true that the final test of any remedy or mode of treatment must be made at the bedside, and while it is equally certain that there are drugs whose undoubted usefulness we can no way explain, it is nevertheless true that to establish the value of a remedy by clinical experience alone requires such an enormous volume of evidence that not a single important drug has won a firm position within the past fifty years without the testimony of the laboratory worker. Scientific plausibility is almost a primary requirement in determining the usefulness of any new mode of treatment.

All the various methods of bacterial therapeutics may be grouped into two divisions. Those in which an effort is made to stimulate antibody formation in the organism of the patient by injection of the bodies of bacteria or some derivative of bacterial growth, and those in which antibodies formed in other animals by the production of artificial infections are introduced into the patient's economy.

It is to be noted that the reaction to the organism, whether in the man or horse, is a specific one; that is, the antibody which is formed by the injection of any one species of microorganism is antagonistic only to that species. The antitoxic serum, for example, abstracted from the blood serum of the horse which has been inoculated with diphtheria bacilli is curative only for diphtheria and is useless in streptococcic tonsillitis or any other sort of infection; or the antibodies which are formed in the human being by the subcutaneous injections of streptococci in no way influence staphylococcus infections. Indeed, there is considerable evidence that the specificity of reaction is so narrow a one that varieties or strains of a bacterial species do not protect against other strains of bacteria which may be indistinguishable by the ordinary methods of the bacteriological laboratory.

It is evident, therefore, that a prerequisite of a rational bacteriological therapy is the separation of the causative microorganism. This does not necessarily mean the determination of the specific identity of the bacteria, for, although we may not know what the cause of any given disease is, if we are able to cultivate a pure strain of bacteria from some bodily secretion we may succeed in preparing a curative remedy, as in the so called autogenous vaccine. If rheumatic fever is due to Micrococcus rheumaticus then an antistreptococcic bacterin can be of no benefit, whether or not it be harmful.

Since we do not know the specific germ of inflammatory rheumatism, it is manifestly beyond the limits of scientific logic to administer any species of bacteria in this disease or any form of antitoxic serum.

Attempts have been made to surmount this difficulty by the use of what is called a "mixed vaccine." The theory of this is that if a variety of bacteria is injected it may be that the unknown proper species will be among the number. I cannot assent to the statement of the defenders of this practice that the injection of several million dead bacteria into the tissues of a sick man is incapable of harm. The occasionally violent reaction following the bacterin treatment shows that bacterial products exercise a profound influence on the organism. Moreover, it is to be remembered that if we inject say fifty million bacteria of five species there will only be ten million of any one species, which may not be enough properly to excite the formation of antibodies; or to express the idea in a different way: Suppose the proper dose of the specific organism in an individual case was fifty million, one would have to inject two hundred million bacteria incapable of any beneficial effect, but possessing at least possible power for harm. If the claims made by the manufacturers of conglomerate vaccines are true, why not mingle the expectorations of pneumonia patients with those of tuberculosis, add the pus from an acne pustule and that of an urethral infection, mix staphylococci, streptococci, and all other known forms of bacteria into one huge muddle which would be the panacea for ills of bacterial origin?

I do not deny that there is virtue in any form of vaccine treatment for rheumatism; what I do maintain is that any use of bacterial therapeutics is at present in the nature of an experiment. In the absence of theoretical justification, the burden of proof as to the usefulness of vaccine in rheumatic fever certainly rests upon the innovation, and while there are a few clinical reports favorable to this mode of treatment, they certainly have not reached a sufficient volume to overcome the healthy skepticism which must be engendered in the minds of every unprejudiced student of medicine.

Under the head of treatment directed against the cause, I shall consider also the use of the various forms of salicylic acid. Although we have not yet reached the stage where we can speak dogmatically as to how the salicylates act in rheumatism, yet we do have sufficient knowledge to construct a plausible and even probable theory of their benefit.

The old idea that the value of salicylic acid in rheumatic fever was due to its antipyretic action or analgesic properties, or to some mysterious power to modify metabolism must be regarded as definitely disproved. The fever, as I shall show later, is really a beneficial process and its reduction cannot assuage the general condition. Moreover, we have other agents which are much more powerful antipyretics than the salicylates, but which are not to be compared to it in usefulness. If the effect of the salicylates was simply a relief of pain, morphine and other anodynes would long ago have entirely replaced the salicylates in the treatment of rheumatism. Contrariwise there are a number of drugs practically without analgesic power which show to a marked degree the curative properties of salicylic acid in inflammatory rheumatism. Both the clinical and scientific evidence seems to me to show overwhelmingly that salicylic acid has a direct curative action.

The disturbances in the nutritive processes seen in rheumatic fever are the result rather than the cause of the disorder; they are, after all, not so greatly different from the metabolic disturbances seen in other infectious fevers. The correction of them, therefore, cannot seriously modify the course of the infection, and even if the evidence was convincing that salicylic acid seriously modified metabolism, it would still be extremely difficult to attribute its virtues to any such influence. If the salicylates have a direct curative action they must act either directly or indirectly upon the cause of the disease. If, as is generally believed, inflammatory rheumatism is of bacterial origin, then it follows that the remedial power of the salicylates is most reasonably to be looked for in its antiseptic properties.

Three arguments have been brought forward to combat the theory of a direct disinfectant influence of the salicylates in acute rheumatism: First, although free salicylic acid is powerfully antiseptic, its salts are but feebly so, and it has been shown that whether administered in the form of the acid itself or one of its salts, the salicylate circulates in the blood in combination with a base. Second, if the salicylates acted directly upon the causative bacteria, they should exercise a specific curative and preventive action in the endocardium as well as in the joints. Finally, it is asked if they are such powerful systemic disinfectants, why are they not equally successful in other forms of infections as, for example, septicemia?

The answer to all three of these objections is based on one series of facts as follows: Although

it is true that salicylic acid circulates in the blood only in combination with sodium or some other base, the experiments of Köhler have shown that the presence of excessive amounts of carbonic acid in the blood will cause the liberation of free salicylic acid. Now it is manifest that in the intensely hyperemic joint of rheumatic fever, the blood being stagnant must become surcharged with carbonic acid. It is not at all improbable that under these conditions the relative acidity of the blood may increase sufficiently to cause a local liberation of free salicylic acid in quantities large enough to exercise an antiseptic action. On the other hand, while there may be more or less congestion of the other endothelial membranes, as the pleura or endocardium, it is unlikely that there is ever so intense a hyperemia as in the joints. Manifestly we cannot expect the same amount of decomposition of the neutral salicylates in these membranes, and consequently there will be a correspondingly slight antiseptic action. For the same reason in generalized infections, or local ones, as gonorrheal arthritis, in which the local reaction is less violent than in inflammatory rheumatism, we need not expect a beneficent effect from the salicylates.

An interesting confirmation of this theory concerning the mode of action of the salicylates is found in the behavior of certain allied compounds. Thus there is the same difference in the antiseptic properties of benzoic acid and the benzoates as there is between salicylic acid and its salts. Although inferior to salicylic acid in its antirrheumatic properties as it is in antibacterial power, there is strong evidence that the benzoates exert the same kind of favorable influence in rheumatism that the salicylates do. Stockman (*British Medical Journal*, March 22, 1913) has published an elaborate study of a number of compounds chemically allied to the salicyl group such as cresotinic acid. He finds that almost without exception the antirrheumatic virtue of these substances bears a close relation to their germicidal activity. While some of them rival the salicylates in their usefulness, in his opinion, they have no distinct advantage.

Certain writers have advocated on theoretical grounds the use of salicylic acid in preference to any of its salts or compounds. They argue that since the action is an antiseptic one, and since the acid is much more active than its salts, better results should follow the administration of the acid itself. Such reasoning is based upon an ignorance of the processes of absorption and elimination. As has been pointed out previously, salicylic acid cannot exist free in the blood since this is alkaline; and it has been shown experimentally that the salicyl circulates in the blood always combined with a base. If we administer salicylic acid, it is converted, either in the intestinal tract before absorption or in the blood immediately after absorption, into a sodium salicylate. If perchance the acid is set free when it reaches the congested joint, it is nevertheless carried there in the form of a salt. There is manifestly no advantage in administering the free acid and there is very great disadvantage of its irritant influence upon the gastric mucosa.

With the idea of lessening the nauseating effect of the salicylates, a large number of compounds which liberate the salicyl radical in the system, but not in the stomach, have been introduced. I do not believe that any of these is equal to either the ammonium or sodium salicylate in the treatment of acute rheumatism. The disagreeable taste of the latter salts can be almost completely disguised by the use of a bitter such as the compound tincture of gentian.

I do not mean to deny that many of these substitutes for ammonium salicylate possess powerful antirrheumatic properties and may under special conditions be valuable drugs, but for various reasons they are usually not so serviceable in rheumatic fever.

Methyl salicylate and its equivalents, oil of wintergreen and oil of sweet birch, have a highly aromatic flavor; and if given well diluted, methyl salicylate is often more acceptable to the palate than the alkaline salicylates. In my own experience, however, it has generally proved to be not so well borne by the stomach. It is of service sometimes as a local application to the inflamed joints. It has a distinctly counterirritant action and if properly applied, a considerable proportion may be absorbed through the skin and thus exercise a systemic as well as a local beneficial influence. For the purpose of endermic absorption the methyl salicylate should be mixed with an equal amount of lard and about a dram of the mixture smeared over an area four or five inches square and immediately covered with some impermeable dressing, as oiled silk, to prevent evaporation. While on the subject of methyl salicylate, I may say a few words about the much discussed question of the relative value of the synthetic and natural salicylates. In the first place, I would call attention to the fact that a large proportion of that which is sold as the natural salicylate is really manufactured from phenol; indeed, it is almost impossible to obtain true oil of wintergreen. The amount of oil of wintergreen which is produced in the United States is probably not ten per cent. of the amount prescribed. I know of no evidence, either scientific or clinical, which is at all convincing that the so called natural salicylates are any less toxic or more efficient than the synthetic.

Acetylsalicylic acid or aspirin, has a distinct field of usefulness, but in rheumatic fever the alkaline salicylates are ordinarily preferable. Aspirin sometimes exercises the same type of depression seen from acetanilid and alarming collapse has followed the use of even moderate quantities. Although sometimes less disturbing to digestion, it is on the whole inferior to the older salts in the treatment of the acuter types of rheumatism. With the glucoside salicin I have not had much experience. In sufficient dose it may be of service, but I would point out that it represents only about three fifths the quantity of salicyl in the ammonium salicylate, so that to equal fifteen grains of the latter twenty-five of salicin would be necessary.

A few words concerning the amount of salicylate to be used: While even very dilute solutions of salicylic acid have more or less restraining influence on the growth of bacteria, it is apparent that the greater the concentration of the antiseptic, the more certain will be its effect. Our aim should therefore be to have in the blood of the patient the largest amount possible without causing severe toxic symptoms; in other words the salicylates

should always be given up to the limit of tolerance. No hard and fast rule can be set here any more than in other serious diseases. The skill of the therapeutic artist is shown, not only in the selection of his tools, but in the way he uses them. Nearly any adult will stand sixty grains in twenty-four hours and some may take twice as much. The drug should be administered at short intervals until symptoms of mild poisoning such as excessive tinnitus aurium or nausea; it should then be withheld twelve to twenty-four hours in order to allow the system to clear itself of the excess of the drug, and then given in as large doses as the patient can tolerate continuously. It should always be exhibited in solution.

Treatment based upon the pathology. The result of the bacterial invasion is twofold—an intense local inflammation and an excitation of the thermogenic mechanism. Both of these represent the organism's effort to destroy the noxious germ. Too vigorous attempts to lessen the congestion or reduce the fever should be avoided lest happily we be found fighting against Nature. The large volume of blood in the affected joint consequent upon the hyperemia means an increase in the number of leucocytes, while the reduction in the rate of flow encourages diapedesis so that there is an accumulation of phagocytic cells, not merely in the bloodvessels, but in the surrounding tissues where they can come into real conflict with the bacteria.

I believe, therefore, that the local treatment should aim at encouraging rather than diminishing the joint congestion. I must confess, however, that I have serious doubts as to whether we can do much one way or the other with the ordinary methods. Certainly many absurdities have been both taught and practised. For example, there is that ancient relic of medieval physiology, lead water and laudanum, which owes its origin to erroneous theories and its continuance to careless clinical observation. Opium is not a local anesthetic, and if it was it could not penetrate the unbroken skin in quantities large enough to exercise any perceptible influence. Any possible benefit that has followed this application is due to the mild counterirritation of the alcohol in it, plus the bandages necessary to hold it in place.

By far the most important local measure is the immobilization of the inflamed joint, and protection. Measures which encourage the hyperemia, such as wrapping the limb in cotton batting, hot applications, and mild counterirritation are of sufficient usefulness to justify their employment if they do not interfere with the efforts at restraint of motion.

Treatment based upon symptoms. It appears to be pretty well established that the formation of the various substances which are antagonistic to the growth of bacteria in the human organism, goes on at a more rapid rate at febrile than at normal bodily temperature. Fever, therefore, may be looked upon as a defensive reaction. Unless it becomes excessive, as however it rarely does in this condition, it does not demand active interference. But the disturbed metabolism, the result of the high temperature, necessitates the employment of measures to maintain the nutritive condition of the patient. Foremost among these is rest in bed. This is important, not only, as in other fevers, to lessen tissue waste and conserve strength, but also because of the peculiar danger of cardiac complications of this infection.

As regards the diet, I believe that old theories concerning the pathogenesis of inflammatory rheumatism have led to irrational restrictions. It is not so much a perverted nitrogenous metabolism which should influence us in choosing the foods for the patient, but the enfeeblement of the digestion which is found in this as in so many other infections. There is no sense in starving a patient, either by the administration of foods which he cannot assimilate or by giving him insufficient quantities for the needs of his body. The most generally useful food is milk, but in my opinion it does not represent such a perfect ideal as some enthusiasts would have us believe. In the first place, it requires approximately four quarts of milk to furnish twenty-five hundred calories, which is a fair estimate of the ordinary daily need; and it requires a pretty good digestive power to assimilate such a quantity. Moreover milk contains a relatively low amount of carbohydrates. It is advisable therefore to increase the nutritional value of the milk by the addition of some form of starchy food, preferably a thoroughly cooked cereal, such as toasted bread, or rice which has been boiled six or eight hours. The monotony of the diet may safely be varied, not only by serving the milk in the form of junket or flavored with chocolate, but also by the use of eggs. Small amounts of coffee or tea, to those who are accustomed to their use, add greatly to the comfort of the patient and are not injurious.

Although it is no longer possible to maintain the ancient theory that inflammatory rheumatism is essentially a metabolic disorder, yet it cannot be denied that the disturbances of nutrition are more marked than in other infections with a comparable degree of pyrexia. Among the manifestations of perverted metabolism one of the most striking is increased acidity in the urine with large deposit of uric acid. Because of this high urinary acidity physicians of an earlier generation introduced the use of large doses of alkalies with the idea of correcting a hypothetical systemic hyperacidity. It may be pointed out, in passing, that the researches of modern physiologists have demonstrated that the system maintains its alkalinity with the utmost pertinacity, and that an acid reaction in the blood is rapidly and certainly fatal. Nevertheless, despite the erroneous notions of pathogenesis of which it was born, the alkaline treatment has proved clinically useful. It must be set down as one of those not very numerous treatments which have come down to us through pure empiricism. The most plausible explanation is that the alkaline salts by their diuretic effect hasten the elimination of various toxic metabolites. It is noteworthy in this connection that the drugs most widely employed for their alkaline effect are among the most reliable of our saline diuretics.

Whether we consider the value of these drugs to be due to their diuretic influence or to the neutralization of acid products of metabolism, there is no necessity of upsetting the stomach by the use of the alkaline carbonates. The acetates and citrates are oxidized in the body into carbonates, and therefore act as systemic antacids; but because of their neu-

trality they do not interfere with gastric digestion. On the other hand if we administer a sodium or potassium carbonate or bicarbonate, a portion of it will combine with the hydrochloric acid of the gastric contents. The resulting chloride is not only incapable of neutralizing any systemic acidity, but is also much less actively diuretic than the citrates. For these reasons I greatly prefer either acetate or citrate. The potassium salts, I believe, are slightly more active as diuretics than the corresponding salts of sodium, and according at least to the investigations of the older writers, increase the completeness of the oxidative processes in the body, thereby lessening the amount of uric acid to be excreted.

Between the acetate and citrate of potassium there is little choice, except that the citrate is generally less disagreeable to take. The most pleasant way of administering potassium citrate is by acidulating with lemon juice or citric acid. From twenty to thirty grains of the salt should be given every two or three hours, or until the urine becomes alkaline in reaction.

Another symptom urgently demanding treatment is pain. While the large doses of salicylates have more or less anodyne effect, and while the local measures recommended will lesson the suffering of the patient, nevertheless in many cases measures directly intended to relieve pain are often needed. Personally I believe that under these circumstances a trial at least should be made of the coaltar analgesics. They may fail to accomplish the purpose of their administration, but despite the tirade against them which was so fashionable a few years ago, I believe that when used in proper dose they are less disturbing to the nutritive processes than is morphine, and if by their employment we can avoid the use of this alkaloid or even reduce the quantity necessary to keep the patient comfortable, we shall have done him a good service. The claims of curative properties which have been made for the antipyrine derivatives do not seem to me to be substantiated, but I am convinced of the symptomatic value of this group of remedies.

434 South Forty-fourth Street.

URETHRAL AND PROSTATIC SYMPTOMS CAUSED BY A LARGE INTERNAL PILE.

By Victor Cox Pedersen, A. M., M. D.,
New York,
Assistant Urologist, St. Mark's Hospital.

The following example of urethral and prostatic symptoms in a young man seemingly caused by a large internal pile and relieved by its removal, may be worthy of note.

Case. C., white, aged thirty-seven years, single, salesman (case No. 12,638), first seen June 13, 1912. Family history: Father died of pneumonia; mother of accident; one brother living in good health; one dead of unknown pulmonary disease and three sisters dead of tuberculosis. Personal history: General health good, except neurasthenia for about a year; weight 150 pounds, appetite fair, bowels irregular. Former venereal history negative, but present attack began in 1907 with the onset of gonococcal urethritis, four days after intercourse. At his first visit a small purulent discharge with burning in the posterior urethra and frequency of urination every two hours by day with some tenesmus were present; no nocturnal frequency. Burning after an emission was also present. His former treatment lasted three months, with internal measures and hand injections. Physical examination: Normal; 24 Fr. sound passed through the urethra easily; right testicle atrophied from mumps; first glass of urine clear with a few shreds, second also clear with no shreds. Culture of discharge showed no gonococci, only a pure growth of Gram positive cocci. Three uranalyses were without feature, except persistent hyperacidity and a tendency toward indicanuria; bacteriological examination of the urine negative.

The definite statement of deep urethral irritation and frequency of urination warranted a urethroscopy, which on June 15, 1912, gave the following features: Colliculus puffy, covered with thickened mucosa; prostatic sinuses, large and deep with rough unhealthy surfaces; prostatic ducts, inflamed and ragged at their mouths in the fossettes; bulb, large ulcerlike spot, hard to illuminate. Cystoscopy: Normal except bulging of the floor by the prostate.

The treatment of this case was as follows: Until the patient was called from town by business in July, 1912, weak and ascending instillations of nitrate of silver were applied with great benefit. In December, 1912, however, he returned with the complaint that the symptoms were still present, although considerably less in degree. Urethroscopic treatment was now decided on and comprised ten per cent. nitrate of silver applications, judiciously applied and the high frequency current of Oudin to the more obvious lesions. A small papilloma on a very fine pedicle was located and removed and several spots of congestion were stimulated. This treatment was abandoned after two months of judicious use, namely during December, 1912, and January, 1913, when the patient was discharged objectively cured.



Fig. — Polyp from the rectum.

Toward the end of May, 1913, he returned, saying that his urethral symptoms seemed to be gone, except the frequency of micturition which was associated with a definite but indescribable feeling in the rectum. The first impulse was to ascribe this subjective syndrome to the prostate, especially in view of the findings at the cystoscopy, as stated previously. The finger, however, failed to detect any manifest change in the prostatic gland, so that at first the author was at a loss for the next step. Almost as an inspiration proctoscopy was decided on and revealed, attached to the anterior wall of the rectum directly opposite the prostate and the course of the urethra through it, a fibrous growth, sessile, nonvascular, and half the size of the little finger tip. Immediate removal of this growth was advised under the tentative diagnoses of polypus or fibroma and the probable cause of his peculiarly persistent symptoms, including his acknowledged tendency toward constipation.

The operation was done June 6, 1913, under gas and ether anesthesia. The tab of tissue was seized at the base with a Kelly mosquito artery clamp, transfixed, ligated in halves, divided along the distal edge of the jaws of the clamp, and finally cauterized from end to end with the Paquelin cautery. The operation was so small that no dressing was applied. Uneventful recovery was the outcome of the operation itself and a total relief of all urethral

and prostatic symptoms was the end result, which still persists so far as the writer is aware. Constipation also practically ceased.[1]

The figure is from a photograph of the specimen of practically full size. The tissue was sent to the Department of Pathology of the Cornell University Medical School. Professor James Ewing, June 16, 1913, reported as follows: "The small polyp from the rectum proves to be an old hemorrhoid, and consists of pure fibrous tissue and dilated bloodvessel. There is no sign of any tumor processes."

After receiving this report, the patient recalled having had a troublesome pile of large size some years previously. At the proctoscopy and operation no crop of piles was found. The rather peculiar and on the whole trivial cause of really vexatious symptoms makes this case at least curious, if not interesting and instructive. The natural tendency would have been to have regarded the man as suffering from "sexual neurasthenia," which the writer regards as a miserable apology for a diagnosis. The true state of affairs was discovered only on taking the opposite view and continuing the search for a valid cause of subjective complaints in a very intelligent man.

45 West Ninth Street.

THE MODERN TREND IN THE TREATMENT OF MALIGNANCY.*

By Russell H. Boggs, M. D.,
Pittsburgh,
Röntgenologist, Allegheny General Hospital; Dermatologist and Röntgenologist, Pittsburgh, Columbia, and St. Francis Hospitals.

Not quite a year and a half ago, I read a paper before the American Röntgen Ray Society, which I called A Plea for the More Conservative Treatment of Malignant Growths, and I think that the striking change in the sentiment with which the ideas advanced in that paper were generally received then, and with which they are regarded now, is one of the most significant facts of late medical advance. I shall quote a few paragraphs from that paper:

At the present time it is evident that there is a profound sentiment spreading among the leading minds of the profession, which questions the wisdom of the hitherto unquestioned practice of treating all malignant growths by the most radical means at our command. This sentiment springs mainly from a more comprehensive experience with a great number of cases traced out carefully to their end results. It is self evident that such an experience becomes possible only with the passing of many years, and much careful following up of cases.

We all know for what a long time it has been taught and accepted as a truth beyond dispute, that the only proper and scientific method in malignancy was immediate extirpation, wide and merciless, in all cases not hopelessly inoperable on the face of things. This includes, obviously, the removal of all lymphatics, draining the diseased area so far as possible, and often a sacrifice of many important structures contiguous to the growth, especially muscle and large areas of skin. The surgeons have tried conscientiously to avoid the possibility of leaving any cancer cells behind. We have all admired the many brilliant operations devised along these lines, and we know how vigorously they were put into practice in innumerable cases. And now at last time enough has elapsed to form some true estimate, in the light of experience, of the value of these extreme radical measures.

What opinion must we form?

In a recent clinical lecture, Dr. John B. Murphy spoke of the great shock he received on reading an article in one of the British medical journals, wherein was analyzed a series of cases of epithelioma of the lip, extending over a period of twenty or twenty-five years. It was demonstrated from the cases that could be traced, that fifty-two per cent. of the patients who had carcinoma or epithelioma of the lip, without any demonstrable metastasis at the time of operation, died a cancer death. Doctor Murphy further states that seventy-six per cent. of the patients who have a demonstrable enlargement of the glands at the time of the operation die a cancer death. Murphy goes on to speak of mammary carcinoma, and contends that the situation here is "equally unpleasant." "The improved technic," he says, "that has been adopted in recent years—first, that of Halstead; second, the splendid technic of Rodman, and third, the additional advance brought out by Handley, would tend to make us believe that we could get better final results in the future than we have been having in the past. That appeared to be true for a long time until Halstead analyzed his statistics at the meeting of the American Surgical Association in Cleveland. That analysis certainly did not justify us in cherishing much hope.

Nothing could better support the position I am taking in regard to the end results in the purely surgical treatment of malignancy than Doctor Murphy's mature and ripened opinion as expressed in this lecture. "An analysis of that class of cases," he concludes, "disheartened me very much, and an analysis of the most extensive operations done in various portions of the body later has added to my discomfort, and has made the cancer field rather a hopeless proposition to me. I think we can honestly say that we have not improved our cancer results-in the past quarter of a century."

It must be clearly borne in mind that Murphy is speaking here of those regions in which cancer is always peculiarly virulent, because of their rich lymphatic supply. By comparison, an epithelioma of the upper half of the face, for instance, is almost a benign growth, and is usually easily and permanently cured if taken at all early and treated with any skill. Indeed as far as the prognosis is concerned, we can classify cancers of any type by location better than in any other way.

The virulence in malignancy increases or decreases very strictly with the richness or the poverty of the lymphatic supply in the various parts of the body. Here is a rule which can never be lost sight of, either by the surgeon or the röntgenologist. Now it is an absolute fact that, when properly applied, the Röntgen rays decrease the lymphatic permeability, and produce a condition most unfavorable in the dissemination of the cancerous process, thus tending to render the aspect of an unfavorable situated lesion more favorable. I think all real röntgenologists at the present time appreciate this power of Röntgen therapy upon the lymphatic system, and the powerful part it has played in the prevention of recurrences and metastases, as well as at times making otherwise inoperable cases operable. This, in connection with its direct destructive action on the neoplastic cells and its strongly alterative action on the healthy cells, all of which it has when properly administered, gives it a very important place in the treatment of malignancy.

As has been said, that paper was read less than a year and a half ago, yet a wonderful change in the general mind of the profession has taken place in this short interval, and the revolution is still going forward rapidly. Indeed, it may fairly be said now that the purely surgical or cutting method is no longer the real radical method, but that the method of radiation, the modern and the scientific utilization

[1] The patient was last in the office on May [illegible], 1913. A letter from his nurse said that he was without symptoms.

*Read before the Academy of Medicine of Grand Rapids, Mich., January 21, 1914.



Fig. 1.—Epithelioma of lower lip.

of the rays of the Röntgen bulb and the radium capsule has become the actual radical treatment of the present. It has become obvious that along this line the hope of the future lies.

These rays reach far beyond where the knife can go; seek out and destroy outlying nests of cancer cells no operator could discover; and have absolutely cured, to stay cured for years and up to the present, cases which were formerly utterly hopeless and which the most skillful surgeon did not care to touch. It cannot longer be denied that the methods of radiation, by the brilliance of the results achieved and the unquestionable scientific and professional standing of their most enthusiastic users, have put the advocates of a purely operative therapy fairly and squarely upon the defensive. The next year or so is certain to bring some lively developments in this field.

Of course, the paper quoted from was read before a gathering of specialists in röntgenology, and to the more experienced and thoughtful of these the views expressed were not very radical, neither were they so very new. All had seen repeatedly for years such results as are now shaking the foundations of our ideas in this most important field. But also were they only too familiar with the tremendous difficulties which hedge the x ray specialist round about. These difficulties are twofold. First, there is the difficulty from within, owing to röntgenology's being a new science. The Röntgen ray is such a powerful agent that much harm was done in some early work owing to the lack of a safe technic in its application. This technic has now for several years been developed to a point of high perfection, but the old fear remains; also, the acquirement of this technic is not easy, but requires much experience and hard work, just as the acquirement of a safe surgical technic does. Unfortunately, anybody can buy an x ray machine, and many have been induced to do so. In the great majority of cases the purchasers never get beyond the most elementary class of work as far as making and interpreting radiograms were concerned, because here both self deception and what must be called, for want of a better term, "bluffing," are not for very long possible. But they still had their expensive apparatus, and it was easy to persuade themselves as well as others that they could "treat" at all events. They have done so and are still doing so, and probably now will do so more than ever. Their activities have created a situation quite comparable to that in the surgical field caused by the work of improperly trained operators. They are quite as dangerous. The surgeons courageously are preparing to deal with this problem in their own field, and in some manner we shall be compelled to deal with it in ours. Treatment work is far more difficult, technically, than "picture work," and that the technic of picture work is difficult is amply demonstrated by the fact that, in spite of the demand, there are so distressingly few men making really high grade radiograms.



Fig. 2.—Result after three months' treatment.

On the other hand, there is the difficulty from without, also owing to röntgenology's being a new science. There is a tendency to evade giving the röntgenologist the rank of a full clinical consultant. Of course it is occasionally true that he cannot acceptably fill this position, and is content to be little more than an x ray photographer. But the pressure of the extreme necessity of first class röntgenological advice is causing all of these disadvantages rapidly to become things of the past.



Fig. 3.—Inoperable carcinoma of breast. The same as Case IV.

Please do not understand that I am going to advocate any such idea as the abandonment of surgery in the treatment of cancer, and place entire reliance upon the x ray and radium. This would be merely absurd at the present time. What I wish to point out in this paper is the evident trend of development. Surgery has a wonderful history of incalculable benefits conferred upon mankind, in malignancy as elsewhere. But alongside of it in the medical world has grown up surgery's younger brother, the science of radiology—the utilization of the Röntgen and the radium ray. This science has now grown to great stature, with a wonderful record of hard and difficult work well done, and can no longer be denied

full participation in medical councils. It is no longer a mere assistant to surgery, though it may assist upon some occasions, just as surgery may sometimes assist the radiologist. It must now be considered as an ally, a fellow worker, and it is pretty plainly evident to the observant viewer of the signs of the times, that it is only by genuine teamwork of this kind that we are ever going to be able to cure cancer, at least by any means now known to us.

Great work in this line has been done by many American röntgenologists, pioneer work, much of it, of great difficulty and permanent value. But most of the men did this work under the great handicap of working practically as private practitioners. It was difficult or even impossible to obtain credence for their results. Besides, the evidence of good results was often denied because these results were not obtained in turn by untrained operators who



Fig. 4.—Result after forty treatments; died three years later from another cause.

tried to duplicate them. A development of this sort in its formative stage is best worked out in great clinics of the highest scientific standing. Fortunately this is now being done. It seems a pity that it is being done mainly abroad. I feel certain this will not long be so. We have here in America the men trained in every line to do this work as well as anybody on earth. The only thing is for us all to get together on a proper basis.

Some of the greatest German gynecologists, stimulated by the immense success of röntgenology in the treatment of many nonmalignant conditions formerly regarded as entirely surgical, such as myomas, fibroids, and many functional anomalies, have been using these rays generally combined with radium applications in the treatment of cancer of the uterus. The Röntgen rays were usually used, as has been said, in conjunction with applications of radium within the uterine cavity. The effects have been such as to result in the actual abandonment of operative procedure for this condition in some of the greatest and most famous clinics. Others, and I feel that this is the safest and most reasonable plan at present, still combine their radiological work with surgery in many cases. In connection herewith it seems best to quote a few paragraphs from the report of the Berlin correspondent of the *British Medical Journal*, in the issue of that periodical for December 13, 1913:



Fig. 5.—[illegible]

The eagerly awaited and long promised lecture by Professor Bumm, on his results with radium in the treatment of cancer of the uterus, was delivered to a crowded audience at a meeting of the Berliner medicinische Gesellschaft on December 3d. It will be in the memory of my readers that Professor Döderlein's pronouncement this summer at the Gynecological Congress at Halle was reported by me in full in these columns, and that it, and the discussion which followed, were on the whole decidedly optimistic in tone.

Professor Bumm began by recalling the favorable report he had made in the summer on twelve cases treated by radiotherapy. Further experience had afforded him no grounds to contradict what he then said concerning the local action of radium. There was nothing in the whole realm of the medical armamentarium that approached it in its power to produce shrinking of the primary growth together with inhibition of discharge and hemorrhage—effects that usually become apparent in from ten to twelve days. In favorable cases epithelialization of the tumors then took place, and the nodules diminished in size and ultimately vanished. Microscopic examination in such cases showed a disappearance of malignant mitoses, together with disruption of nuclei and protoplasm and a tendency in the malignant cells to loss of the power of staining. Ultimately only fibrous tissue with here and there the débris of carcinomatous tissue was found embedded in it. As he had pointed out in his previous short paper, successful results could not be expected by the destruction of a local growth only; the surrounding connective tissue always contained masses of carcinomatous cells, the selective destruction of which, without injury to the normal structures in the pelvic fascia, did not, as a matter of fact, occur. Very little of this destructive action on connective and other normal tissues had hitherto been noted or made public, for it was about six months to a year after the exposure that the evil results of this action manifested themselves. It was true that malignant tissue was more susceptible than the normal but in cases in which long acting and deeply penetrating doses had been given, the muscular and vascular structures had been found to undergo fibrosis, followed by hyaline degeneration—a stage of necrobiosis not far removed from real necrosis *en masse*. Such cases had presented themselves a year after exposure with nodules surrounding the body of the uterus which were not, as at first supposed, malignant



Fig. 6.—[illegible]

recurrences, but hyaline degeneration bundles which might, and in one of his cases had actually, gone on to rectal stricture a year later.

Professor Bumm went on to say that his present report was based on the treatment of 108 cases; fifteen of these had so far recurred. He demonstrated casts of uteri which had been surgically removed after a preliminary radium treatment. It was clearly seen that, as far as the local growth was concerned, this had been entirely destroyed, but that cancer cell nests at a distance of four to ten cm. had survived, in part at any rate, the destructive action on the primary focus. In ten cases, by a preliminary irradiation, he had rendered an operation possible and had apparently eradicated the disease, for no recurrence had hitherto manifested itself.



Fig. 7.—Carcinomata of breast given anteoperative treatment. Patient is apparently well three and a half years later.

Professor Bumm detailed his method at some length. It was, he said, a serious mistake to imagine that the greater the dose, the better the ultimate result. He found himself constantly diminishing the weight of the radium employed, and he was now in the habit of using not more than fifty to sixty mgm. at a time. Large doses were liable to produce fever; 300 mgm. could in five or six hours produce a temperature of 106° F., which might continue with intermissions for days; 500 mgm. at a dose were in his opinion directly dangerous to life.

With regard to the comparative value of radium and Röntgen rays, Professor Bumm reminded his hearers that there was a very similar struggle now going on between the adherents of electricity and gas, and as fast as the one progressed the efforts of the other party to overtake its rival become the more active. X rays had the great advantage that they could be applied without danger whenever an intensely penetrating action was desired, although their action was less rapid than that of radium. He cited eight cases of cervical carcinoma which were cured without any surgical interference in his clinic, and stated that he was able to control the radiation of the abdomen by the effects that were observed on the portio vaginalis uteri. He came to the important conclusion that radium, mesothorium, and Röntgen therapy were all equally valuable therapeutic agents, and that he who possessed no radium was able to obtain just as good results with his x ray treatment properly applied, as the former's more wealthy possessor.

This is intensely interesting. It is like reading bulletins from the field of a great battle in a campaign in which we are all vitally concerned. It certainly should inspire us to renewed effort and hope. In the same journal, two weeks later, December 27, 1913, the same correspondent wrote of Professor Döderlein's experience. Certainly we must treat with all due respect the opinion of this great gynecologist. The correspondent is a very clear writer, and I shall quote him direct:

The wide interest aroused by Bumm's recent lecture has in no sense abated, and Doctor Seuffert, Döderlein's first assistant, made the journey from Munich with the sole object of recounting his chief's further experience with the remedy since his pronouncement in the summer at the Gynecological Congress at Halle. He reported that 152 cases of carcinoma of the uterus and cervix had received the treatment. One third of these were also treated with the x rays, and none of them were treated by radium only. The clinic in Munich also used only small doses, fifty to 100 mgm., which were inserted for twenty-four hours at a time. Of 152 cases, 103 were inoperable, and the increased admission of inoperable cases was undoubtedly to be dated from the time of publication of the radium treatment. The beneficent results of the rays were demonstrable in every single case; since February of this year there had not been a single case of uterine or cervical cancer in Döderlein's clinic. A large proportion of the 152 cases were still under treatment, but for the present thirty-one of these had been regarded as successfully treated, and had been discharged. These results were truly remarkable when it was remembered that ten of these thirty-one cases had been labeled inoperable on admission. Doctor Seuffert informed his hearers that at a recent meeting of the heads of the Bavarian gynecological clinics at Munich, Professor Döderlein had demonstrated twenty-four of these thirty-one apparently cured cases to the satisfaction of all present; in none of them could a recurrence be established. In one remarkable case, in which the primary growth had deeply involved vaginal mucous membrane, and in which the pelvis was filled with secondary tumors, the whole mass and the vaginal ulcer had seemingly disappeared completely four weeks after the radium had been applied.

If one talked all night it would be impossible to give more than a small part of the imposing mass of evidence that is being piled up to show the extreme value of these methods in attacking this

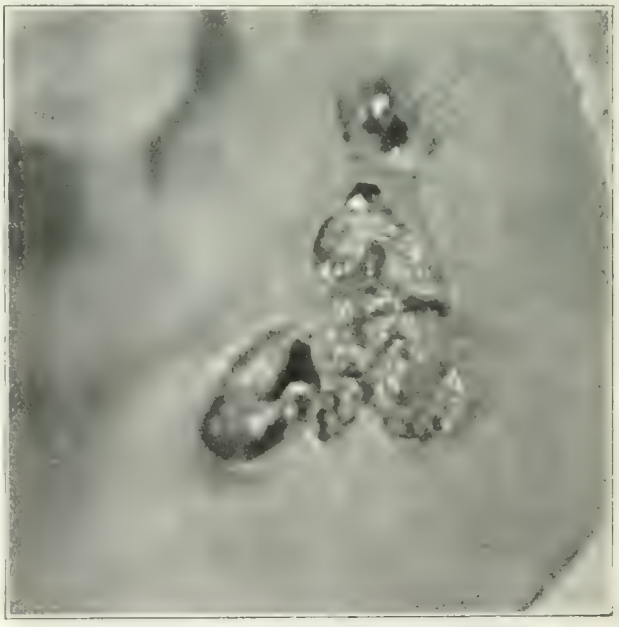


Fig. 8.—Recurrent carcinomata of the breast, greatly benefited by x ray treatment.

ancient foe of mankind—especially womankind. I shall not attempt it. Speaking of the modern trend in the treatment of malignancy, there is one great phase of this modern trend which undoubtedly in primary importance overshadows all the others That phase is our strictly modern effort to educate the public to the common danger, and to bring them to be, so far as possible, intelligent soldiers in our war against cancer. We are all realizing now that team work is the thing in the medical world as else-

where, and that the patient and indeed the public must belong to the team. What are we doing in that line?

This is a vitally important question to us all, for the laity have now acquired an interest in medical matters that will not soon forget or forgive any lapse from the most impartial spirit of widely informed modernity. If there is any one thing certain, it is that we can only do good along this line of teaching by the utmost catholicity of outlook and knowledge upon the part of the teachers. In connection herewith, the recent organization of the American Society for the Control of Cancer is a most significant sign of the times. Its directorate is made up jointly of well known medical men and men of standing in other walks of life. Its object is to cover with a high class professional and lay membership the entire country, and to teach the people directly and ethically (which means honestly) the truth about cancer. We all are agreed now that this is the only efficient and hopeful method of dealing with this great and mysteriously increasing menace.

Lately there has been widely circulated a paper entitled The Control of Cancer, by Joseph C. Bloodgood, of Johns Hopkins University. It may be read in the *Journal A. M. A.* for December 27, 1913, and elsewhere. This strongly put paper is evidently intended as the keynote of the vast campaign undertaken by the American Society for the Control of Cancer, so far as the education of the profession itself is concerned. As such it is very important and should be analyzed carefully. Early in his paper Bloodgood makes the following terribly significant statement: *"The percentage of cures in the fully developed cancer is relatively small.* By fully developed cancer I mean one in which there can be no question as to the histological evidence of malignancy. . . . When cancer is clinically malignant the probability of a cure is relatively smaller than when it is only histologically malignant, but has not yet assumed the clinical picture of cancer."

It must be remembered that Bloodgood is here speaking from the most advanced ground gained by the highest surgical training and experience in the treatment of cancer. His paper is an authoritative presentation of what surgery has to offer the cancer sufferer. Bloodgood demonstrates conclusively that so far as operative surgery is concerned, the only hope for any control of cancer lies in early operation, and by early operation he means much earlier than is usually understood. He shows that what is ordinarily regarded as a sufficiently early operation to warrant a favorable prognosis of complete cure, is really an almost hopeless proceeding, and that the very great majority of patients so operated upon and so discharged really ultimately die a cancer death.

To epitomize, Bloodgood holds, and I feel sure from my own experience that he is right, that all external cancers are shown by the history to follow upon a previous "benign precancerous lesion." This precancerous lesion is a wart, mole, fissure, chronic ulcer, or small benign growth of some kind, which may exist for a long time in an apparently stationary condition. Too often it gets very little consideration either from the patient or the family physician. Histologically it is not malignant. Suddenly it begins to grow, either from irritation of some unknown cause, and if it is now examined microscopically, cells of a malignant type will be found to have appeared. It is shown that if this growth is removed in its primary and entirely nonmalignant stage, it will never return. If there is delay in its removal until the slightest evidence of a malignant structure is found upon microscopic examination, but where there is no clinical evidence at all of cancer, unless more is done than mere excision, there will be a large proportion of malignant recurrence, the percentage varying with the location and the technic of the operation. If removed at the stage when a clinical diagnosis of cancer can be made, the very great majority of the growths recur, in spite of the most radical and skillful operations, and eventually kill the patient.

Bloodgood also teaches that the same laws obtain in regard to cancers which originate internally. Of course the great bulk of these are cancer of the breast, of the uterus, and of the alimentary canal. It is shown that here also the greater part of the cases as they come to the surgeon, are really hopeless of ultimate cure by surgery, and it is held that the education is necessary of physician and public to seek very much earlier surgical intervention. This is all true, and the necessity for earlier diagnosis and treatment is a thing which we have all agreed upon and been advocating for years. But the ideal method, the removal of all growths and defects which might eventually become cancerous, while they are still in the precancerous stage, is a most difficult ideal at which to aim.

In this world we must strive toward an ideal which is attainable, with human nature as it seems to have been made in the beginning, and as it is evidently going to be for a long time to come. This means we must still strive for a satisfactory treatment for cancer when it is really cancer, even when it is advanced cancer. It is my experience and observation, confirmed by rather wide reading of the current medical periodical press (which is always in advance of the textbooks), that the great body of surgeons are ready to welcome any help in their cancer work just as soon as they are convinced that it is real help. It is also my experience that these men who habitually have an ear close to the scientific ground, so to speak, are daily turning with more and more confidence toward the mass of irrefutable evidence that is being piled up by radiologists. Their work in the treatment of cancer has now extended over sufficient time, and the advance in methods and results has probably been unequaled in any other department of therapy. The day has long passed by when the methods of radiation are to be regarded only as a last resort, to be appealed to when all other methods are impossible or have failed. It is now a standard and well tested method of treatment, to be considered from the beginning in the treatment of any case of cancer, no matter what the stage of the disease. Of course, like surgery, it is a method of treatment easily capable of great abuse when the operator is not a trained expert. It is my firm personal conviction that the methods of radiation, whether the x ray or radium

or both, can be advantageously used in every case of malignant disease.

Many early cases can be cured by surgical means without the use of radiation, but in these cases the conjoint employment of the x ray makes their cure more certain. Also it must be urged that many cases when the x ray treatment is depended upon exclusively would be much better off if some surgery were combined with it. In regard to the very early or precancerous lesions, I feel certain in many cases methods of removal other than a cutting operation are in every way to be preferred, except for the fact that we do not obtain a specimen for microscopic examination. But is not this disadvantage overbalanced by the great advantage of a much wider application of the principle of early intervention than is possible when surgery is the only plan considered? Many persons have a deep rooted horror of the knife, that delays intervention often until it is too late. It is really remarkable what can be done with these early growths with the Röntgen ray or with radium, or with carbon dioxide snow or liquid air, or the various electrotherapeutic procedures, which have now been developed to a point of great perfection. Those with a few years' experience in the proper use of these agents, know how utterly unfounded is any doubt of their efficacy. Beside this, the greatly superior cosmetic results, and the lessened amount of scar tissue left are matters of no little moment. But no matter what plan of procedure is adopted for the treatment of any malignant growth in any stage, or any growth which it is feared may become malignant, the method of radiation by Röntgen rays or radium, should be included in the plan. When this is done, the percentage of ultimate cures is vastly increased, due to the sterilizing effect upon demonstrable outlying foci of cancer throughout the adjacent tissues.

Empire Building.

HYPERTRICHOSIS IN WOMEN.

Its Relation to Bisexuality (Hermaphroditism): With Remarks on Bisexuality in Animals, Especially Man.

By J. Herbert Claiborne, M. D.,
New York.

In the issue of the New York Medical Journal for August 16, 1913, there appeared a paper by Dr. P. Bechet, on the cause and treatment of hypertrichosis. A reprint of this paper fell into my hands recently. This subject has interested me for a great many years, although I am an eye surgeon, and I have seen a large number of cases, both in practice and in the daily walks of life. I have not studied the cases critically nor kept a systematic account of them; yet I have made careful observations as far as simple inspection would permit. I refer solely to hypertrichosis in women.

Whenever I have seen these cases, I have remarked that the individuals are more or less of the masculine type. They have coarse features, coarse voices, masculine pelvis, are generally flat chested, that is, without much mammary development, and have more or less masculine minds and dispositions—they have all or a combination of these attributes. Doctor Bechet has referred to a total of 146 women seen, of whom 106 were unmarried. This is in support of my observations, for I think it can be generally said that women with highly developed feminine qualities get married at an early age, and rarely remain unmarried.

Lombroso, in his book entitled *The Female Offender,* has shown that amongst the physical characteristics of prostitutes, moles, hairiness, virile larynxes, large jaws and cheek bones, and masculine voices occur in large proportion. Professor Mansoni, quoted by Lombroso, found amongst fifty prostitutes, fifteen with deep voices, and twenty-seven with still more masculine voices—in short, marked masculine traits have been found in this class of women. These facts likewise support my observations.

If we may proceed on *à posteriori* lines, I believe my contention will be still further sustained. Hair upon the face and body generally, is certainly one of the marks of the male animal, man, and it is not improbable that the further we go back in the scale of civilization, the more hairy he was. Adaptation justifies this conclusion, and while hairiness likewise in the female in the higher primates exists, it has been noted that hair in the female of the genus man has not been characteristic of the face and body in general. The view which I express here is not shared by many observers, if by any of them. Havelock Ellis does not, for example, support this view. He admits, however, that sometimes a certain general coarseness of physical fibre is present in women with hypertrichosis, but says it is a mistake to suppose that bearded women approach the masculine type. In support of his opinion, he quotes Max Bartell (1) and L. Harris Liston (2). Bartell's paper, which I have read, does not in reality support the views of Ellis; it deals mainly with hypertrichosis in women, but more particularly with the color of their eyes and the hair, and the relationship between the color of the hair in different parts of the body. He cites a number of cases of facial hypertrichosis in which the subject possessed the form and limbs of the female, and not of the male, as he says, and gives photographs of the cases of two women—one with a long flowing beard and moustache, and the other with full beard and moustache and long curled hair. Without considering the beard, the whole aspect of the faces of these two women was strongly masculine. This could be readily seen by covering the lower part of the face with a card and simply examining the picture from the nose up. Liston's observations were made on four insane women—one was eighty-three, one thirty-six, and two were sixty odd years old; photographs of all were furnished. Number 1, eighty-three years old, had a strongly masculine face without regard to the beard; number 2, thirty-six years old, looked exactly like a strongly marked male musician; number 3, sixty years old, had a beard seven to nine inches long and a fairly heavy moustache; she had the look of a heavy faced brutish male Russian peasant; number 4, sixty years old, likewise had a beard three inches long with marked

moustache and a bald head; she looked exactly like a bald headed old man. These cases, to my thinking, prove just the reverse of the opinion of Havelock Ellis.

It is apposite to cite here a few cases observed by myself. It is a curious coincidence, but while I was reading the above mentioned authorities, in the public library, I noticed an attendant, a young woman, evidently under thirty years of age, with a dark moustache; it was at least a quarter of an inch in length. I walked around her to get a good look at her physical structure. She was raw boned, flat chested, of masculine countenance, and apparently of no more hip development than a man. I did not hear her speak. A male attendant, whom I addressed on the subject, said she seemed feminine in her ways. I knew a lady who died at sixty years, who had a beard about an inch in length with a moustache of equal length. The beard was rather blond, though she was gray. She had married twice, and had had five sons; in that respect she was surely feminine, but her voice was coarse and masculine and her mind was very masculine. She was too fat to judge of her skeletal structure. I know a woman who is very small and has a male pelvis, is flat chested, feminine in intellect and voice, but masculine in facial expression, who is compelled to shave to keep her face clean. This woman had only one child. I know several fairly young women with heavy beards who have to shave to keep clean—they are all of masculine type. I knew a beautiful young woman whose mind was thoroughly masculine, and whose pelvis was masculine, with slight mammary development, on whose back, on each side just below the shoulder blades, grew a tuft of long dark hairs; her voice was feminine and she had one child.

The connection between hypertrichosis and the organs of generation, I believe, is demonstrated in part by the growth on the lip, chin, and pubes of the male, and on the pubes in the female, at or about the time of puberty. Bechet points out that hypertrichosis did not occur in any of the 146 cases analyzed before the age of puberty. He also notes a considerable number of cases of spontaneous disappearance of superfluous hair after pregnancy or after the reestablishment of normal flow following prolonged amenorrhea. Jackson observed a woman who, after having borne several children, manifested an extensive hirsuties during a persistent amenorrhea. Several years later she again became pregnant and after the birth of the child, the growth disappeared of itself. Hyde saw a case of a married woman thirty-three years old, already a mother of children, who did not menstruate for a year; during that time she had general and facial hirsuties. After some years she began to menstruate, and the hypertrichosis of the general body disappeared; that of the face had been removed by electrolysis. These facts, it appears to me, demonstrate the intimate association between the generative organs and hirsuties. Any observations concerning the masculine qualities of the individuals in the cases cited is lacking; therefore the conclusion just drawn alone seems justified. I believe that if careful observations were made by those who have the opportunity to observe large numbers of these cases, my contention would be sustained. The observations which I myself have made together with this preamble serve as the text for the further development of my subject.

In 1889, 1890, Paltauf pointed out the pathological symptom complex known as the status thymolymphaticus; subsequently in 1911, Neusser gave an equally clear clinical description. In America, Charles Norris has described it fully and added materially to our knowledge of the subject. The status lymphaticus includes more particularly a certain class of men whose physical characteristics generally, may be said to consist in scantiness of hair on the chin and upper lip, scanty sternal and axillary hair with feminine distributions of it on the pubes; that is, the hair ceases abruptly just above the pubes, and is not continued upward as in men; narrowness of the thorax, feminine arms and thighs; small penis, smallness and pointed character of the glans, and smallness of the testes. To these Haven Emerson (3) has added velvety fine texture of the skin, feminine abdomen, and slender, columnar neck. This same author states, and it seems to be recognized by others, that the so called status lymphaticus can be identified amongst women mainly by scantiness of the axillary, pubic, and perineal hair, and the growth of hair on the face and upper lip. This subject is of peculiar interest from a medico-legal standpoint with reference to the mortality and vitality of individuals of this class. It has been shown that they are more susceptible to disease, less resistant to its influence, and generally less able successfully to resist the deteriorating influence of society and modern life in the struggle for existence than the normal; their bloodvessel system seems to be extraordinarily vulnerable to shock and injury, the aorta in particular being small, soft, and elastic. It will be seen from this description that men of this type approximate the female and women of this type the male, but not so markedly in the latter case as in the former.

Now it has been my aim to show that women with hypertrichosis possess masculine traits, and whereas I admit that men of the lymphatic type possess more feminine traits than women of the hairy type show masculine ones, yet I draw a certain parallelism between the two types inasmuch as in each there are marks of the opposite sex. This leads me to the next point of the subject.

I regard the existence of female qualities in man and masculine qualities in women as variations in degree of the bisexual or hermaphrodite nature of the genus homo. That this same bisexuality obtains normally in man and likewise in many of the lower animals, if not most, it is my intention to set forth presently.

Man is essentially bisexual and this is evidenced by the existence in the male of the mammary glands and in the female of the clitoris. The latter is commonly recognized as the analogue of the male penis. It consists of two corpora cavernosa, a glans of spongy tissue, and a prepuce furnished by the anterior extremities of the labia minora. It is likewise provided with a suspensory ligament, two erector muscles which are inserted into the crura of the corpora cavernosa; it is therefore composed of

erectile tissue, becomes enlarged and rigid in excitement, and is as exquisitely sensitive as the male organ. It is unlike the male analogue in that it is not perforated, the urinary canal being placed by Nature just below it. Why should Nature place in the female this organ which is almost exactly like that of the male, if she did not intend that the female should share in his sexual as she does in all the other functions of his body? The answer is inevitable. Woman is in part man.

The mammæ or breasts are known as the accessory glands of the generative system, and exist both in male and female. In the male they are more or less rudimentary, unless, as Gray says, "growth is excited by peculiar circumstances." In the female they are the means of furnishing milk to the suckling. They appear to have practical function in the male. The nipple in the male as in the female is dark in color, but smaller, and is composed of erectile tissue. It is surrounded in adult life in general in the male by hair; this is lacking in the female. In extraordinary cases the mammæ in the male have been highly developed, and some reference to that matter is apposite at this point. Gould and Pyle cite numerous cases of fully developed mammæ in man. Even the ancients have referred to it, Aristotle, for example; likewise Paulus Ægineta and many other ancient writers, who noted the fact that milk is frequently given from the male breast. Hunter mentions a man who shared suckling with his wife; Humboldt mentions a South American peasant who gave milk to his child when his wife was ill, and Mehliss states that missionaries have described an entire tribe of Indians in Brazil whose women had small dry breasts, and whose men suckled the children in their stead; likewise mention is made of a negro in the Southern States who suckled all the children of his mistress's family. These facts show that at times the male mammæ take on the function and the dignity of the female ones. In addition, it is well known that supernumerary mammæ occur in both men and women.

Debierre, professor of anatomy at Lille, says that supernumerary mammæ are relatively frequent, and according to Mitchell Bruce they are seen twice as often in men as in women; they are generally small, though they resemble the normal glands. They are found to occur in many places, but as a rule on the thorax and abdomen. Charpentier described a woman who had four supernumerary glands, two on the thorax, and two under the arm. Tarnier described a woman with four mammæ; Robert saw a woman with a supernumerary gland on her thigh, who was able to nurse a child from it. Mammæ have likewise been found on the back, on the vulva, and in the groin. In 1886, Neugebauer reported a case in which he observed ten supernumerary glands. I myself have seen two supernumerary glands in men, in two soldiers; one was in an officer; he had a supernumerary gland on the left side, two inches below the left nipple. He stated that it began to appear about the time of puberty and gradually became exactly like the upper one, except it was smaller. In adult life it became surrounded by hair. The one in the enlisted man was simply noted.

The same question arises again, Why should the male be possessed of this organ of the female? The answer is inevitable, Man is in part woman, but the relative development of the two organs is greater in the woman than in the man, and in the woman serves a definite purpose. The clitoris is an integral part of the sexual organ of the woman and, according to physiologists, its sensibility is the source of pleasure in coition, whereas there is no reason to suppose that the mammæ in man have any part whatever in the sexual life or functions. It would seem that these organs in man are without purpose and that, according to the laws of retrograde evolution or adaptation, they might finally disappear. Yet there is no reason to believe this, since they exist in the lower animals and no record has been made of their retrogression. Their extraordinary development under certain circumstances and their assumption of the female function at times, furnish strong evidence that they are an integral portion of man, that they have ever been, and will ever be. The case is quite different with the mammæ in the female; for example, it is well known that excitation of the female breast will produce excitation of the whole sexual nature and organs, and it is also known that the suckling of the infant immediately after birth will excite and aid uterine contractions. Moreover, menstruation is suspended while lactation is going on and becomes reestablished when it ceases.

We will now pass on to consider the matter of bisexuality or hermaphroditism in the lower animals. Geddes and Thomson in a study of the evolution of sex, have divided hermaphroditism in the lower animals into four heads: First, embryonic; second, casual; third, partial; fourth, normal adult. Under the first they remark that some animals are hermaphroditic in young stages, unisexual in adult life; in tadpoles the bisexuality of youth lingers into adult life. Laulanié noted three stages of development in the sex of chicks; first, germ parity; second, hermaphroditism; third, unisexuality; the first period lasts from four to six days; the second begins with the seventh; the third is short; the female ovules disappear from the testes by the eighth or ninth day, and the male ovules from the ovary by the tenth. He observes that the same three stages appear in mammals. As an illustration of casual hermaphroditism, Marshall has noted that testes in the adult frog may be associated with genuine ova, or that there may be an ovary on one side and a testis with a portion of an ovary on the other. In a certain toad, *Pelobates fuscus,* hermaphroditism is frequent; the male being furnished with a rudimentary ovary in front of the testes. Similar bisexuality has been noted in the cod, herring, mackeral, and other fishes; the same occurs in butterflies. When striking difference in the color of the wings is present, the coexistence of ovaries and testes has been found to correspond to the different coloring —the color of the wings of the male and female being naturally different. Laulanié describes partial hermaphroditism thus: Only one kind of sex, ovary and testis is present, and while one is well developed and preponderates, there are more or less emphatic hints of the other. Through the school of Cuvier and Geoffroy St. Hilaire, the main facts in this matter have been made clear. Geddes and

Thomson state that normal adult hermaphroditism is rare in higher, common in lower animals. Among the invertebrates it is normal in the fixed and sluggish animals, namely, sponges, cœlenterates, worm types, molluscs, oysters, and the common snail. Self fertilization is rare, but does occur in the cestodes, also in the thread worm.

In this connection it is interesting to note the evil effect of close breeding or inbreeding in all animals, and Darwin has called attention to the curious mechanical devices arranged by nature among bisexual plants by which self fertilization is rendered practically impossible. Here at the very basis of life, we find nature's protest against inbreeding. Geddes and Thomson think that hermaphroditism was the primitive state amongst multicellular animals. Differentiation takes place by the exaltation of one kind of sexual apparatus, the three stages being as follows: First, the liberation of undivided sex elements; second, the formation of diverse kind of sex elements, incipiently in male and female, at the same time or at different periods, according to nutrition and other conditions; third, the unisexual outcome when the production of one set of elements has predominated over the other. In the embryological development of the human being no difference in sex is observed until after the fourth and fifth week; then certain slight changes take place which increase until the sex is declared. These differences occur in what are known as the genital ridges, from which ovaries or testes are developed. In the male, the surface epithelium of the genital ridge becomes flat, in the female it does not; in the female as in the male, a layer of tissue grows between the epithelium and the deeper parts, though it is not so dense in the female as in the male. In the male, there is a sharp line of demarcation between the cell columns and the stroma; in the female, the line of demarcation is less sharp. As growth goes on, the sex cells continue to increase in size in the female and become more conspicuous, whereas in the male they do not, and more nearly resemble the other epithelial elements. It is clear then, that at this stage of the human embryo sex is little more than a matter of degree. In such a state of affairs, there is little wonder that eccentricities of growth might result in partial, casual, or complete hermaphroditism, or that either sex being pronounced in an individual, decided hints of the other may be found. Havelock Ellis treats of this subject also and states that since in early stages of development the sexes are indistinguishable, sometimes throughout life traces of this early community of sex remain. He refers in this connection likewise to the possession by the female of the analogue of the male organ, and the possession by the male of breasts.

The existence of complete adult hermaphroditism in man is well recognized, and numerous instances of it have been cited in both medical and medico-legal literature. One of the most remarkable cases of this play of nature was that of Marie Madeleine Lefort; her case is stated by Gould and Pyle and photographs of her at sixteen years of age and later in life are given. This individual in particular possessed well developed breasts and both organs of generation, but it appears that neither in this case nor in any others have both organs ever been as perfectly formed as in unisexual individuals. Other cases have been reported by Virchow, in 1872, by Baddaert and Marchan, in which true hermaphroditism existed. That nature, however, abhors any such thing as perfect hermaphroditism is obvious from the infrequency of its occurrence.

As from the physical the physiological proceeds, it is not surprising to find male sexual physical and intellectual qualities in women, and female sexual physical and intellectual qualities in man. Without a doubt the so called sexual inversion, sexual perversion, or homosexuality is an illustration of slight partial hermaphroditism. Sexual inverts are supposed to have a sexual inclination toward those of their own sex; the male invert for males, and the female invert for females; there are wide differences in degree and kind. Authorities ordinarily divide sexual inversion or homosexuality under the general heads of "congenital defects" and "acquired perversity." I believe that when sexual inversion occurs at all, whether in greater degree or less, the cause lies in the possession by the individual of structural cellular elements of the opposite sex. I doubt, in fact, if it can be acquired unless there is a structural basis for it. Individuals of strongly pronounced sex, revolt at the very idea and nature abhors it. I believe that those so called cases of acquired inversion are simply brought out by opportunity and circumstance, after sexual, intellectual, and physical exhaustion along normal lines. Oscar Wilde was perhaps the most illustrious example of a male invert in our time, and I believe that he was from a cellular standpoint a congenital invert, and that the traits which he showed were brought out through sexual, physical, and intellectual exhaustion. While he has certainly shown a great deal of brilliancy, vivacity, and virile strength in his writings, there is nevertheless a strong feminine strain throughout them and it was evidenced in his acts in decent society even. Yet, one can easily see from his *De Profundis* and his *Ballad of Reading Gaol,* the idea constantly springing forth that he willfully and wantonly sinned against his nature by the unpardonable sin, and while there was much perversity in him, I believe he was following the impulse of his strongly overbalanced bisexual nature. French literature abounds in stories and descriptions of female inverts, and many quasi-scientific novels have been written on the subject—the most striking one being *La Bouche de Madame X.* This book appears to me to be meretricious, but it is consistent with a scientific description of marked inversion. Ancient history has furnished many remarkable illustrations both in men and women of this play of nature. A number of the Roman emperors, among whom were Julius Cæsar, Augustus, Caligula, Hadrian, Heliogabalus, and others, were inverts. The first, Julius Cæsar, the greatest soldier of the world, and a man of masculine courage and stern directness, is said to have been so proud of his physical beauty, particularly of the smoothness of his skin, that he would have hairs epilated in order that it might not be marred; in this wonderful man, so far as desire was concerned, history seems to point out an almost even balance; he was known as every man's wife and every

woman's husband. While we cannot place too much importance upon historical statements of this description, yet they probably never would have been made if they had not been more or less true. If these things are so, his bisexual nature was strongly marked and evenly balanced. Apart from the mention of his physical beauty no reference to structural variation has been made. Certainly there is nothing to indicate these qualities in the round head and stern cold features exhibited on the coins that have come down to us.

The love of the Emperor Hadrian for the beautiful Antinous is another striking illustration of inversion amongst Roman emperors. In their mythology the Greeks have described the giant Hercules wandering about weeping and longing for the lost Hylas, a beautiful boy. The Greeks themselves, according to history, furnished many illustrations of this form of inversion; even Socrates and Aristotle have been accused. Sappho, among the Greeks of the isle of Lesbos, was a type of pure feminine sexual inversion, and her practices have given the name of Lesbian love or Sapphism to her form of inversion. Ulrichs has said that in male sexual inverts a male body coexists with a female soul—*anima muliebris in corpore virili inclusa*. By all men and women of strongly marked sex, inverts are regarded with disgust and contempt, but it is a question whether this is just, if the contention which I make in this paper is correct; nevertheless, they should be recognized, segregated as far as possible, and kept out of so called decent society; and though no sharp scientific dividing line has been drawn, yet, when the normal bisexuality of man passes beyond the pale and becomes inverted, sound men and women do draw a line and it seems to be sufficiently well defined. It would seem from history that inversion occurs more frequently in large centres than in less populated ones, but I do not believe that this is altogether true. This condition of inversion, both in men and women, seems universally held to be a degeneration, a decadence, and individuals of this type are spoken of as degenerates. Kiernan (4) has written a scholary paper touching on this matter. He considers the various types of hermaphroditism in the lower animals as a reversion to ancestral types.

I do not regard this so called form of degeneracy as a true degeneracy at all nor as an atavistic trait, but a variation in degree in man's bisexual nature. I believe that the facts heretofore set forth support the view that the bisexuality of man as evidenced in inversion is not an atavistic reversion to the lower hermaphroditic animals, and I believe that the following is further evidence to that effect:

According to Dr. Roy C. Andrews, of the American Museum of Natural History, the most primitive type of mammal is the duck bill platypus (*Ornithorhynchus paradoxus*); then come the marsupials, and next above them the insectivora, which are the first typical placentals. The male of the ornithorhynchus does not have the rudimentary mammary glands, because there are no true mammary glands developed in either sex, and the female lacks the clitoris. The young suck the skin of the abdomen, which exudes milk, but there are no true mammary glands as in the higher mammals. Doctor Andrews states that he could not tell definitely from examination of the male marsupials at his command about the presence of the rudimentary mammary glands in the male, but he believed them to be present. In the nature of things they ought to be. The penis in the above mentioned monotreme (*Ornithorhynchus*) is perforated by a canal, which conveys only sperm, not sperm and urine. The marsupials, which stand next above the monotremes in order of specialization, are the first to have the clitoris, but in them it is divided; the male marsupial is the most primitive mammal in which the penis carries both sperm and urine.

In the typical placentals which come after the marsupials, the undivided clitoris occurs in the female, the penis carries sperm and urine, and rudimentary mammary glands occur as in man. It will be seen that the development of the penis precedes that of the clitoris and that the penis occurs in Ornithorhynchus, while the mammæ are lacking in him and his mate. The clitoris then appears in the next mammal above, which is the marsupial, the penis assumes the double role of conveying sperm and urine, and rudimentary mammary glands appear in the male. All these things are consistent with the argument of this paper and bestow on the penis the weight and dignity of precedence and importance in evolutionary development. The bisexual character of the mammal individual is not declared until the female assumes the analogue of the male organ, the penis carries sperm and urine, and the male takes on the rudimentary mammæ.

The male element is clearly the determining and commanding one. Let us here compare the determinate precedence in creation, biology and sociology of man over woman. It is evident that nature in the platypus is making for unisexuality, since the female has no clitoris, and the male has no rudimentary mammæ. That she should suddenly throw back in the marsupials and true placentals to the bisexual, sluggish, and fixed animals, presupposes a saltation contrary to the theory of evolution of man from the lower animals. Moreover, the existence of supernumerary glands in the various parts of the body, their occurrence more frequently in men than women, the existence of a tribe of Indians in Brazil whose men suckle the children instead of the women, and the occurrence of a case in which ten mammary glands were noted in one person, seem to be further evidence to this effect. Judging from the latter case particularly, atavism would assume the precedent existence of such creatures. There is no reason to believe that such ever existed and it appears that the theory of atavism here must fall to the ground. The only plausible and reasonable explanation is that of variation. In man bisexuality seems to be more marked than in most of the lower animals, except in sluggish and fixed ones, by reason of the existence in him of the psychic and intellectual quality apparently not possessed by the other animals.

The normal woman, therefore, is a strongly marked woman with a strongly pronounced structural feature of man, and the normal man a strongly marked man with a slightly pronounced feature of woman; woman is therefore more man than man is woman, and these facts are consistent with the

sexual psychic and intellectual qualifications and potentialities of both. All these things have a bearing upon a great question of the day. I refer to the invasion by woman of many forms of business, professions, trades, and heretofore recognized prerogatives of man. I refer in particular to the suffragette feminist movements. Now, while I do not mean to state that all suffragettes are inverts or in fact that any of them are, I do believe that the fact that women in general today are invading the prerogatives of man shows that there is an impelling influence behind them. I am aware that they hold that it is the economic conditions in society and business, the high cost of living in general and particularly in married life, that drive them to this pass. I think possibly likewise we may cite the higher education of women—all of which have produced the liberation of her sex, as she describes it. I do not deny that these factors have something to do with the situation, but I believe it only excites, brings forth, and accentuates the original cause, and that cause is a cellular one lying in her natural structural bisexuality, which in many of them is accentuated. I do not deny that some of these women are not masculine beyond the normal and that they have been led away through their feminine love of novelty, into an association with their stronger sisters, and I believe that many likewise are impelled by that incomprehensible complex of symptoms known as hysteria, of which vanity and love of self exploitation are symptoms, yet I repeat I believe that exaggerated masculine traits in their structural and psychic being is the original cause, and that the struggle for existence has made these qualities more obvious. I do not include in this description many noble women who have been driven into business by misfortune. It would be most interesting, but I fear impracticable, to make a biological study of this great and growing element in our social system. I cannot conceive how the violent and vicious methods employed by many can be explained in any other way. Their acts are certainly not in any sense feminine. It may be argued that this species of violence has been characteristic only of women in England, but my reply is, that the social conditions of England appear to be different as far as women and their rights are concerned from those of many countries, and since human nature is the same everywhere, it is likely that if the same social conditions existed here and in other countries, as in England, we should be witnesses of similar exhibitions of violence. If we are to read the history of the future from the pages of biology, it seems that feminine invasion of man's prerogatives by woman has come to stay, and the only remedy, if there is one, is to return to the social conditions of former years or to modify things so that their native masculine qualities may not be called out in those who are distinctly feminine, or exaggerated in those whose masculine nature is overpronounced. It is doubtful if this will ever be done.

Now why is it that men do not by some concerted act invade the prerogatives of women? While they may have done so to some extent in the making of feminine apparel, for example, it is safe to say that they have not done so in general, and it is equally safe to say they never will. To this the male will reply that he already has all the rights, and that he does not need to invade woman's realm for livelihood or support; this reason is in a measure good, but man, by reason of the slight feminine touch which he has in him, has no such impulse, certainly not in the overwhelming majority. If any set of men should attempt such a thing they would certainly be ostracized, scattered, and dispersed incontinently by strongly sexed normal men. A womanish man is the detestation of men, but masculine women seem to be borne with patience and even consideration by women in general, even by some men. If the contention set forth in this paper is correct, there must be more masculine women than feminine men in the world, and in the nature of things it should be so.

The following excerpt from a dialogue in the symposium of Plato between Aristophanes, Socrates, Alcibiades, Eryximachus, and others in the house of Agathon, after a night of feasting and drinking, on the subject of Love, is apropos and shows a most interesting similarity between the views expressed herein and those of Aristophanes, who, being called on by Eryximachus, expressed his views on the subject in part as follows:

> And first let me treat of the nature and state of man: for the original human nature was not like the present, but different. In the first place, the sexes were originally three in number, not two as they are now; there was man, woman, and the union of the two, having a name corresponding to this double nature; this once had a real existence, but is now lost, and the name only is preserved as a term of reproach. In the second place, the primeval man was round and had four hands and four feet, back and sides forming a circle, one head with two faces, looking opposite ways, set on a round neck and precisely alike; also four ears, two privy members, and the remainder to correspond. When he had a mind he could walk as men now do, and he could also roll over and over at a great rate, leaning on his four hands and four feet, eight in all, like tumblers going over and over with their legs in the air; this was when he wanted to run fast. Now there were these three sexes, because the sun, moon, and earth are three. . . . Terrible was their might and strength, and the thoughts of their hearts were great, and they made an attack upon the gods; and of them is told the tale of Otus and Ephialtes who, as Homer says, dared to scale heaven, and would have laid hands upon the gods. Doubt reigned in the councils of Zeus and of the gods. Should they kill them and annihilate the race with thunderbolts, as they had done the giants, then there would be an end of the sacrifice and worship which men offered to them; but, on the other hand, the gods could not suffer their insolence to be unrestrained. At last, after a good deal of reflection, Zeus discovered a way. He said, "I have a notion which will humble their pride and mend their manners; they shall continue to exist, but I will cut them in two, and then they will be diminished in strength and increased in numbers; this will have the advantage of making them more profitable to us. They shall walk upright on two legs, and if they continue insolent and won't be quiet, I will split them again and they shall hop about on a single leg." He spoke and cut men in two, like a sorb apple which is halved for pickling, or as you might divide an egg with a hair; and as he cut them one after another, he bade Apollo give the face and the half of the neck a turn in order that the man might contemplate the section of himself; this would teach him a lesson of humility. He was also to heal their wounds and compose their forms. Apollo twisted the face and pulled the skin all around over that which in our language is called the belly, like the purses which draw in, and he made one mouth in the centre, which he fastened in a knot (this is called the navel); he also moulded the breast and took out most of the wrinkles, much as a shoemaker might smooth out leather upon a last; he left a few, however, in the region

of the belly and navel, as a memorial of the primeval change. After the division the two parts of man, each desiring his other half, came together and threw their arms about one another eager to grow into one, and would have perished from hunger without ever making an effort, because they did not like to do anything apart; and when one of the halves died and the other survived, the survivor sought another mate, whether the section of an entire man or of an entire woman, which had usurped the name of man and woman, and clung to that. And this was being the destruction of them, when Zeus in pity invented a new plan; he turned the parts of generation round in front, for this was not always their position, and they sowed their seed no longer as hitherto, like grasshoppers in the ground, but in one another; and after the transposition the male generated in the female in order that by the mutual embraces of man and woman they might breed, and the race might continue; or if man came to man they might be satisfied, and rest and go their ways to the business of life; so ancient is the desire of one another which is implanted in us, reuniting our original nature, making one of two, and healing the state of man. . . . But the men who are a section of the male follow the male, and while they are young, being a piece of the man, they hang about him and embrace him, and they are themselves the best of youths and boys because they have the most manly nature. Some indeed assert that they are shameless, but this is not true; for they do not act thus for any want of shame, but because they are valiant and manly, and have a manly countenance, and they embrace that which is like them. And these, when they grow up, are our statesmen, and these only, which is a great proof of the truth of what I am saying. And when they reach manhood they are lovers of youth, and are not naturally inclined to marry or beget children, which they do, if at all, only in obedience to the law, but they are satisfied if they may be allowed to live unwedded; and such a nature is prone to love and ready to return love, and always embracing that which is akin to him. . . . For the intense yearning which each of them has toward the other does not appear to be the desire of intercourse, but of something else which the soul desires and cannot tell, and of which she has only a dark and doubtful presentiment.

Plato was a philosopher and a keen observer of life. He had abundant opportunities, being a Greek and living among Greeks, for observing these phenomena of nature.

A careful reading of the foregoing justifies, I am sure, its interpolation in this argument. This whimsical explanation of the desire of man for woman, and woman for man in a normal way, together with the explanation of the attraction which seems to prevail in homosexualists for their own sex, is most ingenious, and, as scholars know, quite characteristic of the original quality of the mind of Aristophanes as set forth by Plato. It will be seen then that he conceived that three sexes existed, which must have been, one with man and woman united, woman united to woman, and man united to man; and ever since the division by Zeus of each of them into halves, of the mixed being, the male part has sought his complement, and the female part has sought hers; and each half of the whole woman has sought her complement, and each half of the whole man has sought his. It will also be observed that Aristophanes has remarked, speaking of the homosexual being, that each has an intense yearning for the other, which he says does not appear to be the desire of intercourse, but something which their soul desires and cannot tell what it is. This is quite in keeping with the description that psychiatrists give of the attraction which exists between homosexualists. Also let it be noted that Aristophanes likewise remarks that they are not naturally inclined to marriage nor to beget children, but if they do, it is only in obedience to the law. He also asserts that many are valiant and manly, have manly faces, and become statesmen.

Haven Emerson, speaking of the status lymphaticus, mentions that many subjects of that condition possess manly qualities and are men of high character, integrity, and intelligence. We may refer without being specific to an illustration of homosexuality in a great general in the English army, and several unhappy cases in our own service.

If we turn to Holy Writ, we will find its statements in several respects consistent with the views herein expressed. We are told that man was made first, and woman after him from a rib taken from his side. We behold here again the precedence of man over woman; and it is but natural that she should have a greater part of him in her being, than he should have of her in his; thus, we may reverently read a double meaning in the words: "Male and female created He them." Then the mystical union of matrimony was established by the Creator, by which woman supplied to man that which he lacked, and man to woman that which she lacked, thus making a perfect whole, "and they twain shall be one flesh." Nature then found her own again, the circle was complete, which may not in the nature of things be broken, nor may any man put it asunder. These are the marriages which, according to the saying, are made in Heaven. To what extent such obtain at this day contemporaneous history will show. We cannot afford to ignore the value of wise sayings, "saws, and proverbs." They are the residual wisdom of the ages. Thus we arrive at our final conclusion; man in the generic sense of the word is by nature partially bisexual: the female partaking more of the nature of the male, than the male of the female, and these facts are consistent with his biological and sociological development.

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11 East Forty-eighth Street.

THE PRACTICE OF MEDICINE ACT.*

By William J. Cruikshank, M. D.,
New York.

I desire to offer resolutions prompted by recent attacks upon the Practice of Medicine Act. In the firm conviction that I am thus attempting the discharge of a duty to the community, I beg the privilege of a few earnest words in which to urge the adoption of these resolutions. The mere fact that, in the public interest, I am addressing a body of medical men does away with the necessity of apologizing for taking your time. Indeed, such apology would show a lack of knowledge and appreciation of medical ideals, for if we are sure of anything, we are sure that in the heart and mind of the physician, humanity's cause is, has ever been, and ever will be, uppermost. Her faintest whisper of need or distress is to him a loud call to duty, a call to which he never fails to respond. The discharge of

*Address delivered to the Medical Society of the County of [illegible]

his professional obligation, at whatever personal inconvenience or self sacrifice, is always, everywhere, the physician's first consideration. I believe that we are now face to face with a situation demanding the full discharge of that sacred obligation.

Last month our president asked several of us to accompany him to Albany on official business. The purpose of our visit was to request Governor Glynn to veto the McClelland bill. That bill provided for the licensing of the so called mental healer to practise within our State. Notwithstanding the pernicious character of this bill, it had already passed both houses, requiring only the signature of the Executive to make it a law. Of course nothing in the way of irrationality could surpass the action of our Senate and Assembly in this matter. To attempt the licensing of persons to treat diseases who deny the existence of disease, is worse than absurd, it is asinine. And to this is added the fact that the measure was fraught with such mischief that by its enactment our State would have thrown her doors wide open to the practice of all kinds of medical frauds, charlatanism, and quackery. Thus it would seem that in this instance, at least, the veto power exercised by the Governor at the earnest solicitation of a few physicians and other educators, is all that saved the Empire State from an everlasting humiliation and disgrace.

And what of the future—of next year—and beyond? For the supporters of the McClelland bill, having once come so near to victory, will renew their attempts, without doubt are even now rallying their forces. What, then, is our profession to do? What is the physician's duty in the premises? So long as those who claim for themselves supernatural power over disease, limit their operations to hysterics and others who are not sick, who can be little harmed by their practices, the question may very properly be raised whether it is not just as well to allow such cults to pass on, unnoticed and unheeded, to their natural and usual ending. But when those who, in the extremity of delusion, repudiate sanitation, thus denying the existence of contagious disease, who insist that pain, suffering, hemorrhage, tuberculosis, cancer, smallpox, and the like are not real, that *matter* does not exist, and, in a thousand other ways set at naught every established fact of science, when, I repeat, such persons attempt to procure special legislation empowering them professionally to care for the sick, and thus place human life in jeopardy, I believe that our profession should speak and act. We know that in so doing we shall be compelled to meet the accusation that our opposition to charlatanism has its origin in self interest, but we know also that the cutting in half of the death rate in one generation, answers more eloquently than could words, such perversion of the truth. We know that the profession which has conquered smallpox, Asiatic cholera, yellow fever, diphtheria, puerperal sepsis, and the like, can afford to look with pity and disdain upon such aspersions. And because of such contemptible and unjust criticism, shall the profession which gave to the suffering world anesthesia by ether and chloroform, bacteriology, and aseptic surgery, here hesitate in the discharge of its duty to mankind? No. The conservation of human life and health has always been the duty of the physician, and there will be no faltering in the discharge of that duty. Whatever may be the individual opinion as to the method which shall be adopted, we are all agreed upon this: That the medical profession of the State of New York will not tolerate the incorporating into our Practice of Medicine Act, of the superstitions of the Middle Ages, call them Christian science, mental healing or what you will; and we are further agreed that we will always vigorously resist any attempt whatsoever to lower the present high standard of medical education. It is in the knowledge of our perfect accord on this very grave question, that I offer these resolutions:

Whereas, A bill known as the McClelland bill recently passed both houses of our State legislature, and

Whereas, This bill provided for licensing to treat the sick, persons who deny the existence of disease and the necessity of sanitation, and

Whereas, The passage of such a bill would place in jeopardy the health and lives of the community, and

Whereas, The organized medical profession is the recognized guardian of public health,

Now, therefore, be it resolved, That this society denounce as dangerous and pernicious any attempt to lower the requirements of the Practice of Medicine Act, and that it declare its intention of opposing any such attempt with the utmost vigor; that in pursuance of this purpose this society seek the cooperation of other medical bodies by sending to them a copy of these resolutions, with a letter urging them to endorse the same or take similar action in the premises: That a copy of these resolutions be sent to the Governor and to the members of the State legislature as an expression of the hope that they will look with suspicious scrutiny at the source of any attempt to modify the laws governing the practice of medicine; and it is further resolved

That copies of these resolutions be sent to the editors of the medical journals and of the leading newspapers published in this State, with letters to be prepared by the publication committee, explaining their purpose and urging their support.

102 Fort Greene Place, Brooklyn.

POST MORTEM EXAMINATIONS AMONG THE JEWS.

An Historical Sketch and a Plea to Jewish Physicians.

By C. D. Spivak, M. D.,

Denver,

[illegible]

BIBLICAL PERIOD.

The Yiddish speaking Jews have coined a distinct word for post mortem examinations—*Palmessen* (1). The definition of this word is twofold: 1. The art of preserving the cadaver from decomposition, or embalming; 2, the science and art of examining dead bodies in order to ascertain the cause of death.

The Egyptians, among whom the Jews lived in the dawn of their history, believed that the soul returned to the body after the lapse of from three to ten thousand years after death. It was naturally the ambition of every Egyptian that his body should be embalmed so that his soul should find its eternal abiding place in proper shape and form. The art of preservation of dead bodies was brought to a high degree of perfection in the land of Egypt. It had been estimated that the custom of embalming was practised during a period of approximately five

thousand years, and that no less than seven million bodies have been thus preserved. Thousands of mummies have been exhumed and hundreds of them are to be found in the various museums in Europe and Asia. In the year 1881 thirty mummies of kings and princes of ancient Egypt were excavated, among which was the mummy of Rameses II, known in Jewish history as Pharaoh the king of Egypt "who knew not Joseph" (2), and "who did not permit the Jews to depart from Egypt" (3).

The oldest document regarding embalming among the Jews occurs in the Pentateuch. After Jacob blessed his children "he charged them and said unto them: I am to be gathered unto my people, bury me near my fathers . . . in the cave that is in the field of Machpelah . . . in the land of Canaan" (4). It is self evident that it was an utter impossibility to transport a corpse in proper condition over such a long journey under the burning rays of the African sun. To carry out the will of his father, Joseph was compelled to adopt the method of the Egyptians, and he "commanded his servants, the physicians, to embalm his father, and the physicians embalmed Israel" (5).

The second case of embalming is mentioned in the passage, "So Joseph died, being one hundred and ten years old, and they embalmed him and he was put in a coffin in Egypt" (6). The body of Jacob was transported to Canaan immediately after it was embalmed (7), but the remains of Joseph were brought to Canaan a few centuries later, when "Moses took the bones of Joseph with him, for he had caused the children of Israel to swear, saying, God will surely visit you and ye shall then carry up my bones away hence with you" (8). All that is recorded in the Bible concerning the process of embalming is that it lasted forty days (9). Herodotus (10) describes the process of embalming as carried on by the Egyptians of that day as follows:

> The brain was extracted by means of a bent iron instrument through the nostrils. The intestines were removed through an incision in the left side of the abdomen. The abdominal cavity was cleansed with palm wine and filled with myrrh, cassia, and various spices and the opening sewed up. The body was then washed, swathed in long bandages of gummed cloths, and placed in a wooden coffin. The majority of the population kept the coffin of their relatives in their homes. The rich, particularly the kings, built extensive tombs carved in stone and ornamented with figures and hieroglyphics which described the life and achievements of the deceased. The art of embalming was in the hands of the priests and physicians and was kept a secret. Even to this day it is not known with certainty how the various spices were mixed nor the method of their employment. So perfect was their skill that the skin upon the feet of mummies two and three thousand years old is as soft and elastic as that of a fresh corpse.

It is quite certain that the custom of embalming was not prevalent among the Jews simply because it was too expensive, the cheapest method amounting to over one thousand dollars for a single body. The Israelites, who were kept busy in building Pithom and Rameses, and who needs must gather the straw with which to make the bricks (11), could hardly be imagined to indulge in the pleasure of embalming their relatives. It was different in the case of Jacob and Joseph. Both were prominent people in the land, and it was imperative that their bodies be put in condition to withstand the long journey.

POSTBIBLICAL PERIOD.

From certain passages in the Talmud it appears that some of the sages were considerably perturbed concerning the embalming of Jacob's body. "Rabbi said, Why did Joseph die before his brothers?" Because he allowed his father to be embalmed. God said to him (Joseph), Could I not have preserved without embalming my righteous ones?" (12). In a conversation at a banquet Rabbi Jochanan said that Jacob did not die. Rabbi Nachman asked him: "Have the mourners mourned for him, and the embalmers embalmed him, and the gravediggers buried him for naught?" To this Rabbi Jochanan replied: The scripture says, "Fear not my servant Jacob, saith the Lord, and be not dismayed, O Israel, for behold I will save thee from afar and thy seed from the land of captivity" (13). God compared Jacob with his children. "As the children live so doth also live Jacob" (14).

The Jewish rites and customs relating to the treatment of the dead are based on the following passage in the Bible: "And if a man has committed a sin for which there is a punishment of death and he be put to death and thou hang him on a tree, then shall his body not remain all night on the tree, but thou shalt surely bury him on that day, for he that is hanged is a dishonor of God and thou shalt not defile thy land which thy Lord thy God giveth thee for an inheritance" (15). The Talmudists deduced the following conclusions from the foregoing rule, namely, if the body of a sinner must come to burial on the same day, then a righteous man must assuredly be laid to rest within twenty-four hours. From this premise evolved the idea that anything which may be considered an offense to the dead, *nibul hameth*, is strictly forbidden (16). For instance, when it becomes necessary to transfer the remains of the dead from one place to another, the body must not be packed in a sack, nor thrown on the camel's back, nor sat upon, for it is considered an indignity to the deceased (17). The Talmud tells the story of a son who sold the property of his deceased father and then died. The relatives held that the son was not of age, and therefore the bill of sale should be declared invalid and the property returned to them. To prove their statement they demanded that the body of the son be disinterred and a post mortem examination made. The case came up before Rabbi Akiba, who rendered a decision that in litigations involving monetary considerations, it is an insult to the dead to disturb his peace and the body must not be disinterred (18). The law in reference to the exhumation of dead bodies reads: "It is unlawful to remove the body or the remnants of bones from one place to another, whether from an honorable place to an equally honorable one, or from a lowly place to an equally lowly, or even from a lowly place to an honorable one, not to speak of the reverse. It is, however, permissible to remove the same if the dead is to be interred among his own, for it is pleasant for a man to repose alongside of his fathers" (19).

The question whether post mortem examinations were made for purely medical purposes during the Biblical period, may be answered in the negative. Moses laid down the law that "he that toucheth the

dead body of any human person shall be unclean seven days, and he that purifieth himself not hath defiled the tabernacle of the Lord, and that soul shall be cut off from Israel" (20). It is evident that such strictures were not conducive to scientific research in pathology. Moreover, it was not alone the contact with the dead body that caused the person to become unclean, but even "When a man that dieth in a tent, every one that cometh into that tent and all that is in the tent shall be unclean for seven days" (21). So rigorously was this rule carried out that as a matter of prevention the graves on the roads leading to Jerusalem were painted white lest the pilgrims coming to the temple on the three high holidays (22) become perchance unclean through contact with the dead or through mere presence in a tent where there was a dead body (23).

Since the law of "tent defilement" was only operative in case the major number of the bones of the skeleton were present in the tent (24), the Talmudists were compelled to ascertain the number of the bones in the human body. Although Galen (25) was cautious in expressing his opinion as to the number of bones in the human body and said "there were more than 200 bones," and Hippocrates (26) gives the total number as 111 (including the nails), the Talmudists enumerate minutely all the bones in the Mishna (27) and give the number as 248. Rabbi Samuel, a physician, relates that his students had boiled the body of a lewd woman who had been condemned to be burned and they counted 252 bones (28). Aba Saul, an undertaker, studied the bones of the dead. He found that the bones of those who drink strong wine look as if they had been burned, of those who drink wine mixed with a large quantity of water, are transparent, and of those who drink wine mixed with proper quantity of water, were covered with fat (29). A "collector of bones" made the observation that the bones of those who drink cold water are black, of those who drink hot water are white, and of those who drink wine are red (30). Thodos the physician was an expert in osteology. They brought to his school a basket filled with human bones. He examined the bones and said there was not a sufficient number of vertebræ to make up a complete spinal column of a man (31).

POST MORTEM ON ANIMALS.

On the contrary, post mortem examinations of slaughtered animals were obligatory. The Jews have been the only people in the entire world who during the last twenty centuries required that every animal killed for food should undergo a post mortem examination. Carcasses found on examination to have suffered during life from an incurable disease or injury were considered *trepha,* unfit to eat, and those found to be sound were considered *kosher,* fit to eat A voluminous literature comprising the Talmud, and its numerous commentators and the responsa is devoted to the laws of the Jewish method of slaughter and to the pathological findings at post mortem examinations. Especial stress is laid on the anatomical continuity and physiological soundness of the lungs (32). There is no doubt that the longevity of the Jews and their comparative immunity to a number of diseases are due to the fact that for centuries they have not ingested contaminated meat. It is quite incomprehensible why the other nations among whom the Jews dwelt, and whose general culture was higher than that of the Jews, have not grasped the hygienic importance of the Jewish method of post mortem examination of slaughtered animals. It is only a few decades since the civilized world made the discovery of meat inspection and its bearing on the health of the people. And even in our days the custom of meat inspection is practised in a desultory manner in but a limited number of countries.

That the autopsies held upon animals had a quickening influence on the development of veterinary science is evidenced from the following case, which is unique in the annals of ancient medicine. Rabbi Habiba had a sheep whose hind legs "dragged." One rabbi said that she suffered from a certain internal malady called *shigrona,* but Rabbina said that the marrow of her spine was injured. In order to decide as to which of the rabbis was right the sheep was slaughtered and on post mortem examination it was found that Rabbina made the correct diagnosis.

PRESENT ATTITUDE.

What is the attitude of the Jews of the present day toward the question of autopsies? In this respect they are on par with the Roman Catholics and perhaps somewhat stricter. To the sentimental reasons which are shared, alas, by all the laity, namely, the horror of having the bodies of their dear ones "cut into pieces," "mutilated," "disfigured," etc., there is added the fear of transgressing a Talmudic law. So far as I know, there is no mention of autopsies in all the Jewish literature of the middle ages, and the only case mentioned is the decision rendered by Rabbi Segal Landau (32), published in his book of *Responsa Noda b'Yehuda.* This book is known among the learned Jews as a model of logic and acute reasoning. His response was to an inquiry from Rabbi Laib Fishels in reference to the following case: A Jew in London was operated on for stone in the bladder. The operation was not successful and the man died. The surgeon (name not given) asked for the privilege of performing an autopsy on the body in order to ascertain the cause of the failure of the operation. The opinion of the local rabbis was sought. It seems that the rabbis differed in their views. The argument of the one who permitted the autopsy was based on the following reasoning: The patriarch Jacob was embalmed because the process was an honor to him, and likewise the autopsy on the man who died from stone in the bladder should be considered an honor for him, because through it the life of another human being might be saved in the future. He cited also the case where a rabbi permitted the use of lime as a preservative upon a dead body that had to be transferred to the "eternal house" of his forefathers. The other rabbi, who withheld his sanction to the performance of the autopsy, based his argument on the case cited above when Rabbi Akiba (18) decided adversely. Arguments pro and con ensued, and the London Rabbis decided to submit their case for authoritative and final decision to Rabbi Landau, the author of *Noda b'Yehuda.* He discussed the subject from a strictly Talmudic standpoint with his usual hairsplitting pipilistic niceties. He cites the

following interesting disquisition upon a hypothetical case in the Talmud. A murder was committed. The defendant avers that the victim at the time of his death had been mortally injured from a previous cause and therefore he is not guilty of murder since the victim was *trepha* (33) and would have anyhow died. The question arises, Is it permitted to perform an autopsy on the dead body in order to ascertain whether the murdered man was mortally injured ante mortem and thereby possibly save the life of the alleged murderer? (34). His brief of the case was summarized thus: When it concerns the saving of a human life there can be no question of the permissibility of an autopsy, because the saving of a human life supersedes all commandments of the Torah except three, shedding of the blood, lust, and idolatry. In our case, however, there is no sick man present who needs to be cured immediately. For the sake of a similar case that might happen in the future we are not permitted to transgress an injunction of the *Torah*. For if we should minimize the importance of autopsies, God forbid, they would be practised on all the dead indiscriminately (35). It is apparent that Landau instinctively felt that his argument was rather weak, for he adds: "Even the Gentile physicians do not perform autopsies on all dead bodies, except on criminals condemned to be executed or on those who willed during life that their bodies be subjected to an autopsy (36). He concludes his response with a reproach to his friend Fishels for having committed an error in hastily lending his authority for the permission of the autopsy. From the controversy it is impossible to state definitely whether the autopsy was performed or not.

VIEWS HELD BY RABBIS.

The law in reference to autopsies among the Jews may therefore be summed up as follows:

1. Autopsies are not permitted when they are an indignity to the dead.

2. Autopsies are permitted when they are an honor to the dead.

3. Autopsies are permitted when a human life can be saved thereby, for instance, when there is present a sick man who suffers from the same malady from which the deceased died.

4. Autopsies are not permitted for purely experimental purposes, i. e., when the sick is not "before our eyes."

The subject of autopsies among the Jews is now occupying the minds of many interested parties, especially the Jewish physicians who, as attending physicians and surgeons, serve in many of the Jewish hospitals, whose number is increasing with each year. These physicians have all received their education in modern, up to date schools and have been imbued with the spirit that every autopsy performed adds to the sum total of human knowledge and is a service to humanity. They scorn the idea that an autopsy may be performed only when there is "before our eyes" a similar sick person who can be benefited immediately by the operation. The thousands of Jewish physicians throughout the world do not care whether there exists an obsolete law prohibiting autopsies, and nothing will deter them from making a post mortem examination in a case from which they can learn something which will benefit another human being, one even yet unborn.

But here is the rub. The trustees of the various hospitals are, as a rule, men who strictly adhere to traditional laws, and even those who are more liberal in their views, do not care to antagonize their contributors and supporters. The Medical Advisory Board (37) of the Jewish Consumptives' Relief Society has taken the initiative in this movement and has decided to set an example to all other Jewish hospitals. They have adopted a rule that every case which during life presented symptoms which had not been thoroughly understood, should be examined post mortem (38). This rule had been adhered to during the last ten years in face of the strong opposition of some local people. The agitation against the physicians composing the medical advisory board is so great that a special society under the name *Yakre Deshachve*, "Honoring the Dead," was organized and incorporated under the laws of the State of Colorado, whose aim is to invoke the law against the board (39). But the board is not dismayed. The members, individually and collectively, carry on a propaganda of reform and enlightenment, both orally and in the Yiddish press. They hope that the learned rabbis throughout the country will discuss the subject at their conventions and modify the stand taken by the author of *Noda b'Yehuda*. The writer, who is a great admirer of the writings of Rabbi Landau, is sure that had Landau lived in our days, and witnessed the fact that the Gentile physicians throughout the world make autopsies upon all the dead they can lay their hands on, and do not have to wait for the bodies of those condemned to death for the performance of an autopsy; had he known that the telephone, wire, or wireless can flash a new discovery made by a surgeon in London and make it known throughout the world in half an hour and that the new method may be used by a surgeon in New York within twenty-four hours and a life saved; had he known that at all times there are hundreds of human beings afflicted at the same time with stone in the bladder and countless other bodily ailments; had he known all this, the good and wise Landau, may his memory be blessed, would not have insisted that the sick must be present "before our eyes" whenever an autopsy is to be made.

I appeal to all Jewish physicians to help the Medical Advisory Board of the Jewish Consumptives' Relief Society in their propaganda for reform by their influence upon the rabbis of their respective congregations and upon the people at large, to the end that the present attitude of the Jews toward post mortem examinations be modified in consonance with modern ideas, which in no way conflict with the tenets of Judaism, but which, on the contrary, will hasten the realization of the Talmudic motto of the Society: "He who saves one life is considered as if he had preserved the whole world" (40).

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1421 COURT PLACE.

THE TEACHING OF GENERAL MEDICINE.*

By CHARLES HUGH NEILSON, PH. D., M. D.,
St. Louis.

The teaching of medicine is a much discussed subject. Nearly every teacher of medicine, or at least nearly every dean, has evolved what he considers the ideal way to teach and arrange a curriculum for this important subject. The fact that so much has been written on this theme shows clearly that no commonly accepted ideal has been reached.

Progress is made in any field, only when we strive to reach an ideal. Ideals, however, especially in educational lines, are changeable things. These ideals are also the creatures of environment; for the ideal of the man in a well endowed institution may be unattainable for the man in the poorer institution. However different these ideals, there must be a similarity between them, if there is any fundamental principle in education. There is a business maxim which says, Do not make excuses but make good. In the effort to make good, enthusiasm is necessary; but it must be enthusiasm backed up by knowledge. Enthusiasm plus knowledge will give success just as surely as mass times velocity equals the momentum of an object. But you say, What kind of knowledge is necessary for the equation? The answer must be, Knowledge which is usable, knowledge which is systematized, knowledge with which we can see all possibilities and relations. We, as medical teachers, have the enthusiasm and we presumably have sufficient knowledge; but do we present our knowledge in usable form? If we fail to get proper educational momentum, possibly it is because this factor of usable knowledge is too small.

A noted educator once said "that man will teach with power who cannot see the horizon of his knowledge." Some teachers always seem to teach with power, or at least with a powerful voice; but the knowledge they impart is not connected with anything past, present, or future. How can we overcome these faults in our teaching? Let us look at the curriculum and see.

The curricula of many medical schools are monstrosities when considered from the viewpoint of pedagogical principles. This comes about because many of them are made to fit the convenience of the teachers. Some teachers must have certain hours, or the clinical professor must have hours for his work, which do not conflict with his office or calling hours. This fact necessitates the dean's rearranging his outline, and when completed the curriculum has but few of the earmarks of what should be a thoroughbred modern program. We may speak of such a curriculum as *de convenance*. In some of our well equipped schools the curriculum is also bad. It is a legacy of the past with all the tender memories and labors of bygone days. The school may dote on its full time teachers and its modern and Flexnerized equipment, when, in fact, it fails to recognize its fossilized program.

What then are the prerequisites of a good curriculum? This question may be discussed under four heads:

I. The sequence of subjects and the correlation of ideas should be a fundamental principle in arranging a curriculum.

II. The correlation of the clinical departments with the fundamentals should be carefully worked out.

III. The placing of teachers should be carefully considered.

IV. Waste in medical teaching should be reduced to a minimum.

I. The modern medical school ought to obey the laws of modern pedagogical thought. The program should be arranged in a natural developmental sequence; that is, the subjects should be so arranged in the various years that the one subject leads up to the next one related to it. I believe this is done in a fair degree in most of our medical schools and further discussion is unnecessary.

A pedagogical principle, which is broken by the majority of medical schools and badly bent by the remainder, is the question of correlation of related ideas and subjects. Correlation in teaching is one of the best recognized of modern educational methods. The teaching of medicine is at least fifteen years behind other subjects of instruction in the application of this important principle. Correlation of related ideas is a question, both for the individual teacher and the curriculum committee. What is really meant by correlation of related ideas? An illustration may make this clear. A child in the public school is being taught the length, breadth, and width of a cord of wood. In addition to the mathematics of a cord of wood he is taught the various kinds of wood, their habitat, value, and uses. He is taught how wood is cut, and its method of transportation. He is told what becomes of wood when it burns or decays; how charcoal is made, etc. The child thus gets a lesson in mathematics, in physics, in botany, in geography, and chemistry. His knowledge is tied together and his interest in his work is sustained.

The principle of correlation is a sound one and its adoption would enable schools to turn out a better product. Correlation is the mortar, so to speak, which binds the so called fundamental years with each other, as well as the fundamental years with the succeeding clinical years.

How can the correlation of related ideas be car-

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ried out? If we studied the actual teaching more and the curriculum less, I am sure the answer would be plain. We find a chemist teaching as an independent unit. This chemist either does not care or does not see the relation of his so called pure chemistry to physiological chemistry; nor does the physiological chemist see the close relation of his subject to physiologoy or to pathology. Both the general chemist and the physiological chemist would laugh at medical chemistry, yet this term does not imply a superficial chemistry as they may believe, but a correlated chemistry. The physiology of digestion should be taught, if possible, at the same time as the chemistry of digestion, even if in separate departments. How much more realistic the teaching of the pathology of pneumonia would be, if the physiological chemist were asked to give the chemistry of the stage of resolution, even if fewer sections were studied and described. Again, the pathology of passive congestion would be more clear if the physiologist were called in to give a lecture on the physiology of passive congestion. Anatomy might be made a living anatomy by outlining on his own body the organs a student is studying, even if a few muscle attachments, etc., were left unstudied.

II. If we extend the idea of correlation and include in it the correlation of fundamental departments with the clinical departments, we shall have a still more usable conception. How little may clinicians know of the work being done in the first two years; because, in too many instances they were trained only for clinicians and because no effort is being made on their part, nor on the part of the authorities to instruct them, except by the college catalogue. Again, how few men in the first two years have a real conception of the work done in the last two years, because they are nonmedical men or because they are too wrapped up in their own problems. How few in all the teaching faculty have any interest in or knowledge of the broad lines of educational development! Why are these things so? First, because little or no attempt is made by conferences or teachers' meetings to develop general interest along these lines. Second, because lack of sympathetic relationship is the natural outgrowth of the departmental idea. Departments are made up of specialists in this or that field. These specialists are generally so engrossed with their own problems as to be heedless of related problems in their own department and correlated problems in other departments.

The medical schools of the past had in them the germ of correlation, although correlation as an educational method was as yet undeveloped. In those days the student had internal medicine, therapeutics, etc., taught him in each year of his course. When he came to study his anatomy, physiology, and chemistry, he, himself, could see the relation and tie the facts together.

The basic fault of such teaching lay in the fact that the teachers of that period were not trained anatomists, chemists, pathologists, etc., and their teaching of the fundamentals must, as a consequence, have been superficial. Their clinical teaching was also the so called practical kind. Even though the students were able to correlate their knowledge, such as it was, the result was not good; not because the method was wrong, but because the teaching lacked depth.

Specialism in clinical medicine gives the diseased individual a better chance for life and health, but the specialist as a teacher of medicine has made medical education piecemeal. The specialist, in his enthusiasm for his subject, forgets the interrelationship of disease and basic facts underlying all diseased conditions. There results a hodgepodge of isolated, unrelated facts in the mind of the student. This method of teaching is just as extreme as was the teaching in the old days. There is good and bad in each. A combination of the two would approach the ideal. Specialism is and should be the foundation of medical teaching, but it should be a correlated specialism.

A conference of the departments of physiology and anatomy with that of neurology to discuss the teaching of the nervous system might make a difficult subject more easy. Would it violate any sane principle to have the neurologist give a lecture and demonstrate a case of tabes, or transverse myelitis, when the physiology of the tracts of the cord is studied? Would the physiology of the circulation be any less interesting, or would valuable time be lost if the internist were called in to demonstrate a case of heart block, broken compensation, or a case of nephritis with high blood pressure? The demonstration of a case of hyperacidity would fasten the facts of gastric physiology and chemistry in the mind of the student of physiological chemistry.

Correlation of the theoretical, first two years with the more practical last two years would, by the methods indicated, be brought about. The students would be benefited, the teachers would see each other's viewpoint, and the educational principle, the correlation of related ideas, would be a reality.

III. Last year, Dean E. P. Lyon, in an address before the Association of American Medical Colleges, emphasized the man as a large factor in medical teaching. This is true, but I believe in addition to the man, the placing of the man in a well coordinated program is equally important. A strong teacher improperly placed will be less effective than an average teacher properly placed.

If we are sick and call on a great diagnostician, we expect, and have a right to expect, his personal attention. Too often the individual is turned over to assistants and his "eminence" gives us merely a cursory consideration, except when the bill comes in.

A similar practice is all too frequent in our universities, especially so in our medical schools. A medical school which has the means and wishes to be in good standing, scours the country for the expert investigator as head of a department. His qualifications for teaching are considered of minor importance. Such a man is placed, or places himself at the head of a corps of lesser lights. The *Geheimrat* too often withdraws into his holy of holies, his laboratory, and spends his time in doing research and departmental executive work, with a minimum of teaching. He turns over to his assistants the bulk of teaching and laboratory work. I believe in research work as much as any man, but

let us also have the inspiration of the master in the classroom. I believe medical schools are more guilty of this injustice to their students than any other schools; especially is this true in the clinical years. A celebrated church dignitary once said, "Give us the first seven years of a child's life and we care not who has the rest." I say, Let the head professor and professors have the first year's teaching of internal medicine, or any clinical subject, and the assistants can safely do the rest.

How often physical diagnosis, clinical pathology, history taking, and methods of diagnosis which come in the first clinical years are turned over to assistants! What lasting impressions the professors with their clinical experience and years of teaching could make on these minds filled with all the facts of the first two years' work! Physical diagnosis should be taught by the expert, and not by the recent graduate. Diagnosis and differential diagnosis should not be taught by the novice. Clinical pathology, which in many ways is the summing up of all the laboratory work of the so called fundamentals, should be in the hands of a master.

Let the deans or university authorities encourage the research work of their men, but let them demand a fair proportion of their time for actual teaching in lecture hall and laboratory. Let these great men be an actual inspiration, instead of *scene shifters and directors.*

IV. The subject of waste in any field of endeavor is a fertile one for investigation. In past years, fortunes were lost in many great commercial enterprises, because the by products were wasted. Today these by products are worked over into many useful articles, and constant financial leaks are thereby stopped.

When we contemplate the great equipments, the great and carefully selected teaching force, and the amount of educational effort in our medical institutions, and then look at the product, the question at once arises, Is the doctor of today better versed in the medical facts of his age than was the doctor of the past in the facts of his age? There ought to be at least a direct ratio between them. I am sure many teachers feel their end results are not consistent with their efforts and enthusiasm. Where is the leak or waste? Are our educational methods wrong? Not wholly, as a rule. Is the equipment and choice of leaders at fault? Not often. I feel the trouble lies in attempting to teach too much in detail instead of along general lines. The teaching of unrelated facts, the doing of useless experiments, and the teaching of ultrascientific theories which have not yet been woven into our medical fabric, are a basis for this waste.

The pendulum of laboratory and experimental work has swung far beyond its normal arc. In the past it was at the opposite end. There is a normal arc and that will be found when we choose our laboratory experiments so as to teach fundamental facts and principles and not merely interesting facts.

Each department in our medical schools attempts to fill the educational cup full, yea, verily, pressed down and running over. What is the result? The poor freshman with such a cupful of anatomy, histology, chemistry, and physiology and a few other [illegible] us teach more by teaching less. Let us Flexnerize on a more carefully selected diet and use the agar-agar of repetition!

Our laboratories are too often mentality deadeners. Laboratory work, as primarily planned, was meant to bring out originality. Do we accomplish that result? We keep the students in a laboratory from 8 a. m. to 5 p. m., day in and day out, and then expect them to be physically and mentally fit to correlate, digest, and think for themselves. When one considers this stuffing process of our students, he is reminded of the custom in certain parts of Germany where geese are boxed up and stuffed with noodles. With the geese they obtain the desired result—a large fatty liver; with the students we obtain the undesired result—much wasted time and energy.

The method of giving so many pages of a laboratory outline or typewritten sheets to a student and demanding the note book at the end of the period with these experiments completed, is not an ideal laboratory method. It defeats the very purpose for which it was created. Does this method stimulate originality? Is the time spent in anatomy in "skinning" the cadaver just so, or dissecting out the ramifications of the cutaneous nerves and the divisions of the superficial veins conducive to originality? Does all the time given to nerve and muscle physiology and the vagaries of the electric current make for originality? Should a grade in physiological chemistry depend on the number and beauty of preparations of substances whose chemistry is often unknown? Should a teacher dilate on his research work and leave out established facts? The whole question depends not on what we should teach, but what we should not teach. Let us have more type experiments and less senseless repetition, even if the student has a few hours to himself for reading and digesting.

In the clinical years the same waste of time, material, and ability is often found. The teaching in the clinical years should be type teaching. One case of pneumonia, thoroughly studied and worked out, is worth much more than a dozen cases named. It is a waste to attempt to teach medicine with too much material, quite as serious as it is to attempt to teach it with too little. How often the number of cases a student is shown, is considered the acme of good clinical teaching. Here again we waste the time and ability both of teacher and student.

I feel sure the thought in this paper cannot be considered as an extremist viewpoint. I believe in modern medical teaching. I believe in the laboratory, but there is more than a reasonable doubt that we are getting the best results from the money, time, and ability expended.

Our American Medical Association has done a great work in cutting off here and adding there. The proper number of hours has been somewhat established, but little or no effort has been made to bind the whole together. Let us correlate ourselves with the good in the past. Let us correlate ourselves with present conditions. Let us bind our whole medical structure together with the correlation of ideas, placing each teaching stone in its

proper place and reducing the building waste to a minimum.

Then will the teachers of medicine get results in keeping with their efforts. Then will the recent graduates be more efficient to undertake the problems of alleviating human suffering. Efficiency is the watchword of the day.

Humboldt Building.

CÆSAREAN SECTION FOR DOUBLE MULTILOCULAR OVARIAN CYST.

By George L. Brodhead, M. D.,
New York.

Case. The patient, Mrs. S., aged twenty-five years, had been married five years, and had had no miscarriages. She had been confined about three years before, the membranes having ruptured twenty-four hours before the onset of labor, the pains continuing for several days, until finally she was delivered by forceps of a nine pound stillborn child. The patient came to me in March, 1913, when two months' pregnant, exceedingly anxious for a living child. The pelvic measurements were normal, but the outlet was slightly contracted. The pregnancy was uneventful until the end of the eighth month, when upon examination, an interesting condition was found. The position was left occipital anterior, with the head above the brim, and in Douglas's pouch was felt a tumor which resembled an ovarian cyst. The patient was advised to assume the knee chest posture several times daily in order to facilitate the replacement of the tumor. Two weeks later, under an anesthetic, an unsuccessful attempt was made to replace the tumor, and the patient consented to have a Cæsarean section at term. On October 22d, the operation was performed, and a child weighing eight and one quarter pounds was extracted in good condition. The right ovary was found to be the seat of a multilocular cyst the size of two lemons, and was crowded down in the cul-de-sac. This was removed, after which the left ovary, presenting the same appearance, was also removed, and the abdomen was closed. The patient made an uneventful recovery, leaving the hospital with her child three weeks later.

These cases of pregnancy complicated by fibroid and ovarian tumors, are interesting and present some questions for discussion. If, for example, the ovarian tumor appears at about the fifth or sixth month, should it be removed by vaginal section, or should an effort be made to replace the tumor by posture, etc., and failing, should a Cæsarean section at term be done, removing the growth at the same time? In my case the course pursued seemed the only proper one, but the possibilities of the subject are most interesting.

A MAGNETIZED NEEDLE HOLDER.*

Second Communication.

By Cheney M. Stimson, M. D.,
Philadelphia.

Some time ago it occurred to me that if a magnet was placed in the end of a needle holder, it would greatly facilitate the handling of the surgical needle. Not only would it aid in picking the needle from the table, thus rendering it more accessible for adjustment in the jaws of the holder, but it would be of distinct advantage in regaining needles and pieces of needles which had accidentally fallen into inaccessible places in the field of operation. With this object in view I had an ordinary Doyen needle holder magnetized and found that the idea was practicable.[1] The instrument would not only pick up and hold one needle, but was capable of attracting and holding several needles of various sizes and at any place thereon where the jaws of the instrument happened to make contact. It then occurred to me that this phenomenon of magnetization might be influenced by the various changes in heat and moisture to which surgical instruments are subjected. I therefore placed the magnetized instrument in boiling water and let it remain for half an hour; there was no apparent change in its attractive power. Its magnetic power was also tried in water and in the various antiseptic solutions and found to be unimpaired.

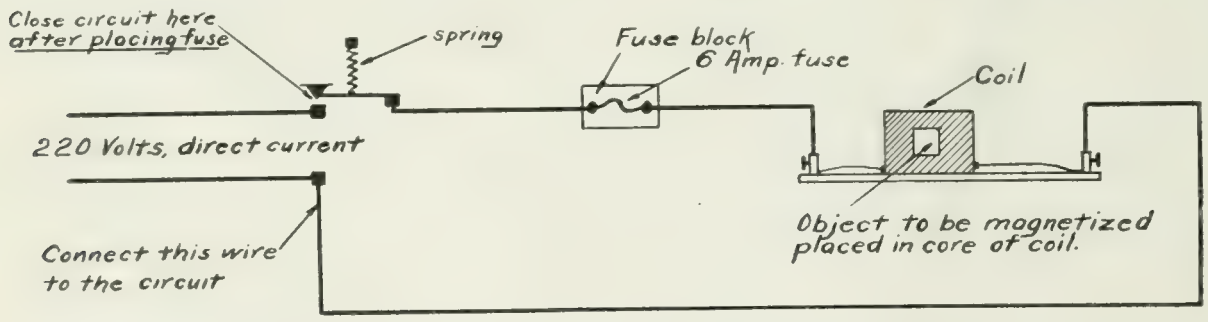


Fig.—Diagram of connections. Directions for magnetizing hard steel articles: Wind a coil with approximately 100 turns of No. 16 double cotton covered copper wire. Make coil about two inches long and the core large enough to fit the object to be magnetized. A snug fit is advised. The current required is 6 ampères, 220 volts (direct current); circuit to be arranged with a 6 ampere fuse. (Stimson.)

Magnetization is not affected by the temperatures of sterilization. The harder the steel the more difficult to magnetize, yet hard steel retains its magnetization longer than soft. Magnetized to saturation hard steel will hold its magnetism permanently, provided it is not subjected to sudden, heavy blows, to intense heat, or to powerful electrical currents. Because of its comparative hardness, the steel of ordinary needle holders, so called spring steel, is susceptible of considerable magnetization and, according to the degree of hardness, will retain magnetism for various periods of time. For magnetization, however, the instrument should be hardened just to that degree where it does not become brittle. For this reason, so called glass hard steel, while susceptible of the highest magnetization, is impracticable for needle holders because

*Read before the Jefferson Hospital Clinical Society, April 17, 1914.
[1]See New York Medical Journal for April 25th, page 837.

of its brittleness. Some ordinary needle holders are sufficiently hard to render them suitable for magnetizing. Instruments now in use which do not possess sufficient hardness can be so treated, and at little expense, that their hardness can be increased to the desired degree. Metal which is alloyed or annealed is not suitable for magnetizing; only the best of steel should be used, therefore, where this process is desired. It is not necessary that the entire instrument be of the same high degree of hardness, as slight brittleness might make it break under sudden, heavy strain; the jaws, however, the only parts requiring magnetic power, can be hardened to a greater degree without impairment of strength.

There are several ways by which an instrument can be magnetized. A simple and easy way is to place it upon the magnet of a running dynamo and let it remain for three or four hours. This method is not very satisfactory, as it does not charge the instrument to its full magnetic capacity, yet to anyone interested in the subject it is an easy way to demonstrate the possibilities of the principle. The best method is to have a needle holder especially made of steel suitable for magnetization; it is then placed in an induction coil and charged. A coil for this purpose should be two inches long and wound with approximately 100 turns of No. 16 double, cotton covered copper wire, the core being made large enough to fit snugly the jaws of a needle holder. The charge is made with a direct current of six ampères at 220 volts, the circuit being connected with a six ampère fuse.

The objection may arise that a magnetized needle holder will not release the needle promptly and hence may draw it out after it is inserted; it can be said, however, that it is almost impossible to have too heavy a charge in an ordinary sized holder, as the surface offered by a needle is so small that it requires little force to break the magnetic bond and free the needle, so that in nearly all surgical work the principle can be used to advantage.

In bringing forth this idea, it is not with the desire to add to the already long list of surgical paraphernalia, but to suggest a way by which an important instrument can be made more valuable to the surgeon.

1801 Cayuga Street.

FACILITATING THE CRILE METHOD OF TRANSFUSION.

An Instrument, and Technic for Its Use.

By Alfred Kahn, M.D.,
New York.

One of the great difficulties, if not the greatest difficulty in making a transfusion by means of the Crile method, is perhaps the cuffing back of the artery over the cannula. Crile threads the artery through the cannula, cuffs it back, and ligates it fast. There is some difficulty in doing this, the artery usually being so small that when it is turned back, it requires the greatest of patience and most careful technic to turn it and ligate. This procedure usually requires several assistants, one to hold the vessel steady, one to hook the vessel and cuff it back, and one to ligate it into position; even then there is always the possibility of the vessel slipping out of position. In order to obviate this, I have invented a

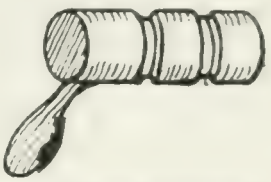


Fig. 1.—The Crile cannula.

little instrument, the cuts of which are herewith shown. Figure 2 shows the instrument, which can be made of any metal, of glass or of wood, or of any material, so long as it follows the contour herein



Fig. 2.—Kahn's instrument or rod for facilitating [illegible]; cross section of the instrument is also shown.

given. The instrument presents, as shown in Fig. 2, the appearance of a very small lead pencil, with a very long point; in other words, it tapers from a dull apex to a base, gradually getting larger (the



Fig. [illegible] Rod approaching lumen of artery.

graduation from apex to base must be long drawn out and very gradual). The reason for this will be appreciated, as we proceed further to illustrate the technic. The instrument is grooved on four sides

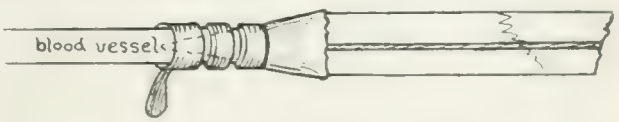


Fig. 3.—Rod introduced into artery.

in four places opposite each other from the apex to the base. Fig. 2, cross section, shows the grooving of the instrument.

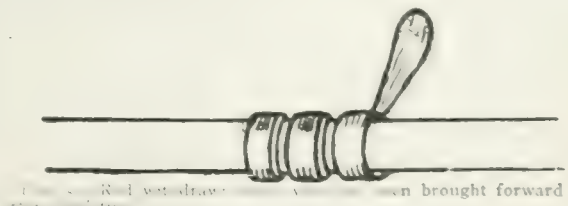


Fig. [illegible] Rod withdrawn [illegible] brought forward over [illegible].

TECHNIC.

The Crile cannula is threaded on the artery, as usual, then this rod is pushed into the lumen of the vessel, threading the vessel on the instrument. The

cannula is then pushed until it catches fast on the rod. This holds cannula and rod fast together, leaving a small amount of artery beyond the cannula—from one eighth to one fourth inch, or more if desired, of the vessel extending beyond the cannula. This being held fast, it is now a very simple matter to pass a hook or small forceps along the grooves in the rod, bite the tip of the artery, and cuff it back over the cannula. If a ligature is tied loosely around this rod, which is about five inches long, it can be brought down over the turned back cuff of artery and ligated over it. This procedure can be done by two people and easily—the rod being fastened into the lumen of the vessel makes the handling of the cannula and the vessel quite a simple matter. The grooving of the rod allows the vessel to be cuffed back with ease, making the transfusion a simple operation. It is now easy to pull your rod out of the vessel's lumen and bring the vein forward over the artery, tying it in place.

34 East Fortieth Street.

Correspondence.

LETTER FROM MEXICO.

Vera Cruz, Mexico, *May* —, *1911.*

No fear of typhoid fever in this campaign.—Typhus may prove to be a problem.—No malaria as yet.—Tuberculosis a scourge of the natives.—Native hospital accommodations in Vera Cruz.—Organization of the Health Department of Vera Cruz by officers of the medical corps of the United States Army.

When the expeditionary forces (reinforced 5th Brigade) sailed from Galveston on April 24th for Vera Cruz, Mexico, under the command of General Funston, the medical department had just cause for feeling a sense of security against the most dreaded of camp diseases, typhoid fever. The majority of the men in this expedition had been in camp at Galveston and Texas City for a period of fourteen months, where not a single case of typhoid had occurred in the entire 2nd Division comprising 11,500 troops, so practical proof was not lacking of the efficiency of vaccination against typhoid. But new conditions were to confront us in Mexico, new diseases were to be combated, diseases in which immunity could not be acquired artificially. Typhus fever, another of the great destroyer of soldiers in camp, was to be our enemy. Nicolle had proved the body louse to be the carrier of typhus, also Anderson and Goldberger had established the fact that Mexican typhus or tarbadillo was the same as Brill's disease. The head louse was partly incriminated as the carrier of Mexican typhus, but the microorganism as the cause as yet remains unknown.[1] Vaccination against typhus will follow closely upon discovery of the cause. At the present time we must content ourselves with isolation of the patient and destruction of the agent of transmission.

Typhus fever is prevalent in Mexico, principally in places on the great central plateau, at elevations greater than 6,000 feet, although cases have been reported from lower places. Over 600 cases of typhus fever were reported in a single month at Mexico City, in 1911. At Vera Cruz no cases of this disease have been recently reported. Vera Cruz being a sea level port, a menace from this disease is not considered a great probability. Yellow fever, smallpox, malaria, cerebrospinal meningitis, and tuberculosis are the diseases most to be feared in this locality. The deaths as reported by the health department of Vera Cruz for the month of March are as follows:

Malaria.	Cerebrospinal meningitis.	Smallpox.	Tuberculosis.
6	6	10	22

With a total death rate of 127 for the population of 40,000.

All our troops have recently been vaccinated against smallpox, and an order issued this morning by the Military Governor makes it compulsory that all residents of the city be vaccinated by native physicians. The statistics show that cerebrospinal meningitis, as in temperate climates, exhibits a higher mortality during the winter months, the month of December showing the greatest number of deaths (20) recorded during the past year. Malaria reaching next to the highest mortality rate, a close second to that of tuberculosis, is most prevalent throughout the rainy season, June to November. This being the dry season, with very few mosquitoes, no cases of malaria have as yet appeared in the army, navy, or marine corps. Some of these troops have been ashore now about four weeks.

Tuberculosis ranking first in the mortality rate of infectious diseases, runs rampant all the year round, causing on an average thirty deaths every month among the native population. Unless a case is detected very early in the incipient stage (before even the bacilli appear in the sputum) and the patient given a change of climate to a greater altitude, there is very little chance for his life. The number of deaths from tuberculosis is unquestionably greater than has been reported by the health department.

In the city of Vera Cruz there are four civil and two military hospitals. The civil hospitals are San Sebastian Hospital and Charity Hospital, supported by the city, with a capacity of 300. At present these have 280 patients. The patients are very poorly cared for by Mexican physicians; they are without trained nurses, and are waited on by uneducated orderlies. Thus the sick are neglected, with poor food and medical supplies of inferior quality. The building is unsanitary. The hospital is partly supported by annual appropriations from the city of 56,000 pesos ($20,000), an inadequate sum. There is a Woman's Hospital, with a bed capacity of 100, supported by subscription; it also receives some support from the city. There are no trained nurses.

The Beneficiencia Español Hospital, on the other hand, is well situated. It is in a modern building, and is supported by subscriptions from Spanish residents. It receives only male patients and has a capacity of sixty beds. The patients are cared for by male nurses, moderately well trained, and are visited by Spanish physicians. It receives charity cases but it also has pay wards. The White Cross Hospital, corresponding to our Red Cross, is the main

[1] This was written evidently before the news of Doctor Plotz's discovery reached the army in Mexico.

organization in Mexico City. It has a capacity of fifty patients. Emergency cases are attended by Mexican physicians; it has some Mexican trained nurses.

With the taking of Vera Cruz by our military forces on April 21st, the responsibility of cleaning up the city, administration of the civil hospitals, and medical supervision of the Port of Vera Cruz, devolved upon the medical officers of our Government. The Department of Health for Vera Cruz has just been organized by the Director of Public Health, Major T. C. Lyster, U. S. Army, assisted by Major Robert E. Noble, medical corps, U. S. Army, assistant director of public health; both of these officers have had extensive experience in sanitation on the Isthmus of Panama under General Gorgas, surgeon general of the Army, and their work will be carried out on the same lines as employed in Panama and at the Canal Zone. The organization of this work will be into three divisions:

1. *Office.* Property records; general supervision.

2. *Division of Sanitation.* General sanitation; house inspection; antimosquito work and all work not specifically assigned to other divisions. Inspection of food, milk, dairies, markets, abattoirs.

3. *Hospital division.* Supervision of civil hospitals and institutions formerly under the supervision of the Department of Charities of Vera Cruz; transportation and care of contagious diseases; fumigation and vaccination; Department of Charities.

No organization worthy of note was inherited from the Mexicans; it was therefore necessary for the director of public health to outline an entirely new organization. The vaccination of the entire population, numbering about 40,000, is now being enforced. Ten Mexican physicians are now being employed for this work. This force will be increased to fifteen or more as soon as an extra supply of vaccine is received. The maintenance of a strict and careful supervision over the health of the civil population is essential properly to protect the health of the troops occupying the town. If other towns or cities should subsequently be occupied by troops, a similar system would have to be instituted in each town or city.

Two military hospitals have been established in the city of Vera Cruz for the care of the sick from the military forces. Field Hospital No. 3, commanded by Major A. W. Williams, Medical Corps of the army, is for the care of the sick and wounded of the army. Brigade Hospital, U. S. Marine Corps, commanded by Lieutenant-commander Dudley Carpenter, Medical Corps, U. S. Navy, is for the care of the sick and wounded from the Marine Corps. These two field hospitals in campaign have a capacity for 216 sick for each hospital, and, although at present occupying buildings in Vera Cruz, and caring for the sick in a way similar to a civil hospital, at the same time they are maintained with their field equipment intact, including tentage, bedding and clothing, accoutrements, instruments, appliances, medicines, and food. There is a personnel of six medical officers and sixty-seven enlisted men of the hospital corps, these organizations having their own transportation, consisting of eight four-mule wagons; thirty-two mules and fifteen horses are maintained mobile. These field hospitals can be loaded on wagons and be on the march in one hour's time. The buildings occupied at present with their patients would be turned into an Evacuation Hospital. An evacuation hospital has an equipment, etc., equal to three field hospitals and can care for three times the number of sick that a field hospital can. At the present time an evacuation hospital is being built at Galveston, Texas, but if the troops should be ordered to Mexico City, it would be necessary to establish an evacuation hospital at Vera Cruz.

Therapeutic Notes.

Treatment of Gastralgia.—Schnirer, in the tenth edition of his *Taschenbuch der Therapie*, after emphasizing the necessity of treating underlying causes of this condition, such as gastritis, cancer of the stomach, chlorosis, central nervous disease, etc., mentions the following combinations as suitable in the treatment of gastralgia in general:

℞ Sodii bicarbonatis,
Sodii bromidi, ...
Sacchari lactis, ... } āā 3iiss (10 grams);
Olei fœniculi, ...gtt. iv.
M. Sig.: One half teaspoonful in water after meals.

II.

℞ Mentholis, ...gr. xv (1 gram);
Alcoholis, ...3vi (20 grams);
Syrupi, ...3v (20 grams);
Aquæ, ...3v (150 grams).
M. Sig.: One tablespoonful every two hours.

III.

℞ Extracti belladonnæ foliorum, } āā gr. v (0.3 gram);
Codeinæ phosphatis, ...
Bismuthi subcarbonatis, ...gr. xlv (3 grams);
Sacchari lactis, ...3i (4 grams).
M. et pone in chartulas No. x.
Sig.: One to two powders three times a day.

IV.

℞ Extracti belladonnæ foliorum,..gr. ⅔ (0.04 gram);
Extracti opii, ...gr. ⅓ (0.05 gram);
Olei theobromatis, ...q. s.
Ft. suppositorium unum.
Sig.: Insert one at beginning of attack and repeat once, if necessary.

Colloidal Sulphur in Chronic Rheumatic Affections.—Albert Robin and L. C. Maillard, in *Bulletin de l'académie de médecine* for November 25, 1913, call attention to the fact that whereas washed and precipitated sulphur is insoluble in water and therefore uncertain of absorption and effect, colloidal sulphur is very readily absorbed from the alimentary tract and at once takes part in those metabolic changes having to do with sulphur containing substances. Introduction of sulphur into the system is thus rendered possible in all conditions associated with imperfect utilization or excessive output of sulphur, e. g., in certain skin affections, in diseases of the cartilages, which contain chondroitin-sulphuric acid, and in disorders of the mucous membranes involving secretion of a large amount of mucus, which contains 1.4 per cent. of sulphur, e. g., in chronic pharyngitis, bronchitis, vaginitis etc. The procedure followed in preparing colloidal sulphur is to pass hydrogen sulphide into a solution of sulphurous acid; flakes of sulphur, temporarily insoluble owing to the acidity of the solution, but not coagulated, form at the bottom of the vessel a deposit which redissolves at once in distilled water

after the acid solution has been poured off. Dialysis of the solution of sulphur thus obtained, to remove the remaining traces of acid, completes the procedure.

The authors refer in particular to the results obtained in two cases of chronic rheumatism. The first showed the possibility, with the sulphur treatment, of cutting short an oncoming chronic rheumatic state following attacks of acute rheumatism in a patient with rheumatic antecedents. This patient was completely relieved, resuming his previous occupation in three months, in spite of several interruptions in the treatment. The second case was one of painful and deforming rheumatic polyarthritis, of three years' standing, the patient being confined to bed and unable to move. After five months' treatment he was able to walk and later regained the use of his upper extremities sufficiently to dress and perform useful work. Other similarly encouraging cases are spoken of.

The solution of colloidal sulphur employed contained 0.2 gram of sulphur to every fifteen c. c. and was given in doses of one teaspoonful before breakfast and supper, gradually increased to one tablespoonful. The only untoward effect of the remedy was slight diarrhea, which appears upon excessive doses or prolonged administration, and passes off promptly when the sulphur is discontinued. The solution may be rendered more palatable with sugar and some aromatic preparation. Sodium salicylate, having no effect on the pain or in preventing recurrence of subacute attacks, may be advantageously replaced, according to the case, with quinine sulphate in the dose of five grains (0.3 gram) twice a day or sodium amidomethane antipyrinsulphonate in the dose of fifteen grains (one gram) four times a day. Wet dressings of lead and laudanum or ten per cent. ammonium chloride solution, systematic massage, and progressive mobilization of the joints are useful adjuncts to the sulphur treatment.

Treatment of Tuberculous Arthritis.—Garrè, in *Revue de chirurgie* for October, 1913, is stated to recommend operative treatment in tuberculosis of the shoulder joint. Whereas the majority of his former patients, treated conservatively with iodoform injections, ultimately were left with complete shoulder ankylosis, twenty-two cases in adults, treated by resection according to Langenbeck's method within the last twelve years, have shown more encouraging results. Although joint stiffness follows in two thirds of the cases, complete ankylosis is rare, and muscular power at the shoulder is preserved. Many of his patients were later found occupied as laborers, domestics, etc., and performing their work very satisfactorily. In adults, resection is the treatment of choice.

In tuberculosis of the knee joint, operative intervention is also to be preferred. In forty-five per cent. of a series of 133 cases treated conservatively, the result was poor, sinuses and pain following and amputation sometimes becoming necessary. Among the surgical procedures available, careful synovectomy in thirteen cases in which the infection had been diagnosticated as purely synovial, was also found wanting. The author prefers resection to synovectomy both in adults and children. The former procedure was carried out—with due care to find and remove periarticular foci in the bones and soft parts—in 268 cases. Of 188 cases traceable a few years later, fourteen had ended fatally—seven through tuberculosis—but of the remaining 174 cases, ninety-three per cent. were definitely cured. This series included both adults and children. While resection in children has been adversely criticised as leading to shortening and ankylosis in a flexed position, Garrè points out that conservative treatment affords no guarantee whatever against shortening, and that the shortening in operated cases only rarely exceeds three to five cm.—three cm. of shortening being negligible, as it can be rendered inconspicuous by raising the heel. Stiffness in the flexed position depends entirely upon the after treatment, and can be obviated by prolonged extension.

Uses of Atropine in the Treatment of Gastric Ulcer.—Mathieu and Girault, in *Quinzaine thérapeutique* for February 10, 1914, are credited with advocating the administration of atropine under the following conditions: 1. In recent ulcer with pyloric spasm as a predominating feature; 2, in ulcers of larger standing with pyloric spasm and excessive secretion; and, 3, in old ulcers with incomplete, organic stenosis of the pylorus. In the first of these varieties, the pylorospasm yields rapidly to rest and small doses of atropine. In the second, the results of atropine administration are especially valuable; after the cessation of an acute attack the necessity for operative intervention may be removed by the use of the drug, in conjunction with careful dieting. The administration of the atropine should be persisted in for some time. In the third group of cases, the drug is useful only where spasm of the pylorus is superadded to the organic stenosis. Operation is definitely indicated under such conditions, but the use of the drug as a preliminary measure will place the patients in a better position to withstand the intervention.

The authors prefer subcutaneous to oral administration, as elimination of the drug owing to vomiting is thereby avoided, and the effects are more prompt and intense. The dosage is 1/200 grain (0.00025 gram) to 1/65 grain (0.001 gram) or even 1/43 grain (0.0015 gram) *per diem*. If the oral route is employed, the following formula may be adopted:

℞ Atropinæ sulphatis, ...gr. 1/6 (0.01 gram);
Aquæ, ...ℳxxiv (1.5 c. c.);
Glycerini, ...ℳxlviii (3 c. c.);
Alcohol. q. s. ad.. .. ..5iiss (10 c. c.).
M. et ft. solutio.

Fifty drops of this solution contain 1/65 grain (0.001 gram) of atropine. Alkalies, especially waters containing alkaline phosphates, may be simultaneously given with advantage. The atropine rarely fails to relieve pain within a few days, and morphine should be used in the rebellious cases only. Where the stomach contains an excessive amount of fluid at the start, it should first be evacuated with the tube. A milk diet was always ordered in the authors' cases. No untoward results were ever noted from the use of atropine with the exception of temporary slight visual disturbances and dizziness in a few instances. The drug was used also in colic due to lead or other causes.

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EDITORS

CHARLES E. DE M. SAJOUS, M.D., LL.D.
CLAUDE L. WHEELER, A.B., M.D.

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NEW YORK, SATURDAY, JUNE [illegible], 1914

EARLY'S CASE AGAIN.

The sad case of the former American soldier, John R. Early, who contracted leprosy while serving in the Philippines, is one which will not down. Hounded, persecuted, driven from pillar to post, isolated in various dreary detention camps, he escaped on the seventeenth of May from the government colony at Diamond Head, near Tacoma, and after a brief period of freedom, is now reported to have been rearrested in a hotel in Washington. Early has been unfortunate even in his friends. Through the mistaken efforts of a distinguished dermatologist who questioned the diagnosis of the government authorities, he was temporarily released from quarantine and a pension which he had been receiving was withdrawn. Later, at the Second International Congress on Leprosy, in 1909, leprosy bacilli were demonstrated by G. Armauer Hausen, president of the congress and discoverer of the lepra bacillus, in a section of tissue taken from Early's skin, thus removing any possible doubt as to the true diagnosis and confirming the report of the government's experts.

The ignorant and unfeeling manner in which patients with leprosy are usually treated by municipal health authorities and the public, results in the greater number of them remaining in hiding. These clandestine cases, which are more numerous than is generally believed, greatly increase whatever danger there is of infection. Lepers should receive humane treatment in sanatoriums where they may be voluntarily segregated. The excessive traditional and almost superstitious dread of leprosy, a disease far less fatal and not more infectious than tuberculosis or syphilis, is doubtless due to a curious survival of the influence of the ritualistic practices of the ancient Hebrews, as recorded in the books of *Leviticus* and *Deuteronomy* of the Old Testament:

> And the priest shall look on the plague in the skin of the flesh; and when the hair in the plague is turned white, and the plague in sight be deeper than the skin of his flesh, it is a plague of leprosy; and the priest shall look on him, and pronounce him unclean.
>
> And the leper in whom the plague is, his clothes shall be rent, and his head bare, and he shall put a covering upon his upper lip, and shall cry, Unclean, unclean.
>
> All the days wherein the plague shall be in him he shall be defiled; he is unclean; he shall dwell alone; without the camp shall his habitation be.

In our treatment of lepers in the United States we have not advanced much beyond these cruel and crude notions of an unscientific era two thousand years ago. There is great need in this country for at least one well equipped Federal leprosarium, where the patients can be kindly treated and the disease intelligently studied.

THE FLANNEL BINDER AS A PROPHYLACTIC AT VERA CRUZ.

The report that dysentery and malaria have developed among the troops and sailors at Vera Cruz, notwithstanding the efforts at prophylaxis of the able medical corps with which both the army and navy are provided, will doubtless prove less serious than now appears. The rapidity with which the patients can be transported to nontropical countries and the effective remedies available will also serve to arrest most cases. It is to be hoped, however, that the Government will soon realize that President Wilson's ideals concerning Mexican affairs may mean a great sacrifice of American lives if our officers and men are exposed to the torrid heat which overwhelms Vera Cruz during July, August, and September.

Pending so fortunate an issue as the prompt return of our fleet and army, prophylactic measures are in order. Among those which may be mentioned is one which, though seldom if at all mentioned in English or American literature, has nevertheless been found of great value by French army surgeons in tropical countries for the prevention of inflammatory intestinal disorders, diarrhea and bacillary dysentery in particular. This consists in the *constant* use of a flannel binder around the abdomen.

Though it is somewhat annoying at first the men soon get used to it.

Modern researches have afforded a clue to the manner in which the flannel binder—six to eight inches in width—produces its remarkable effects. Bier's hyperemia, as is well known, proves beneficial by causing vascular dilatation entailing in turn an increase of bactericidal and antitoxic activity. Now the application of hot air to the abdomen has been found to produce the same effect experimentally, both the skin and deep abdominal viscera having been found to be the seat of a pronounced hyperemia. The flannel bandage, therefore, by promoting and sustaining a corresponding condition in the abdominal viscera raises their bactericidal and antitoxic activity considerably above normal limits and thus prevents the development of pathogenic organisms to which various intestinal disorders are due.

SMALL MEDICAL SCHOOLS.

Sir William Osler once expressed the opinion, based on his vast experience as a clinical teacher, that the ideal medical school was one with a graduating class not exceeding twenty-five members—which means a school of about one hundred students. Supplied with sufficient clinical material and an adequate corps of instructors, individual instruction becomes possible and the student secures every opportunity to receive the best medical education that four years can afford. Strikingly confirmatory of the strength of Osler's opinion in connection herewith are the results recently published by the Council of Education of the American Medical Association, from a comparative study of the relative merits of large and small medical schools, based on the reports of State board examiners throughout the country. It showed, as the reporter states (*Journal A. M. A.*, May 23rd), "that the graduation of large classes by a medical college does not prove excellence of teaching, since several colleges having 100 or more examined have very high failure percentages, and this holds true even for the graduates of 1913. In fact, the larger the college from the point of view of the number of students and graduates, the more serious is inferior teaching ability, indicated by a high failure percentage. In fairness to the medical student, and in the interests of the public, such schools should greatly strengthen their teaching facilities or reduce the size of their classes." That this attitude is fully warranted is emphasized by a comparative examination of the catalogues of some of the large and small schools. In spite of the fact that large schools may have from three to six hundred students, the teaching staffs of most of them are hardly larger than those of schools containing one hundred students or less.

The hospital facilities offered by some of the larger colleges, compared to the smaller, show a corresponding discrepancy in the average number of cases available for bedside instruction strictly under the management of the faculty. While some of the larger schools average hardly one patient to each senior student, some smaller schools show three times that number of *bona fide* patients. Any clinical teacher of experience knows that this represents the minimum with which satisfactory bedside instruction can be given, provided a sufficient number of instructors are available.

A large increase in the number of teachers is imperatively demanded in the majority of our large schools. If this improvement cannot, for financial reasons, be carried out, such schools should, as advised by the council, reduce the size of the classes admitted, as did Rush Medical College recently—a laudable example—in order to bring them well within the field of their teaching facilities. It has long been our opinion that the smaller schools should be encouraged when they show the proper spirit in the form of serious effort to adjust themselves to the needs of high grade teaching, including their showing before State boards. Table C on page 1,648 of the above mentioned number of the association journal shows clearly, through the results attained by graduates of the smaller schools in 1913, the marked progress that several of these institutions have made and their actual educational efficiency.

THE DANGERS OF THE SUMMER OUTING.

The summer traveler, for a day, a week, or a month, too frequently returns to his home the worse for his outing. A change is good, but it depends on the behavior of him who makes the change, and on the surroundings in which he takes his vacation. There is nothing to prevent the individual from doing absurd things during his outing. It is for him a time of breaking back into the primitive life; but the trouble is, he has long since outgrown and forgotten how to live that life, just as he has not yet learned the art of living the civilized existence with sanitary perfection. Because he spends most of his days indoors, he pushes out into the broiling July sun and tries to revel in it until he is taught a lesson. Fancying himself a halfstarved savage, he eats twice as much as he needs or can manage, partly because he is "paying for it," partly because he is of the mistaken notion that the more he eats the better.

Nature promptly rebels and turns a fee over to the resort physician. The vacationist goes bathing, no matter what the temperature of the water or his own bodily condition, stays in the regulation time, and shivers in his overcoat for the rest of the day. He enters at once into all manner of games and comes out with sore muscles and strained joints.

But there are inherent dangers at the summer resort, from which even the sensible, temperate traveler may derive harm. First of these is typhoid fever. There can be little question that most of the typhoid fever of our cities is imported from the country. The rural districts are far behind in their regard for sanitation. There is too much ignorance, individual and collective, and the source of information and authority on the subject—the local health officer—is shunned or hated, rather than respected and called in consultation. Unless it is under supervision for dairy purposes, the milk supply may be far from carefully managed, the well water may be contaminated, and even the food may be inoculated by flies in a badly screened kitchen. Then there is the danger from decaying food, for the fresh food materials from country and shore often go to the city, and their place is taken by stale meats, fish, and ice cream from the same city. The amount of ptomaine poisoning at summer resorts is astonishing. Malaria is often contracted in camps, and even in more established places. There are to be added by way of good measure to the experiences of the vacationist, the bites of black flies, the sting of gnats, the boring of wood ticks, the effects of poison ivy, being shot for a deer, and the like, but these are hardly preventable and are all a part of a summer holiday.

The summer traveler cannot be prevented from doing foolish or foolhardy things, but the country or shore place, with a hungering after the dollar of the visitor, can be prevented from injuring its victim and cutting its own throat, by studying personal and collective hygiene and sanitation. The local physician will benefit also in the long run, through greater influx of patrons, if he will aid in the cleaning up of his parish. There is coming to be more and more competition in resorts and it is only the safer that will survive and flourish.

THE COST AND SOURCES OF RADIUM.

There appears to be a general feeling that the price of radium is being artificially kept up, but evidence that such is the case is difficult to find. At present, radium is mainly derived either from pitchblende mines about Joachimsthal, in Cornwall, and elsewhere, or in lesser amount from some of the rich ores, such as dolomite. The ores for the most part are very low grade, containing quantities up to three per cent. of uranium oxide, and, paradox though it be, it is the high price of radium only that makes an increase of the supply possible.

It is to be recalled that radium is almost universally present, but it no more pays to extract it at a low price than it does to derive gold from sea water which contains it in appreciable amounts. From time to time information is received of the discovery of fairly rich deposits, but it is the common experience that when an offer is made to take over the entire output from such deposits, none of the radium ever becomes available. Saxony, Russia, North America, and Australia are said to contain sources of radium and although it would be premature to deny that these exist, there is certainly as yet no evidence of its being produced in such quantities as to affect the markets. As regards radium ores other than pitchblende, a plant has been erected in our country for the extraction of radium from carnotite, an ochre pigment, and there seems good reason to believe that a workable source of radium exists in the double phosphate of uranium and calcium, autunite, that is found in Portugal. The lava from Vesuvius, also, is steadily increasing in richness with every eruption.

There seems to be little doubt that the factor of monopoly enters into the price of radium, and were it possible to substitute for radium, mesothorium or the Roëntgen rays in medical work, the price would fall. Another obvious factor is undoubtedly the labor of extraction, which becomes very great when the lower grade ores are used. The estimates as to the quantity of radium available at the present time are mere guesses, but it is generally believed that since its discovery not more than a little over an ounce has ever been put into circulation. The reserves held by manufacturers are not believed to be considerable, but, obviously, on this point there is no information at hand. Though the price of radium has fluctuated since its discovery and is much higher at present than at first, with the careful and thorough search that has been carried out for the sources of supply, it seems reasonable to accept the statement of the dealers that the price is being fixed by the law of supply and demand. It should be remembered that the erection of a plant for dealing with low grade ore requires a very large financial outlay. This is being provided in various parts of the world and the supply is certainly on the increase, but the conditions of manufacture make it doubtful if the present high price will ever be considerably reduced, as, so far as the lower grade sources are concerned, it is the cost of production rather than monopoly value that is the controlling power.

THE UHLENHUTH REACTION IN MEDICO-LEGAL PRACTICE.

A. V. Grigorjeff (*Roussky Vratch*, August 24, 1913) has introduced very important modifications in the well known biological test for blood. These modifications not only simplify the Uhlenhuth method, placing it within easy performance by a physician without laboratory facilities, but render the test more accurate. The first modification consists in preserving the immune serum with an equal amount of thirty per cent. alcohol containing the ingredients which go to make up Locke's solution. The serum from an immunized animal preserved with an alcoholic Locke solution was found at the expiration of one year to give very satisfactory results. The second modification consists in dissolving the suspected blood spots in a 0.85 per cent. solution of sodium chloride in a ten or twenty per cent. alcoholic menstruum. This gives a perfectly clear and stable solution. For the immunization of animals the author suggests blood serum preserved with a twenty per cent. alcoholic solution of the Locke salts.

News Items.

Change of Address.—Dr. William H. Stratford, to 157 West Seventy-ninth Street.

Yale Medical School Receives Appropriation from the General Education Board.—The medical department of Yale University has received from the general education board which administers the John D. Rockefeller fund, the sum of $500,000, which is to be used by the school to obtain full educational control of the New Haven Hospital and to install full time clinical teaching in the medical and surgical departments.

Annual Banquet of Medical Alumni of Temple University.—Dr. Wendell Reber acted as toastmaster at the annual banquet of the Alumni Association of the Medical Department of Temple University, held in Philadelphia on Wednesday evening, June 3d. Among the speakers were Dr. W. E. Robertson, Dr. Charles E. de M. Sajous, Dr. F. C. Hammond, Dr. John R. Minehart, Dr. R. T. Devereux, and Dr. Carl F. Koenig.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, June 15th, Philadelphia Clinical Association, Medical Society of the Woman's Hospital; Tuesday, June 16th, Philadelphia Laryngological Society, West Branch of the County Medical Society; Wednesday, June 17th, County Medical Society (business meeting); Thursday, June 18th, Northeast Branch of the County Medical Society.

Annual Commencement of Yale Medical School.—At the coming commencement of Yale University, June 15th to 17th, the Yale Medical School will celebrate the 100th anniversary of the first conferring of degrees. The occasion will be observed by special exercises, to be held June 15th, at which addresses will be presented by Professor William H. Howell, of Johns Hopkins University, and Dr. Walter R. Steiner, of Hartford. An excellent musical program will be furnished. On Commencement Day a number of honorary degrees will be conferred to commemorate the occasion. A *Life of Nathan Smith*, one of the founders of the school, will be issued from the Yale University Press at about commencement time, and a memorial volume of medical papers, prepared under the editorship of Dr. Horst Oertel, and containing contributions from Dr. Graham Lusk, Dr. E. R. Baldwin, Dr. John Hartwell, Dr. C. W. Field, Dr. W. W. Herrick, Dr. Charles F. Craig, Dr. Samuel W. Williston, and Dr. Horst Oertel, will appear as a special number of the *Archives of Internal Medicine*. It is hoped that the university will be able to announce at this time the consummation of the plan for affiliation with the New Haven Hospital, and gifts to the endowment of the school.

American Gynecological Society.—At the thirty-ninth annual meeting of this society, held in Boston, Tuesday, Wednesday, and Thursday, May 19th, 20th, and 21st, under the presidency of Dr. J. Whitridge Williams, of Baltimore, the following officers were elected: President, Dr. Thomas J. Watkins, of Chicago; first vice-president, Dr. Frank F. Simpson, of Pittsburgh; second vice-president, Dr. Howard C. Taylor, of New York; secretary, Dr. Leroy Broun, of New York (reelected); treasurer, Dr. J. Wesley Bovée of Washington, D. C.

American Pediatric Society.—At the twenty-sixth annual meeting of this society, held in New London, Conn., on Monday, Tuesday, and Wednesday, May 25th, 26th, and 27th, under the presidency of Dr. Samuel McC. Hamill, of Philadelphia, the following officers were elected: Dr. George N. Acker, of Washington, D. C., president; Dr. Henry L. Coit, of Newark, N. J., vice-president; Dr. Samuel S. Adams, of Washington, D. C., secretary (reelected); treasurer, Dr. Charles H. Dunn, of Boston (reelected). Next year's meeting will be in Cape May, N. J., May 25th to 27th.

American Gastroenterological Association. — The seventeenth annual meeting of this association will be held at Atlantic City, N. J., on Monday and Tuesday, June 22d and 23d, with headquarters at the Hotel Chalfonte. The officers of the association are: President, Dr. Jacob Kaufmann, of New York; first vice-president, Dr. Joseph C. Bloodgood, of Baltimore; second vice-president, Dr. William G. Morgan, of Washington, D. C.; secretary and treasurer, Dr. Franklin W. White, of Boston; members of the council, Dr. C. D. Aaron, of Detroit, Dr. J. S. Myer, of St. Louis, and Dr. L. Kast, of New York; Committee on Admission and Ethics, Dr. A. L. Benedict, of Buffalo, Dr. J. A. Lichty, of Pittsburgh, and Dr. Julius Friedenwald, of Baltimore.

Medical Society of New Jersey.—The 148th annual meeting of this society will be held at the New Monmouth Hotel, Spring Lake, N. J., on Monday, Tuesday, and Wednesday, June 29th and 30th, and July 1st, under the presidency of Dr. Enoch Hollingshead, of Jersey City. The oration in medicine will be delivered by Dr. Lewellys F. Barker, of Baltimore, and the oration in surgery by Dr. John B. Deaver, of Philadelphia. The Prize Essay Award for the best essay on the Reduction of Infant Mortality; How Can It Be Best Accomplished? will be made on Tuesday afternoon. Seven essays have been received The officers of the society are: President, Dr. Enoch Hollingshead, of Pemberton; first vice-president, Dr. Frank D. Gray, of Jersey City; second vice-president, Dr. William J. Chandler, of South Orange; third vice-president, Dr. Philip Marvel, of Atlantic City; corresponding secretary, Dr. Harry A. Stout, of Wenonah; recording secretary, Dr. Thomas N. Gray, of East Orange; treasurer, Dr. Archibald Mercer, of Newark.

Personal.—Dr. G. Frank Lydston, of Chicago, had conferred upon him the degree of Doctor of Civil Law by the Hamilton College of Law, of Chicago, at its annual convocation held on Wednesday, June 3d.

Dr. Frank E. Haskins, of Boston, has been appointed secretary to the medical and dental faculties of Tufts College, succeeding Dr. Frederick M. Briggs, who acted in this capacity since 1905, and whose resignation takes effect on September 1st. Doctor Briggs will be secretary emeritus of the two institutions and has been elected professor of surgery in the medical school.

Dr. Jacques Loeb, of the Rockefeller Institute for Medical Research, has been elected a corresponding member of the Paris Academy of Sciences, in the section of anatomy and zoology.

Dr. Robert W. Lovett has been appointed professor of orthopedics in the Harvard Medical School. He was formerly assistant professor.

Dr. H. P. Walcott, of Boston, retired on Tuesday, May 19th, as chairman of the Massachusetts State Board of Health, after thirty-three years' service on that board. He received a testimonial from the medical profession in the form of an address signed by over two thousand physicians.

Dr. A. R. Moulton, senior physician at the Philadelphia Hospital for the Insane since 1891, has resigned on account of ill health.

Dr. H. B. Anderson has been elected president of the Toronto Academy of Medicine.

American Orthopedic Association.—The twenty-eighth annual meeting of this association will be held in Philadelphia on Thursday, Friday, and Saturday, June 18th, 19th, and 20th, under the presidency of Dr. Gwilym G. Davis, of Philadelphia. The association will hold a Clinical Day at the Hospital of the University of Pennsylvania on Wednesday, June 17th. An interesting program of operations, exhibitions, and demonstrations has been arranged, which will be presented in the D. Hayes Agnew Surgical Amphitheatre and the DeForest Willard Orthopedic Department of the hospital. Dr. Joseph M. Spellissy will give a demonstration in the Photoanthropometric Department, in the x ray sun parlor, and in the gymnasium of the university Dr. R. Tait McKenzie will deliver an address on the Place of Corrective Exercises in the Physical Education of Students. The use of the swimming pool and gymnasium has been extended to the visitors by Doctor McKenzie.

Jefferson Medical College Alumni Association.—The annual meeting of this association, which was held in Philadelphia on Thursday, June 7th, under the presidency of Dr. Charles S. Magnum, professor of anatomy in the University of North Carolina, was brought to a close by the annual banquet, which was held in the Bellevue-Stratford Hotel, Doctor Magnum presiding. The oldest living alumnus present was Dr. J. S. Weaver, surgeon general of the National Guard of Pennsylvania, who represented the class of '67. Toasts were responded to by Thomas Newhall, representing the trustees of the college; Professor John H. Gibbon, of the faculty, and Dr. Calvin S. Smith, of the alumni. The dinner was brought to a close by the installation of the newly elected president of the association, Dr. Francis T. Stewart, professor of surgery at Jefferson Medical College. Other officers were elected as follows: First vice-president, Dr. J. Coles Brick; second vice-president, Dr. John H. Gibbon, professor of clinical surgery, Jefferson Medical College; third vice-president, Dr. E. Q. Thorton; fourth vice-president, Dr. P. Brooke Bland; corresponding secretary, Dr. Elmer H. Funke; recording secretary, Dr. Walter S. Lucas; treasurer, Dr. Warren B. Davis.

Alumni of the Long Island College Hospital.—At the annual meeting of this association at the Polhemus Memorial Clinic on the evening of June 9th, a striking announcement was made concerning the reorganization of the institution. After the principal address by Dr. John Osborn Polak, professor of obstetrics and gynecology, it was announced that a fifth year medical course had been adopted and the curriculum entirely changed to meet modern demands. Students will be accepted from the high school upon possession of a full medical student's certificate, and will enter the preliminary year for instruction in chemistry, physics, biology, French or German, physiology, and embryology. The freshmen and sophomore years will be devoted exclusively to the laboratory branches, and the various laboratories have been equipped with the latest and best apparatus. The junior year will include clinical work in medicine and surgery and daily dispensary work, while the fifth year will be devoted entirely to bedside work. Every clinical branch will have a full quota of resident full time instructors.

Long Island College Hospital has at this time 300 beds and there is in course of construction a large wing which will give the institution 450 beds; making it one of the largest hospitals in New York. The clinical material in the hospital will be available for the students of the medical school, and the close connection between the hospital and the college gives the students unsurpassed opportunities for bedside instruction. There has also been a considerable change in the faculty, and this reorganization, together with the addition of several full time instructors, will give the institution a teaching staff of decided strength. The change in the faculty will be: Archibald Murray, M. D., professor of pathology; William Lintz, M. D., professor of bacteriology; John C. Cardwell, M. D., professor of physiology and pharmacology; Matthew Steele, B. S., M. S., Ph. D., professor of chemistry; William Francis Campbell, A. B., M. D., professor of surgery; William B. Brinsmade, A. B., M. D., professor of clinical surgery; Joshua M. Van Cott, M. D., professor of clinical medicine; E. H. Bartlett, M. D., professor of pediatrics.

The chair of anatomy, histology, and embryology has not yet been filled. Thomas H. Evans, M. D., will be the full time assistant professor in this department.

Annual Meeting of the American Medical Association.—The sixty-fifth annual meeting of the American Medical Association will be held in Atlantic City, N. J., June 22 to 26, 1914. The House of Delegates will convene at 10 a. m., Monday, June 22d, and the general meeting, which constitutes the formal opening of the scientific assembly of the association, will be held on Tuesday morning, June 23d, at 10:30 o'clock, in Apollo Theatre. The meeting will be called to order by Dr. John A. Witherspoon, of Nashville, president of the association, and the address of welcome will be delivered by Dr. Enoch Hollingshead, of Pemberton, president of the Medical Society of New Jersey, which will be followed by the introduction and installation of President-elect Victor C. Vaughan, of Ann Arbor, Mich. The various scientific sections, fifteen in number, will meet on Tuesday afternoon, at 2 o'clock, and subsequently, according to their programs, on Wednesday and Thursday, June 24th and 25th, and in some cases on Friday, June 26th. The Bureau of Registration will be in the Exposition Building, at Kentucky Avenue and the Boardwalk, where there will be a branch postoffice, to which the letters of members may be addressed. The registration department will be open from 8:30 a. m. to 5:30 p. m. on Monday, Tuesday, Wednesday, and Thursday, and on Friday from 9 to 10 a. m.

The Committee on Transportation and Place of Session announces special tourist rates for round trips to Atlantic City, and suggests that members of the association consult the local ticket agent in their home towns for full information regarding rates, time limits, stop over privileges, etc. Dr. William Edgar Darnall, 1704 Pacific Avenue, Atlantic City, is chairman of the Local Committee on Arrangements; Dr. E. C. Chew is secretary, and Dr. Henry T. Harvey is treasurer. An excellent series of entertainments have been arranged for the visiting physicians and their friends, consisting of banquets, smokers, receptions, vaudeville entertainments, medical alumni and class reunions, musicales, etc. The most important social function of the meeting will be a ball in honor of the president in the Music Room of the Steel Pier, on Wednesday evening. An interesting feature will be the commercial exhibit, consisting of books, instruments, surgical appliances, foods, drugs, etc., which will have quarters in the Atlantic City Exposition Building. Dr. Eduard Guion, of Atlantic City, is local chairman, and Mr. W. C. Braun, of Chicago, is superintendent of exhibits.

Resolutions on the Death of Doctor Gruening.—The Medical Board of Mt. Sinai Hospital, having learned with deep regret of the decease on May 30, 1914, of their colleague, Dr. Emil Gruening, met in special session at the hospital on June 1st and passed the following resolutions:

Whereas, The death of Dr. Emil Gruening [illegible] among us a distinguished and [illegible] years gave his best efforts to the hospital.

Resolved, That the Medical Board of Mt. Sinai Hospital desires to express its sincere appreciation of the high professional attainments of Doctor Gruening, its loss of his wise counsel and honored friendship, and its profound sympathy with his bereaved family.

Resolved, That in the death of Doctor Gruening, opthalmology and otology have lost the services of a brilliant practitioner who was at all times a conscientious student, an ornament to his profession, and a colleague through whose scholarly contributions medical science had been advanced and medical literature notably enriched.

Resolved, That his unusual attainments in other fields than those of his chosen specialties, and a natural courtesy and grace of manner, lent particular charm to association with him.

Resolved, That these resolutions be spread upon the minutes of the Medical Board of Mt. Sinai Hospital and that a copy of the same be transmitted to the family of Doctor Gruening.

For the Board:

[illegible]

Frederick Whiting, M.D.

At a special meeting of the Board of Surgeons of the New York Eye and Ear Infirmary, held on Monday, June 1, 1914, the following resolution was adopted:

The Board of Surgeons of the New York Eye and Ear Infirmary record with profound sorrow the death of their colleague, Dr. Emil Gruening, who had been a member of the board for nearly thirty-five years, and at the time of his death was one of the consulting [illegible]

[illegible] and his loss will be felt not only by the members of this board, [illegible] desire to extend to his family their heartfelt sympathy.

Edward B. Dench, M.D.,
Walter Eyre Lambert, M.D.,

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

May 4, 1914.

Filling and Emptying of the Heart in Work and Rest.—G. F. Nicolai and N. Zuntz have studied these problems by means of an ingenious adaptation of a specially constructed treadmill and an x ray apparatus so arranged as to permit of the photography of the heart at different stages before, during, and after work. It may be accepted as certain that all changes in the size of the heart which take place suddenly must rest upon alterations in the blood content of its cavities. In the normal condition of rest or ordinary activity the heart never completely empties itself. During work the size of the heart is slightly increased owing to an increase in the amount of blood contained in its cavities. This enlargement occurs very promptly after the beginning of exercise and is most probably due to the action of the skeletal muscles and an increased aspiratory action of the deepened and accelerated respiratory movements. Such an increase in the size of the heart is not an indication of any insufficiency for it constantly occurs in perfectly normal individuals. Within a few seconds after the cessation of work the heart decreases in size to a point below its normal during rest. This is the result of a more complete emptying of the ventricles after exercise than occurs under average conditions. The action of the heart can neither be so accelerated during work, nor so slowed after it, that the heart will maintain its normal size. Although the actual changes in the measurements of the shadows of the heart under the conditions of the studies were relatively slight, if the changes in the heart volume are calculated from these they will be seen to be quite large. Thus, the diastolic content before work was found in one case to be 280 c. c., during work it rose to 310 c. c., and after work it fell to 220 c. c.

Proteolytic Enzyme in the Serum in Health and Disease.—Paul Saxl has devised a method by which the presence of such an enzyme in the serum may be tested with comparative accuracy. The essence of the method lies in the fact that the enzyme is allowed sufficient time to act, the experiment lasting for many hours up to several days if necessary. All of the serums which he examined showed considerable proteolytic activity toward Witte's peptone, although the serums were derived from healthy persons and from persons representing a wide variety of conditions including cancer, anemia, late syphilis, and pregnancy.

Animal Experiments with Tuberculomucin.—Friedrich Weleminsky found that both human and bovine tubercle bacilli artificially cultivated for a number of years acquired the power of developing considerable mucin in the colonies. Such bacilli when made into tuberculin possessed marked prophylactic and curative powers over tuberculosis in animals and were also only slightly toxic. By separating the mucin in a relatively pure state, he found that the toxic property resided almost wholly in the bacterial residue, while the tuberculomucin still retained the greater part of the curative property. He makes no suggestions as to the utility of this preparation for man as he has not yet studied it in this respect with regard to dose and toxicity.

Demonstration of Ferments and Antiferments.—L. Brieger and Schwalm use Loeffler plates dyed with safranin for the better demonstration of the presence of antitryptic ferment in the blood serum. By this means it is possible to detect very shallow umbilications on the plates, such as would be overlooked in plain plates. In these plates the action of trypsin is not only shown by the umbilication, but there is also a decolorization of the surface. The plates are prepared by adding five drops of a ten per cent. solution of the dye to eighty c. c. of fresh ox serum and twenty c. c. of a two per cent. grape sugar bouillon. The determination of the antitrypsin content of the serum to be tested proceeds as follows: On a hollow glass slide one platinum loop of serum is mixed with one, two, three, four etc., loops of a trypsin solution and these dilutions are placed upon the plate. That dilution which causes discoloration is taken as the index of the amount of antitryptic ferment present. The method, therefore, becomes one of considerable accuracy from a quantitative standpoint and yet is easy to carry out. It is worthy of mention that the authors have found that saprophytic organisms are capable of causing similar decolorization of the plates, but so far as they have observed, no pathogenic organism has this power.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

May 7, 1914.

Resistance of Local Collections of Spirochetes.—Wilhelm Wechselmann and George Arnheim cite three cases reported by Fischl in which combined therapy failed to destroy spirochetes in local indurations, and take exception to the findings on the ground of improper therapy. They report seven similar cases in which they were able to destroy completely all of the organisms in such local collections by the early and thorough administration of salvarsan. The complete serilization was proved by repeated negative Wassermann reactions and by negative results from the inoculation of rabbits with material obtained from the sites of accumulation. They believe that the early and intensive treatment with salvarsan will yield better results in such cases than can be hoped for from treatment undertaken later after an initial insufficient course with either salvarsan alone, or with the combined use of salvarsan and mercury.

Fatal Acute Arsenic Poisoning from Salvarsan in a Nonsyphilitic.—F. Lube gives an account of the case of a woman aged fifty-four years, who received only 0.8 gram of salvarsan in seven days without any reaction until seven days after the last injection. She then developed the typical abdominal symptoms of poisoning from inorganic arsenic and died forty-eight hours later in collapse with intestinal symptoms and involvement of the liver. The necropsy showed typical arsenic lesions in the intestine, necrotic and hemorrhagic diptheritic enteritis; fatty degeneration of the liver; and a perforation of the stomach. Chemical analy-

sis showed 1.9 mg. of arsenic in the brain, 4.8 mg. in the liver, and 8.44 mg. in the kidneys. This is the only case of its kind to have been reported, so far as the author can discover. Lube warns against the possible dangers of the misuse of salvarsan, particularly in cases free from syphilis.

Influence of Calcium Salts on Transudates and Exudates.—Richard Levy reviews the previous work on this subject and presents a series of carefully conducted experiments by himself. He finds that it is possible materially to reduce the severity and duration of conjunctivitis induced in rabbits by mustard oil by previously treating them with intravenous injections of calcium chloride. On the other hand, the administration of calcium chloride not only fails to reduce the quantity of pleural transudate or exudate caused by several agents, but actually increases both the frequency with which it may be induced and the quantity of fluid. He concludes, therefore, that its clinical use in such conditions is both irrational and harmful.

On Dial-Ciba.—W. Zuelchaur has tested this new hypnotic in a wide variety of conditions encountered in mental cases and finds that it has several advantages over the older hypnotics. It can be used in smaller doses—from one tenth to two tenths gram usually being sufficient to produce many hours of normal sleep. In only one or two severe cases of insomnia was more than this dose required, and only once did four tenths gram have to be used. It is of considerable value also in quieting disturbed patients during the day, in which cases the smallest dose was given two or three times It has the great disadvantage of quickly establishing a tolerance so that the dose has to be raised. The substance is chemically, diallyl barbituric acid. No undesirable or harmful side actions have been observed.

Uric Acid of the Blood.—Ernst Steinitz has slightly modified the method recently devised by Folin and Denis for the quantitative estimation of uric acid in the blood by simplifying the procedure for the removal of albumin. He has also found it possible to obtain good results from so little as ten c. c. of blood or serum. He conducted estimations on more than fifty patients and finds that normal blood contains between 0.02 and 0.04 per cent.; the blood in true gout between 0.04 and 0.08 per cent.; and 0.04 to 0.06 per cent. in atypical gout. A purin free diet does not reduce the endogenous uric acid materially in a short time, but if long continued causes decided reduction. Atophan in large doses causes a marked fall in the uric acid, but this soon returns to its previous level.

Implantation of Living Hairs.—Franz F. Krusius clips the hair over a small area on the scalp, in the axilla, or on the pubes to a length of about four cm., sterilizes the region with benzine, and removes single hairs with a suitable trephine, taking the skin and hair glands together in a piece of tissue about one and one half mm. in diameter. Then by a specially designed instrument each hair is separately inserted into the tissue of the eyelid so that its base lies completely embedded and its free end projects in the normal manner. He has obtained excellent results by his method. Not more than twenty transplantations should be made at one sitting. He says that these transplanted hairs tend to grow and that they must be kept trimmed to the desired length.

Suggestion in Freudian Psychoanalysis.—Engelen indulges in severe ridicule of the Freudian theories of the causation of hysteria and allied conditions. He gives a rather lengthy and detailed analysis of the true workings of the method as a means of cure of the states for which it is used, and shows that it effects a cure solely through suggestion. He lays much stress upon the mystery which the Freudians preserve and upon the expense to the patient, and the great length of time devoted to a single analysis, contending that all of these factors go far toward making the method a success with the suggestible victims of neuroses.

DERMATOLOGISCHE WOCHENSCHRIFT

Modern Methods of Treating Lupus.—W. Schoenfeld says that strong solutions of copper work well, but no better and no worse than pyrogallic acid and are distinctly more painful, while weak solutions are generally inferior to pyrogallic acid. The local effect of both seems to be that of a caustic. The principal benefit of treatment with both gold and salvarsan seems to be that they render the tuberculous tissues more amenable to the action of tuberculin. His results would indicate that these methods are little, if any better, than our older ones, which are granted to be faulty.

Is Wassermann's Test of Positive Value?—J. Nicolas and J. Gate raise this question as a result of their examinations of forty syphilitic, and seventy-one nonsyphilitic, individuals. In the syphilitic cases they obtained a positive reaction in sixty per cent. during the period of chancre, ninety per cent. in the secondary stage, eighty per cent. in the tertiary, and thirty per cent. in parasyphilitic affections. In the nonsyphilitic they obtained a positive reaction in thirty-nine per cent. Hence, although the reaction is more constant in syphilitics than in nonsyphilitics, a negative Wassermann does not exclude syphilis, and a positive reaction is not absolute proof that syphilis is present.

Malignant Syphilis.—Ch. Laurent reports a case of ulceration of the carotid by a phagedenic ulcer in a man aged thirty-three years, that resisted all treatment.

WIENER KLINISCHE WOCHENSCHRIFT.

Treatment of Chronic Ulcer of the Leg with Radium Emanation.—Johann Saphier reports a series of twenty-one cases treated with radium in the form of emanation water of 20,000 to 30,000 units and pulverized compressed radium tablets of 250 units. The surface of the ulcer was first cleaned with peroxide of hydrogen; then gauze soaked in the emanation water was applied, and covered with rubber tissue, fastened with a bandage. The following day a boric acid ointment dressing was applied. In exceptional cases, where a weak reaction took place, the radium dressing was repeated one or more times according to necessity. Where tablets

were employed, they were pulverized and used in the form of a dusting powder, which usually occasioned pain for several hours after application. The result of the twenty-one cases was as follows: Ten were discharged cured; six cases were decidedly improved; five cases were not improved, two showed no change whatsoever. At the present time there is no way of determining which cases are suitable for this particular kind of treatment, but it is apparently an advance in the therapy of chronic ulcers of the leg.

Intravenous Injection of Salt Solution in Pulmonary Hemorrhage.—J. Moczulski treated cases of pulmonary hemorrhage that were not benefited by hydrastis, ice, morphine, gelatin, etc., with intravenous injections of ten c. c. of ten per cent. salt solution. The duration of the injection was three minutes and at the site a dry sterile dressing was applied. Hemorrhage does not stop at once but hemoptysis is greatly reduced. Subsequent hemorrhages are not prevented; in case of fresh bleeding, repetition of the injection is beneficial. This method is not a panacea, it is a valuable aid to other methods and one which has given better results.

Treatment of Leucemia with X Ray and Benzol.—A. Pulaski reports a case of lymphatic leucemia with enlarged spleen and lymph glands treated with x ray for a period of two weeks. Leucocytes were reduced to about one third of their former number, hemoglobin increased, and a slight decrease took place in the size of the glands and spleen. Benzol and olive oil, in equal parts, were then administered in doses of thirty drops three times a day and the x ray treatment omitted. Benzol caused a marked reduction in the number of leucocytes and in the size of the glands. At this time the patient showed some untoward symptoms, slight fever, cough, and a more marked anemia; administration of benzol and olive oil was discontinued, and iron, arsenic, and cod liver oil substituted. Later the glands began to enlarge again and the x rays were again applied. All symptoms now improved, showing that the action of benzol in leucemia is greatly enhanced by the x ray.

Surface Temperatures in Diseases of the Lungs.—W. Heinz examined a number of normal adults to determine whether there is a constant difference in the surface temperature over both lungs. He found that this was not the case; at times the right side, at others the left, showed the higher temperature. In cases of tuberculosis of one lung, the results did not differ materially from the normal. In some other conditions of the lungs, particularly pneumonia, the difference between the two sides is more constant, the diseased side showing the higher temperature in most cases, but still not constantly enough to be relied upon.

PARIS MÉDICAL.

Treatment of Scoliosis.—L. Lamy, replying to statements made by Desfosses in *Presse médicale* for February 4, 1914, asserts that, having applied several hundred plaster braces for scoliosis in both the Forbes and Abbott positions, he is convinced that these two methods are not to be looked upon as diametrically opposite. They can even be used conjointly, i. e., applied in succession in the same subject, at times with marked advantage. Neither method is perfect, both give good results, and each embodies a large measure of practical truth.

PRESSE MÉDICALE.

May 13, 1914.

Oculosympathetic Disturbances.—A. Cantonnet calls attention to the semeiological and diagnostic significance of what he terms the syndromes of oculosympathetic excitation and paralysis, respectively. The first is manifested clinically in pallor of the face, broadening of the palpebral fissure, protrusion of the eyeball, and papillary dilatation. Not infrequently the vasomotor sign (pallor) is absent, and occasionally mydriasis or broadened fissure exists alone. The syndrome of oculosympathetic paralysis shows itself in partial ptosis, enophthalmos, miosis (with all papillary reflexes unimpaired), and rather often in lowered intraocular tension and vasodilator and secretory disturbances of the face. One of the author's patients exhibited marked sweating of one side of the face, and when the condition is of long standing, facial hemiatrophy may result. Frequently the picture is incomplete, ptosis and miosis being alone present, or ptosis, miosis, and enophthalmos, or ptosis, miosis, conjunctival injection, and facial redness, or again, miosis alone. Oculosympathetic disturbances are often the sole or the earliest evidence of deep seated disease of the neck, thorax, abdomen, etc. They may result from disease of the bulbar sympathetic centre, or lesions of the cord reacting on the bulbar centre, as in disseminated sclerosis, Friedrich's disease, syringomyelia, or acute myelitis; from spinal pachymeningitis or tumor, from Pott's disease, and from pressure on the cervical sympathetic, as by neighboring tumors, thyroid enlargement, and aneurysm. Similar phenomena may be noted in lung tuberculosis, pleurisy, pneumonia, and organic disease of the stomach, liver, spleen, pancreas, uterus, and ovaries. To related disturbances of internal secretion may be ascribed the sudden exophthalmos and thyroid enlargement sometimes noted in chloroform anesthesia, as well as the vasomotor and secretory manifestations in the eye which eventuate in hydrophthalmos or infantile glaucoma. Instillation of two drops of four per cent. cocaine in each eye, with examination of the pupils in a place away from the light seven or eight minutes later is of assistance in detecting mild degrees of pupillary inequality.

SEMAINE MÉDICALE.

Camphor in Respiratory Affections.—L. Cheinisse, reviewing experiences of various observers with camphor in pulmonary tuberculosis and pneumonia, states that in the former condition injection of camphorated oil is tonic to the heart, excites motor activity, including that of the stomach, and appetite. Taken by mouth, camphor activates perspiration (Adamkiewicz); used subcutaneously, it tends to reduce nightsweats. In simple bronchitis, camphor liquefies the bronchial secretions; in tuberculosis, progress of the disease is less acute. In twenty per cent. of Weibrauch's 246 tuberculous

cases, camphor injections diminished or removed fever. In pneumonia, while not unreservedly accepting the conclusion of Heard and Brooks that camphor is not a heart stimulant, one may assume, from recent experimental work, that the clinical benefit noted is due rather to a direct action of the drug on the pneumococcus than to cardiac stimulation.

Large, Hemorrhagic, Apparently Fibromatous Uteri.—F. Lejars is convinced, from his clinical experience, that the large, apparently fibromatous uterus, hemorrhagic because of small polypi in its cavity, occurs far more frequently than is generally realized. Diagnosis by palpation is difficult, perfect regularity and uniformity of the uterus being alone suggestive. In uteri showing these peculiarities, especially in young women, additional information by intrauterine exploration should be sought. This will enable the practitioner to exclude placental remnants as a cause of enlargement of the uterus.

BRITISH MEDICAL JOURNAL

May 23, 1914.

Work of the Radium Institute.—A. E. Hayward Pinch reports the results obtained in the treatment of 860 patients with radium or its emanation. The results confirm those detailed in the report of a year ago with regard to the influence of this agent on certain types of malignant disease. The best results are obtained in cases of epithelioma of glabrous surfaces, while epithelioma of the mucous membranes has been found refractory. The effects are very good in uterine cancer, and it is by far the best agent for the treatment of inoperable cancer in this organ. It has proved of considerable value in many cases of carcinoma of the breast, particularly in the treatment of small, isolated recurrences which are attached to the bone. A few cases of carcinoma of the thyroid have been treated with promising results. Paget's disease usually can be cured by a single adequate exposure. Certain cases of cancer of the rectum, particularly the annular form when situated high up, are favorably influenced. All cases of carcinoma of the prostate thus far treated have been benefited, and it is remarkable how rapidly the treatment relieves most of the symptoms. The same may be said of carcinoma of the bladder. Only the hypertrophic nodular form of rodent ulcer yields to radium. Sarcoma, if taken early and treated with very heavy doses, usually gives good results. It has been possible to check the rate of growth of mediastinal tumors in nearly every case, and the action of radium in lessening the tendency to the further production of effusion is striking. While radium promptly reduces the menorrhagia and metrorrhagia of fibroids, it has little or no influence on the size of the tumors. Leukoplakia is usually promptly removed, but has a marked tendency to return. Of nonmalignant conditions certain forms of nævi, lupus, keloid, psoriasis, and lichen with pruritus are all very favorably affected. The results obtained in the treatment of a few cases of exophthalmic goitre are such as to justify a more extended trial. The internal administration of solution of radium emanation in water has a strikingly favorable influence on early cases of arthritis deformans. W. L. S. Alton, of the chemicophysical laboratory, describes his method of preparing tubes filled with measured doses of radium emanation, and designed for a wide variety of sites of application. He finds that these tubes retain their average potency for more than twenty-four hours. He has also devised a method of applying the emanation to the deeper parts by means of a platinoiridium needle into the lumen of which is inserted a capillary glass tube filled with the gas.

Multilocular Cystic Disease of the Pancreas.—Ernest C. Hadley believes this case to be the only one that has been reported in England. The patient, an otherwise healthy young woman, first noticed a little pain in a mass in her upper abdomen more than ten years before her death. At this time, the entire body and the tail of the pancreas were removed at operation and were found riddled with cysts, including one very large one. From then she continued well and free from all digestive or other disturbances until nearly ten years later when she had become much wasted and had developed marked multiple neuritis involving all four extremities. Both the wasting and the neuritis continued, the former finally causing her death. Almost until the day of her death, her digestive functions were practically normal, except uncontrollable vomiting in the last few months of life. Post mortem the remaining head of the pancreas was found to have been almost replaced with cysts similar to those previously found in the body and tail. The cysts were separated by areas of almost normal pancreatic tissue, but in neither specimen was there any trace of the islands of Langerhans. The urine found in the bladder after death reduced Fehling's solution, but at no previous time had there been evidence of sugar. The cysts seem to have arisen primarily from proliferating gland cells which formed acini, these becoming distended with the secretions of the lining cells. The condition was a cystadenoma of nonmalignant type.

Pituitrin in Intestinal Stasis.—Norman Porritt has found this drug of value in promoting movements of the intestine in three cases of obstinate intestinal stasis secondary to abdominal operations.

The Value of a Mask over the Surgeon's Mouth.—A. L. Candler used cultures of Bacillus prodigiosus, which were gargled by the subjects just prior to the experiments, to test the value of masks over the mouth. He finds that in the course of ordinary low talking and quiet breathing, no organisms are expelled from the mouth, but that coughing and sneezing drive forth large numbers. Masks with eight layers of gauze over the mouth completely prevent the escape of bacilli after coughing or mild sneezing, but allow some organisms to escape with prolonged, violent sneezing.

LANCET.

Diagnosis of Pulmonary Tuberculosis.—A. C. Inman describes a complement fixation test for this purpose, using the following reagents: 1. Antigen prepared by Besredka from tubercle bacilli grown in a liquid medium of veal broth and the white and yolk of the hen's egg. After three to four weeks' growth, the culture is heated to 115° C., the bacteria

are filtered out, and the fluid contains enough tuberculin to kill a tuberculous guineapig in a dose of one fifth to two c. c. 2. Human serum obtained from ten c. c. of blood and inactivated at 55° to 56° C. for thirty minutes. Two tenths of a c. c. of this serum is used for each tube. 3. Complement of fresh guineapig blood serum was used, diluted one in thirty. The dose was fixed by titration in the presence of antigen and normal serum. 4. A rabbit-sheep hemolysin was employed as the specific hemolytic amboceptor. 5. The test erythrocytes were obtained from fresh sheep's blood. The important feature of the test is believed to be the antigen, which is specially prepared free from glycerin, peptone, and salts. In a series of 100 cases of pulmonary tuberculosis with bacilli in the sputum the test was positive in ninety-five per cent., using a range of dilution from one half to 1/256. An error may frequently be associated with this test in the securing of serum for controls, for it was found that the serum from patients who gave a positive Wassermann reaction also very often reacted positively to the tuberculin complement fixation test. This fact must be taken into consideration in the use of the test for diagnostic purposes, and the Wassermann reaction should be proved negative before the tuberculin reaction can be regarded as diagnostic. Inman concludes with the statements: "Repeated positive reactions, especially with a thirty-two fold serum dilution, in the absence of a positive Wassermann reaction, indicate the presence of an active tuberculous lesion. Repeated negative reactions indicate the absence of an active tuberculous lesion, if cases of under twelve months' duration be excepted."

Experimental Nephritis.—Horst Oertel summarizes his experiments in the following words: "It is evident from these experiments that definite lesions result in the liver after administration of cantharidin, bichloride of mercury, and uranium nitrate. These bear a more or less close resemblance to the changes in the kidney. Cantharidin produces a rapidly progressing and general parenchymatous degeneration, and necrosis associated almost from the beginning with tremendous hemorrhagic and vascular engorgement and cellular exudation. These lead, even in small and moderate doses, to a marked and rapid disorganization of the liver. The accompanying symptoms are severe and lead to speedy death. In mercury the picture is controlled by parenchymatous and fatty degenerations with which edematous swelling is associated. These lead, according to the dose and susceptibility of the animal, to rapid or retarded solution of the cell, especially in the central parts of the lobules. Somewhat similar to mercury are the changes brought about by uranium, but a much greater inflammatory edema or serous exudate and a greater swelling, vacuolization, and cytolysis of the parenchyma in the kidney and liver distinguish it from mercury poisoning. The fatty changes are less marked than after mercury, owing, in all probability, to the greater and more rapid edematous dissolution of the cells. But in both lesions the central parts of the lobules are most severely involved. The conclusion may therefore be drawn that cantharidin, mercury, and uranium are not selective poisons, that they affect not only the kidney but the liver, and that they involve in both organs parenchyma as well as circulatory system. Functional changes which have been observed in those instances cannot therefore be regarded as solely due to injury of one or the other part of the kidney, in fact not to the kidney alone, for the alterations in the liver make it probable that these changes are, at least partly, dependent upon metabolic disturbance by these poisons."

Syphilis of the Central Nervous System.—J. E. R. McDonagh lays great stress on the fact that sterilization of the body as a whole may not include the tissues of the central nervous system because these are not accessible to the drugs or the syphilitic antibodies in sufficient quantities. He contends that, "any area of the system can be shut off like the central nervous system, with the result that when the other areas are sterilized the spores in the single area can develop and give rise to a fresh chancre, which is followed in time by the usual secondary symptoms." He also suggests that the sterilization of the blood, by decreasing the antibodies, may hasten an attack of syphilis of the nervous system. Not only can the infective agent reach the nervous system easily, but examination in the earliest stages shows pathological alterations in many cases. He believes that the method of Swift and Ellis is of some value, but that it is by no means curative in the larger number of cases. On the other hand, if adequate treatment can be begun and carried out before the nervous system is infected, there is reason to believe that it will always remain free.

Secondary or Symptomatic Leucemia.—Gordon R. Ward cites the records from the literature of a number of cases in which there is reason to believe that the leucemic blood picture and tissue changes arose secondary to some other factor. The commonest causes seem to be infections, fractures of a crushing type in which infection may be the chief factor, and cases of cancer. Ward therefore believes that we should divide leucemia into the idiopathic and the secondary, or symptomatic forms just as we now classify the severe anemias.

PRACTITIONER.

May, 1911

Syphilis and Insanity.—George H. Savage says that syphilis may be a cause of congenital mental defect; it may prevent healthy development of the brain; it may interfere with development by the senses and lead to defective education. It may give rise to convulsions, which may become established either as epilepsy or mental weakness. It may affect the moral development; and a syphilitic offspring in his experience has not infrequently been morally defective in one way or another, and incapable of recognizing social duties. Syphilis may cause hypochondriacal feelings; the presence of stigmata may make the patient believe that he is a suspect, and may thus give rise to delusions of suspicion, to melancholia, and to suicide. Congenital syphilis is almost certainly the cause of adolescent general paralysis. Ordinary general paralysis, and locomotor ataxia with mental symptoms, are associated in nearly all cases in his experience with a history of syphilis. There are many forms of de-

mentia depending on arterial degeneration which may produce general brain decay, or local troubles, as softening or apoplectic seizures. Regarding salvarsan, Savage considers this an experiment that we are justified in trying on patients who are otherwise perfectly hopeless and incurable.

Digitalis in Heart Diseases.—Richard Douglas Powell points out that digitalis is not efficient in all diseases and disorders of the heart. In acute injuries, and such acute affections as pericarditis, endocarditis, and myocarditis, it is of little or only of quite subordinate value. In chronic diseases of the myocardium of syphilitic, alcoholic, or coronary origin, the use of digitalis is of secondary importance and is often distinctly contraindicated. It is in chronic valvular disease with failing power of ventricles that digitalis and, in a less degree, the class of drugs which it represents, are especially indicated; in fatigue of the heart after acute disease or strain it is also of great value. Indications are signs of failing power, and in the endeavor to strengthen the heart, we must bear in mind the requirements of each case. The management of various forms of cardiac disease are discussed, together with the adjuvants of digitalis. In a certain class of cases, he has found quite small doses to be beneficial.

Glycosuria and Its Relation to Disease of the Pancreas.—P. J. Cammidge says that the first essential in the treatment of all cases of glycosuria is that the diet should be adjusted as accurately as possible to the metabolic powers of the patient, so that, while sufficient food is taken and absorbed to meet the requirements of the body, all unnecessary strain on the defective functions is avoided. Each patient is a law unto himself, as to the kind and quantity of food that can efficiently be dealt with, and is best tolerated. We cannot argue from one case to another, nor lay down rules that will be generally applicable. Diabetes is essentially a disturbance of the chemistry of the body, in which the metabolism of carbohydrates, fats, and proteins may be involved, and if we are to treat our patients satisfactorily we must ascertain their powers of dealing with each of these substances. The earlier in the course of the disease the treatment can be begun, the easier will be our task, and the more satisfactory the results.

Anemia in Childhood.—R. A. Chisholm reviews the various diseases that are well known to be productive of anemia; when all of these causes have been excluded we are left with a considerable group of cases of indefinite origin, in which no very precise and obvious reason can be found for anemia. Many children, especially girls, grow too fast, or at least so fast that their blood forming organs are unable to keep pace with the demands of their tissues, and anemia results. For such the best prescription is to set them free from all work and let them run wild in the country, under the eye of some one who will not let them overtax their strength; the same treatment is most useful when anemia is due to overstrain at school.

Treatment of Severe Menstrual Pain and Excessive Bleeding with X Rays.—Francis Hernahan-Johnson reports two cases which he thinks illustrate the following points in x ray treatment of menstrual disorder: 1. Hemorrhage is more quickly relieved than other symptoms. 2. The period immediately succeeding the beginning of treatment is no better, and may be worse than usual. 3. The second period is delayed. It will probably show slight improvement, but more attention should be paid to the patient's feeling during the interval. If she has felt even a little better, it is worth going on. 4. During the second interval, there should be a distinct advance, and the third period ought to be less severe than usual. 5. Improvement, once started, will continue for some months after x rays have been discontinued.

BOSTON MEDICAL AND SURGICAL JOURNAL

Macroscopic Gastric Stasis.—A. Everett Austin summarizes his remarks by saying that: 1, A limited number of rice grains visible in the wash water only by means of the microscope twelve hours or later after the evening meal, when accompanied by marked hydrochloric acid reaction or bile, means a spasmodic closure of the pylorus or a myasthenia and is rarely permanent. 2. Currants or raisins may be retained for this period in a myasthenic stomach, or sometimes pass through a moderate narrowing of the pylorus. 3. A distinct amylaceous residue made visible to the unaided eye by means of Lugol's solution, which is not accompanied by bile, but by hydrochloric or organic acids, if persistent, means a mechanical hindrance to the egress of food from the stomach. 4. A wash water containing free hydrochloric acid and microscopic starch remnants may indicate an old ulcer scar without a trace of gastric stenosis. 5. A minor gastric retention detected by lavage and unconfirmed by the radiograph, is proof of pyloric spasm rather than stenosis, and will often disappear upon appropriate medical treatment. 6. A radiographic demonstration of gastric stasis, not substantiated by lavage, is oftenest due to myasthenia, since the weakened gastric walls cannot free the stomach from the heavy bismuth within the accepted time.

Anaphylactic Reactions Occurring in Horse Asthma after Diphtheria Antitoxin.—J. L. Goodale raises the question whether individuals suffering from horse asthma are peculiarly susceptible to horse serum and reports his observations of a few cases. So far as they go, these cases seem to indicate that in horse asthma, an anaphylactic reaction may occur after the administration of horse serum. In horse fever, with nasal symptoms alone, this danger is less, nor is it to be feared; in other types of asthma and of vasomotor rhinitis, it is not present.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

The Abderhalden-Fauser Reaction in Mental Diseases.—C. E. Simon states that results of different observers, though in the main they support the views of Fauser, are sufficiently divergent to warrant another series of observations. In 106 cases, in which the serums were tested against sex gland, Basedow thyroid, and cortex, a sex gland reaction may be obtained in nearly all, if not all, cases of dementia præcox at some stage of the dis-

ease, but the reaction is not specific of dementia præcox, as Fauser asserts. In a small proportion of cases in which the clinical history pointed to manic depressive insanity, a reaction took place; and in other types of insanity also the reaction may be obtained, even though we admit that it is observed far less consistently. Of special interest is the observation that in a large proportion of alcoholic cases a sex gland reaction seems to be obtainable. It is to be noted that no reaction was obtained in any one of eleven cases of paresis. The author's technic is described.

Results of Radium in Cancer.—H. H. Janeway asserts that radium usually produces a selective destructive action on cancers, but this action never reaches to the more distant extensions of the deeper and more serious forms. He believes that unless the greatest care is taken in its application, the more distant portions of the tumor will be stimulated to more active growth. All observers of the action of radium on cancer have expressed the belief that an insufficient dose of radioactivity may stimulate tumor growth. All who use radium believe that no operable cancers, except those of the skin, should be treated with radium instead of operation. He considers that the true position of radium in the treatment of cancer, with the present methods of application, is a settled matter. While it will destroy cancer tissue in a dose not affecting normal tissues, it does not cure the disease unless quite superficial or of a variety peculiarly susceptible to radium. The fact that we have in radioactivity an agent which will specifically affect cancer is of very great importance—as no other agent has thus far been discovered which in any degree approaches its effectiveness. These facts offer every encouragement that a more successful method of applying this remedy may yet be discovered; the whole question reduces itself to the even distribution of the proper dose throughout all involved tissues.

Elephantiasis and the Kondoleon Operation.—H. A. Royster describes a case of elephantiasis of the leg (typical Barbados leg) in which he performed this operation with very satisfactory results. Kondoleon's plan, he states, was evolved from the idea of Lanz of Amsterdam, who refers to his procedure as a "deep lymphatic derivation." Lanz's operation, however, is technically difficult, while the method of Kondoleon, who is a Greek surgeon, is simple. The principle involved is that, by removal of the deep fascia, there is brought about an anastomosis between the deep and the superficial lymph spaces. At the time of writing, more than three months after the operation, the measurements of the affected leg were calf, fifteen and a half inches; above the ankle, fifteen and a half inches; foot, thirteen and a quarter inches. The sound leg showed the following: calf, fifteen and a half inches; above the ankle, ten and a half inches; foot, ten and a half inches. The author remarks that very little decrease has been secured in the size of the affected foot, and he would propose a similar operation in that region as the next step, provided it could be done without damage to the tendons. The skin over the whole leg is much smoother, and quite movable over the underlying tissues.

Paraffin Cancer.—B. F. Davis concludes that the chronic irritation cancer produced by coal and petroleum products is a chemical irritation cancer, and that it is not impossible that cancer following chronic irritation of other origin may be of an essentially similar nature.

MEDICAL RECORD.

May 30, 1914.

Traumatic Nerve Paralysis.—A. S. Leverty quotes C. L. Dana to the effect that the passage of workmen's compensation laws will make the study of the traumatic neurosis more vital and call for more specific and detailed knowledge regarding the conditions. His conclusions are as follows: Of 331 cases, the males numbered eighty-eight per cent., the females twelve per cent. Traumatic paralysis occurs from infancy to old age. Ninety per cent. of the cases occurred between the ages of twenty and thirty-five years. Occupation varied greatly; the predominant occupations were those of laborers, drivers of vehicles, and houseworkers. The most direct exciting cause was pressure during sleep induced by alcohol; the next in frequency was violence. It does not appear that the accidents were connected with dangerous work, awkwardness, or carelessness. Ninety-five per cent. of the cases occurred in the upper extremities. There was a distinct relation between the particular occupation and the trauma in twenty-three per cent. Eighty per cent. of the patients presented themselves during the first three months of the paralysis. Fracture at the base of the skull, involving the facial nerve in its course, produced facial palsy in forty per cent. The female cases were not caused by violence. None of the cases showed a complete recovery. The great proportion of all cases of peripheral birth palsies of the "upper arm type," as seen in a neurological clinic, are of vertex presentation with artificial delivery. Operation does not improve the condition. When the reaction of degeneration is present, improvement is slow and the paralysis may be permanent.

Laryngeal Tuberculosis in Sanatoriums and Private Practice.—W. Freudenthal states that when the epiglottis is greatly infiltrated and dysphagia is pronounced, all our efforts toward alleviating it will fail. The best we can do is to amputate the epiglottis, preferably with the cold snare. If the epiglottis is the only part affected, improvement is occasionally noticed immediately; however, when ulcers are present further down, they should be especially treated. To remove the pain in deglutition, and incidentally laryngeal cough, local analgesia of long duration must be produced by the use of orthoform or anesthesin, applied as a powder or in the emulsion recommended by the author some years ago. Such medication alone, by putting the parts at rest, will often result in the cicatrization of an ulcer. These analgesic agents cure only a certain proportion, and caustics may have to be resorted to. The most effective is the galvanocautery (point); though it cannot be recommended for multiple ulcers. He formerly employed ful-

guration: but since the introduction of suspension laryngoscopy, he has given up the high frequency current as well as the galvanocautery, and operates mostly by curetting under suspension laryngoscopy. If infiltrations, as well as ulcers recur, we have to excise and curette them under suspension as often as may become necessary and as long as the patient derives any benefit. If a patient in a sanatorium shows but slight infiltrations of the bands or the aryepiglottic fold, or slight injection of the cords, without any symptoms except perhaps a little hoarseness, he does not need to be treated locally; but with the appearance of more serious symptoms, especially dysphagia, it is the author's practice to be as active as possible and not limit himself to one remedy alone. He has found the different rays very helpful: the actinic rays, the high frequency current, and radium rays. Injections of alcohol into the superior laryngeal nerve may be tried for the purpose of producing analgesia of long duration. In private practice the first thing is to make the patient's home as sanitary as possible, the second, to relieve dysphagia and cough. If successful in this the physician ought to be able to cure fifty per cent. of tuberculosis of the larynx at any stage.

Cæsarean Section—Three Methods.—S. J. Druskin concludes: In the lesser degrees of contracted pelvis conservative treatment gives the best results, for both mother and child. When interference is called for, the cutting operations should be chosen in preference to the purely obstetric ones The classical Cæsarean section should be reserved for cases of contracted pelvis and for clean cases of placenta prævia. The extraperitoneal Cæsarean section should be the operation of choice in cases which have been handled by outsiders and in those in which labor has continued a long time with ruptured membranes. Pubiotomy should have a limited application. Vaginal Cæsarean section may be advantageously substituted, in the majority of instances, for the stretching and tearing operations whenever rapid emptying of the uterus is desirable, and in placenta prævia where dilatation has progressed but is incomplete.

NEW YORK STATE JOURNAL OF MEDICINE.

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The Kinetic System.—George W. Crile formulates a theory which he hopes, "will harmonize a large number of clinical and experimental data, supply an interpretation of certain diseases, and show by what means many diverse causes produce the same end effects." The kinetic system includes the brain, the suprarenal glands, the thyroid, liver, and the muscles, and serves the function of self preservation of man and many allied animals through the conversion of latent into kinetic energy to accomplish adaptive ends. Under ordinary circumstances a wide range of influences act to cause variations in the rate of the output of kinetic energy of the individual. Such physiological causes as the process of growth, sexual maturity, mating, old age, and the like, play important roles and in addition there are such adventitious factors as combat, anger, worry, and the entire range of diseases. Under any of these conditions which call for an excessive liberation of kinetic energy, histological changes are to be found in the cells of the brain, suprarenals, and liver. These changes are identical, regardless of the causes which gave rise to the liberation of energy. He shows, further, by means of crossed circulation experiments that the changes in each of these structures are produced, not by the action of waste products of increased metabolism, but through actual excessive activity of the structure in question. Each is to a certain extent independent of the other, but their relations are completely reciprocal, and disturbance of one of these organs cannot give rise to a release of kinetic energy without the participation of the other two. The changes in each of these three structures are "work" changes. The thyroid does not show histological changes in the laboratory experiments, but the wealth of clinical observation concerning the relation of this gland to the kinetic system is so great as to leave no doubt of its role. It is well known that in conditions of hyperthyroidism we have manifestations of a greatly increased output of kinetic energy; the administration of thyroid to animals produces similar effects; myxedema and operative removal of the thyroid are followed by a great diminution in the available kinetic energy, and the administration of the glandular substance will restore this. The special part played by the thyroid gland in the kinetic system seems to be that "of governing the rate of discharge of energy, the thyroid is the pacemaker." To strengthen his contentions concerning the existence of this kinetic system, Crile cites certain well established observations upon the effects of disease of the several individual portions of the system upon the discharge of kinetic energy. Cerebral softening is associated with feeble muscular power and intellect, its victims do not resist disease well, and they generally show a tendency to have lower febrile response to infection. Addison's disease is associated with marked weakness, a subnormal temperature, and liability to infection. Cirrhosis of the liver has a somewhat similar train of manifestations associated with diminution of the kinetic energy. In myasthenia gravis the production of motion and heat is far below normal. This theory leads to the acceptance of the belief that shock, from whatever cause, is the same in its mechanism—that is an overstimulation and exhaustion of the kinetic system. It has been demonstrated that it may be prevented in operations by the method of anoci association, and it can be shown that morphine can do much to prevent its development in many acute infectious or toxic conditions. Absolute rest and sleep are the sovereign means of restoring the spent organs.

OPHTHALMIC RECORD.

Glaucoma as an Etiological Factor in Insanity.—Carroll B. Welton reports that in a woman aged sixty-nine years glaucoma developed, which was untreated and which was followed by insanity; she was committed to a hospital for the insane, where she still remains. Trephining relieved her pain.

The causal connection between glaucoma and insanity is not brought out well, but the writer believes that the intense pain protracted over a period of several months was a factor in the production of insanity. At all events, the case is of value as another illustration of the neglect of glaucoma by general practitioners, a neglect that is disastrous to the patient, as glaucoma usually terminates in total loss of sight.

New Method of Preparing an Eye for Microscopic Sections.—Hal R. Wright employs a reservoir suspended above a jar, each containing the fixing fluid; the top of the reservoir is closed with a perforated cork to limit evaporation. From the reservoir extend rubber tubes ending in glass pipettes that hang in the jar. The reservoir is filled with the fixing fluid, which is allowed to flow through the tubes and expel all of the air. A Graefe knife is passed into the vitreous four or five mm. posterior to the sclerocorneal border of a perfectly fresh eye, a pipette is inserted into this opening, fitting tightly enough to support the eye when the pinch cock is open. It is then suspended in the jar which contains the same fixing agent, where it is allowed to remain as long as desired. He asserts that by this means the intraocular pressure is maintained, and the tissues are fixed in their normal positions, thereby preventing detachment of the retina, shriveling and wrinkling of the cornea. The apparatus is used only to fix. The eye is then removed, washed in running water for twelve hours, dehydrated and infiltrated in the usual manner, except that during the infiltration the eye should remain in thin and thick celloidin for from ten to twenty days. He finds that by doing this the lens, sclera, and cornea cut and hold together better than by the old method.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Section in Obstetrics and Gynecology.

Stated Meeting, Held December 23, 1913.

Dr. George Gray, Jr., in the Chair.

Nephrectomy during Pregnancy.—Dr. A. H. Harrigan reported the case of a woman, twenty-one years of age, whose family history was negative. She was admitted to the Fordham Hospital, January 24, 1913, four months pregnant. Ten days previous to her admission, she had had an alveolar abscess which opened spontaneously. Two days later she had a chill and severe pain in the back which persisted and became more severe. Her temperature ranged from 100° to 103.4° F. Pain became more general over the abdomen, the maximum being in the right lumbar region. There was no frequency in urination and no burning sensation. The bowels were constipated. Physical examination showed a moderately distended abdomen. The uterus could be palpated, also the right kidney, which was enlarged and tender. There was extreme tenderness in the right costovertebral angle Examination of the other viscera revealed no abnormality. The white blood count was 34,800 and the polynuclears 88 per cent. The urine was acid, had a specific gravity of 1,030, a moderate amount of albumin, but no sugar. A large number of pus cells and hyaline and granular casts were present. Infection of the right kidney was diagnosed, either a pyelonephritis secondary to a puerperal pyelitis, or multiple septic infarcts of the kidney, in view of the history of the alveolar abscess. Nephrectomy was performed under ether narcosis. A right oblique lumbar incision was made. The kidney was easily distended and inspected and the surface was found to present innumerable foci of suppuration. The perirenal fat was infiltrated. The pedicle was transfixed in several places and ligated with chromic catgut. The ureter was ligated separately. There was no hemorrhage during the operation and the recovery was uneventful. The patient did not abort. On the second day after the operation she passed forty ounces of urine and this remained the daily average output while she was under observation. She was discharged in excellent condition on February 16th. At this time the wound had closed, save for a short sinus in the upper angle. The pathologist's report showed that the case was one of multiple septic infarcts of the kidney, or a so called unilateral hematogenous infection as described by Brewer. A pure culture of staphylococcus was isolated. On May 15, 1913, when the patient had reached about the end of the eighth month of her pregnancy, her family physician induced labor, believing this procedure indicated since the patient was slightly jaundiced, restless, and complained of itching of the skin and insomnia. Delivery was effected without any trouble and both mother and baby did well.

Dr. George Gray Ward, Jr., said that it was astonishing how much one could do in such cases without bringing on an abortion. He did not see why a nephrectomy should be expected to bring on such a result. Many operations were now performed on the pregnant uterus without causing abortion.

Doctor Harrigan, in reply to a question from Doctor Friedman, said that the patient was so ill and the kidney infection so apparent that it would have been a waste of time to have catheterized the ureters.

Chorioepithelioma uteri with Vaginal Metastases.—Dr. Michele Caturani presented a case of a woman, twenty-seven years of age, who had been married six years and had three children, the last, two years previously. In February, 1913, she had been operated on for hydatid mole, after four months of amenorrhea. In March she had some irregular bleeding and then amenorrhea for three months. At the end of June she had a severe hemorrhage accompanied by the passage of abundant clots. She was then admitted to the hospital. Her condition at this time was markedly anemic. She had chills and fever and a very offensive bloody discharge. The uterus was moderately contracted and did not admit the examining finger. The case was at that time considered one of incomplete infected abortion. After moderate

dilatation of the cervix, he had removed a few pieces of apparently necrotic placental remains by means of a holder forceps with a small sponge attached. The uterine cavity was packed with a small strip of gauze saturated with strong tincture of iodine. No pathological examination was made of the tissue removed. The condition of the patient improved, though the anemic condition was persistently marked. A few weeks later, a small dark colored nodule appeared on the vestibule. This was removed and sections were examined, when it was found that the condition was chorioepithelioma. Another vaginal metastasis soon formed in the posterior fornix. In a short time hemorrhages, marked edema, and dyspnea appeared, and the patient died, probably from general metastases, on August 18, 1913. At no time could a radical operation have been considered.

Doctor Caturani exhibited the uterus. He said that the special point in the history of the case was the amenorrhea which followed the removal of the hydatid mole. He had observed a similar occurrence in a previous case. He felt inclined to believe that in both of these instances the patient did not conceive after the mole was removed. The amenorrhea could possibly find an explanation in that remains of the mole left in the uterus were sufficient to influence the ovarian function as a fetal structure in evolution, since after the delivery of the mole the patient's condition was good. This fact should be of great importance from a clinical point of view. After the removal of a mole, both amenorrhea and metrorrhagia should be carefully watched, as molar remains might in their successive evolution give rise to chorioepithelioma. Pathologically, the different sections of the original uterine tumor and of the metastases showed the characteristic typical structure of chorioepithelioma. The fact was worthy of note that the uterine curettings were made up mostly of Langham's cells, while in the metastases the syncitial cells were relatively numerous, but there were more in the vulvar than in the vaginal sections.

Salpingitis nodosa.—Dr. M. Rabinowitz called attention to the fact that adenosalpingitis, or as some termed it salpingitis nodosa, had received practically no attention in this country. This might be because the malady was of pathological rather than of clinical interest. Views regarding the character of the lesion were conflicting, but might be grouped into three classes: 1. The condition was inflammatory in origin. 2. Recklinghausen's assumption of a congenital origin, due to misplaced embryonal remnants. 3. A compromise of these two views. Chiari's studies stimulated many investigators to search for additional corroborative evidence, and prominent among his supporters were Martin, Orthmann, Werth, and Schauta. Recklinghausen, in 1896, published his ingenious treatise entitled Die Adenomyome und Cystadenome der Uterus und Tubenwandung, in which he attempted to overthrow the inflammatory theory, and set forth the congenital origin of salpingitis nodosa. The foundation upon which Recklinghausen built his theory was that in early fetal life, as soon as the Wolffian body and its canal appeared, the Müllerian duct approached the Wolffian canal, then crossed it, and, finally, assumed a lateral position. At this crossing point, which was at the isthmus of the tube, the epithelium of the Müllerian duct came in such close contact with that of the Wolffian canal, that a confluence of these tissues readily took place, and hence the possibility of Wolffian rests occurring in the tube wall. In order to support this theory, he described minutely these adenomatous spaces as being composed of secreting tubules, terminal tubules, and pseudoglomeruli, all morphological components of the normal Wolffian body. The noncommunication of these gland spaces with the tube lumen showed that they were not derived from the tubal mucosa. The presence of yellow bodies or pigmented cells in the lumina of these tubules, mainly the secreting tubules according to Mihalkovics, Tourneux, Balantyne Williams, and Czerny, were constituents of the epiophoron and paroophoron. Another point in favor of this theory was the ciliated character of the columnar epithelium lining the adenomata. This ciliated epithelium was found, according to Czerny, in the tubules of Giraldes in newborn sucklings, but disappeared with the advance in growth and was wanting in even the freshly examined adult specimens. Waldeyer and Orthmann held that only the middle portion of the tubules contained ciliated epithelium, while the collecting and secreting tubules were devoid of it. Frey and Krause, on the other hand, described the epithelium lining the organ of Giraldes as squamous in nature. The difference in the staining properties between the epithelium of the tube and that of the gland spaces, the latter being much lighter in color, which was peculiar to fetal tissue, made it probable that the adenomatous spaces were of embryonal origin. The comparative rarity or the total absence of adenomyomatous changes in the cervix uteri, was held to be further evidence in favor of the congenital origin. He reasoned thus: Why should the cervix uteri, which under normal conditions was so abundantly provided with large glands, be free from adenomatous proliferations, while the fetal mucosa, which was ordinarily a glandless structure, was capable of giving rise to glandular metamorphosis? These were the salient points in support of the congenital origin of adenomyomosalpingitis. The cases were arranged in two main groups, those in which the adenomatous changes were limited chiefly to the mucosa, and those in which the glandular proliferation had extended to and beyond the muscular coats, thus constituting the true picture of adenomyosalpingitis.

Doctor Rabinowitz exhibited twenty-six photomicrographs on the screen, showing her findings in this condition. She concluded as follows: 1. Adenomyosalpingitis (salpingitis nodosa) was inflammatory in origin. 2. It was one of the final stages of microbic infection of the Fallopian tubes. 3. The most common microbic infections were gonorrheal and tuberculous; in a series recently reported the proportion was four to one. 4. The theories that adenomyosalpingitis was a congenital or a blastomatous process, had thus far received no substantiation. 5. The term adenomyosalpingitis best expressed the pathogenesis of this lesion and should be generally adopted.

Dr. Herman Grad said that the microscopic il-

lustrations that Doctor Rabinowitz had exhibited had not convinced him that they showed anything of an adenomyoma of the tube. They showed to his mind the microscopic picture of a chronic salpingitis where the congenital folds of the mucous membrane of the tube had become adherent to each other, giving the appearance of glands. The oviducts had no glands. The open spaces, which were outside the muscular wall of the tube, were uterine glands, and he was fortified in his contention by the fact that the microscopic sections were made through the interstitial portion of the tube. The sections of the tube that were made through the isthmus and ampulla of the tube did not show these glandular structures.

Doctor Rabinowitz said that Doctor Grad's conception of the pathology of adenomyoma was apparently not clear, for otherwise he could not have made the assertion that the sections simply showed the ordinary changes of chronic salpingitis, that the glandlike spaces in the tube were simply prolongations of the uterine mucosa, and that some of them were tubal diverticulæ. If Doctor Grad would read her paper on the Pathogenesis of Adenomyosalpingitis, he would be convinced of the unsoundness of his criticism. The lesions shown corresponded in all particulars and details to the pathological changes described under this heading by authorities like R. Melver, Morton, Werth, etc.

Ovarian Gestation.—Dr. Michele Caturani first reviewed the history of ovarian gestation and cited evidence which led him to conclude that in early cases, the diagnosis of primary impregnation was relatively easy after a careful microscopical study of the specimen. On account of the difficulty of determining the real nature of the cases, Williams divided them into positive, highly probable, probable, and doubtful. Up to 1906 he was able to find only thirteen cases which belonged to the first class, and seventeen to the second. Norris, in 1909, reported nineteen cases and the reports of Bryce, Lea, Rubin, Graham, and McCann each included one case. The rare occurrence of the condition made the real causes of ovarian gestation rather obscure, more so on account of the unsettled opinion as to the determining causes of ectopic gestation in general. Those ingenious hypotheses which Webster laid as the foundation, in accounting for tubal gestation, did not extend to the explanation of those occurring outside the tube. He insisted on the decidual reaction as an indispensable factor to the implantation of the ovum, and believed this reaction to be specific to Müllerian tissue only. In the human female under normal conditions, only the uterus was able to respond to genetic influence. The tube occasionally reacted as a result of some developmental fault, or as a structural or functional reversion of the tubal mucosa to an earlier type in mammalian evolution. When these conditions existed, several contributory causes (site of fertilization above or below the point of occurrence) of the decidual reaction in the tube would determine whether a fertilized ovum should develop in the tube or in the uterus As a logical consequence of these views, Webster, at the time of the publication of his theory, refused to accept the possibility of ovarian gestation with the statement that there could be no gestation where there was no genetic reaction. There was no reason to believe that the Graafian follicle could respond to the genetic influence, and there was no proof that any gestation ever started in them. Without going into details, he would confine himself to the statement that, it was the consensus that decidual reaction in the human female was only specific to the uterus in consequence of the functional requirement, and occasionally occurred in the tube, but was never as complete as in the uterus. There was no reason to believe that this reaction was a primary cause of ectopy in the tube, but it was more logical to regard it as a result of the specific action of the fertilized ovum in a tissue homologous or phylogenetically analogous to the submucous layer of the uterus. They should also remember that ectopic gestation was a pathological condition, and as such, only pathological factors were worthy of consideration.

After reviewing the various theories advanced in regard to the etiology of ovarian pregnancy, Doctor Caturani said, that with the assistance of Doctor Ewing he had made a most careful study of various sections and had found what might be called an attempt at decidual formation. Here and there scattered groups of cells of decidualike nature were found, especially around bloodvessels. In no part of the fibrillar connective tissue covering the columns of lutein cells or the fibrous septa of the same columns, was there any evidence of decidual cells. Tussembrook held that the absence of decidual reaction in the ovary would easily explain, from the lack of necessary trophic properties of the decidua, the hemorrhages between ovular sac and maternal tissue. If they considered the decidua as a barrier to the invasion of the fetal tissue, they could easily explain from its insufficient formation the considerable invasion of villi and chorionic cells in the ovarian stroma and in parts quite distant from the fetal tissue. These pathological facts stood against the statement that many cases considered as ovarian, went to term, probably on account of the greater accommodation of the ovarian tissue. If they had to accept as primary the implantation of the ovum in the ovary, they could not but admit that the fertilization was ovarian also. Eleven cases out of the nineteen reported by Norris showed a close relation of the ovum with the corpus luteum. Clinical data, supported by anatomical findings, and the opinions of the majority of authors, tended to attribute great importance to inflammatory processes of the tube as etiological factors of tubal gestation. Inflammations of the ovary, especially perioophoritis, were most probable causes of ovarian gestation. The resistance of such ovarian tissue to rupture by the ripening follicles and the subsequent formation of cystic conditions were familiar to all. It was quite possible that the opening in the mature follicle might be insufficient to allow the existence of the ovum, or that incidental disease of the granulosa of the theca folliculi rendered impossible the escape of the ovum.

The case which he wished to report had been infected with gonorrhea and as a result the patient

had had a tubal ectopic product on the right side, two years previous to this ectopy, which occurred on the left. Evidences of inflammation were clearly shown in the tube and ovary. As to symptomatology and clinical diagnosis, the condition did not offer any special interest, in no way differing from tubal gestation. His patient was thirty-three years of age, an Italian. She had been married twelve years and had had three children and five miscarriages. She had been infected with syphilis and gonorrhea, having had an acute attack of gonorrhea fifteen months before the first miscarriage. In June, 1909, the lecturer had operated upon her for ectopic gestation and had removed the right tube and ovary. In January, 1912, she missed her period for a few days and this was followed by the typical symptoms of ectopic gestation. At operation, fifteen days after the initial attack, the abdomen was moderately filled with free and clotted blood, clots around left annexa, but there was no formation of a distinct hematocele. The fimbriated end of the tube was open. There was no trace of rupture in the tube. The ovary on the distal pole was apparently damaged and covered by clotted blood. The case was considered at the time as one of tubal abortion. The tube was removed and with it a third of the left ovary was resected on the distal pole. This resection was necessary on account of the absence of the right ovary. The condition of the ovary was interpreted as one of hematoma from rupture at the site of the follicle. The real nature of the specimen was not discovered until microscopical examination was made. The gross specimen was made up of the left tube and part of the left ovary still attached to the tube by a slight band of tissue. The tube, about seven cm. long, was cut very close to the uterine horn. There was no marked enlargement at any point. The ampulla was thickened and hard, but there were no kinks or traces of rupture. In comparing the gross appearance with the microscopical findings, the imbedded ovum seemed to have been deeply situated about one half cm. in the ovarian substance. He concluded as follows: 1. Macroscopical and microscopical evidence established beyond any doubt the primary ovarian nature of the gestation. 2. The intimate relation of fetal tissue and corpus luteum in the various stages might be a proof of the imbedding of the ovum in the follicle. 3. Probably the formation of the corpus luteum partly assumed the function of the decidua only as preventive of the invasion of the fetal elements. This view was in marked contrast with the views expressed by Teacher and Bryce, and the behavior of decidua and chorionic elements in their interlacing at the implantation site. 4. Decidual formation was present only as an incomplete stage in the ovarian gestation, and was a result of the reaction of the stroma to the specific action of the ovum. Every connective tissue in the genital organs was probably able to react in the same way as the Müllerian to the genetic influence. 5. The incomplete formation of the decidua explained the tremendous invasion of the stroma and its surroundings with chorionic elements. 6. This last condition was the cause of early interruption of ovarian gestation.

Dr. Herman Grad thought that the foregoing had been a very careful report. In speaking of ovarian gestation, the question resolved itself into the query, whether Webster's hypothesis was or was not correct. Could the impregnated ovum engraft itself on anything else but the tissues of the Müllerian ducts? If not, then it was not possible that rests of epithelial cells might become dislodged in the ovary and the fecundated ovum engraft itself on these rests, and in turn these displaced cells themselves become destroyed by the trophoblasts, leaving no trace of their former existence. In this way one could explain an ovarian gestation based on the hypothesis of Webster; or, perhaps, the connective tissue of the ovary was capable of reaching toward a fecundated ovum in such a way as to favor its imbedding.

Dr. M. Rabinowitz said that the etiology of ovarian gestation offered a wide field for speculation and theoretical reasoning, but one must not lose sight of the clinical fact that most of these cases gave a history of preceding inflammatory affections of the genital tract. This led her to believe that the most potent factor in the etiology of ovarian gestation was a preceding perioophoritis causing a thickening of the germinal layer and thereby preventing the escape of the impregnated ovum.

Election of Officers.—The officers elected by the section for the ensuing year were: Chairman, Dr. Asa B. Davis; secretary, Dr. George W. Kosmak.

Letters to the Editors.

THE NECESSITY FOR LAY INSTRUCTION OF THE PHYSICIAN.

Tyringham, Massachusetts, *May 31, 1914.*

To the Editors:

I have read with a great deal of interest your editorial article, A Belated Discovery, in your issue for May 23d. I shall be very glad if you find room in your pages to publish this response. The title you have chosen for the editorial is a singularly happy one. It was just because the discovery of the perfected use of scopolamine in obstetrics as developed at Freiburg seemed so very belated among practitioners in America that we decided to appeal the case to the women of the country through the medium of a popular magazine. We did this only after a great deal of hesitation, recognizing fully, I think, all the disadvantages that would result; we did it because it seemed the only way to get the Freiburg method established in this country.

For we know full well that as you say, "the well known morphine scopolamine hypodermic anesthesia—was curtly discussed and dismissed in a dozen lines in our textbooks of five years ago" and we wondered if it was not a national rather than a professional idiosyncrasy that the doctors of America should "curtly dismiss" it while in Germany there were doctors who painstakingly and cautiously worked out the testing of the dose until they reduced it to the point where it was safe as well as pain saving. The fact you mention, namely, that tablets of the combined drug have a steady sale in this country, seems to have little relevancy to the question of the expert tests of the patient's state of consciousness in the Freiburg Frauenklinik. It is the Freiburg *results*, not the indiscriminate use of the drug, that we advocate; and I was interested to learn from the laboratories of the Public Health Service that there are no tests made of the commercial preparations of scopolamine sold in this country.

Your statement that our descriptions were done in a "highly journalistic style" hardly seems to me a fair comment on an article that was carefully written in good faith, gauged to the understanding of the lay mind and passed

upon in manuscript by several American physicians of repute. Were you at all familiar with the technic of professional writing—and doctors may perhaps be excused from any knowledge of the technic of other professions, though those of us who belong to less high callings need a good deal of such equipment for the maintenance of our general intelligence—you would know that the possibilities of "journalese" in this subject in the hands of ignorant or unscrupulous people are appalling to contemplate, and that they have not been remotely touched in our article.

And may I say that those of us whose sole object in introducing the Freiburg method to a lay American audience is due to our desire to see some first class hospital here equip itself with obstetricians adequately trained at Freiburg, greatly deplore the idea of irritating the medical profession? Yet I believe that the history of the profession shows that no new practice of any kind has ever been injected into it, whether of the nature of a discovery or, as in this case, a new adaptation of something well known, without meeting with a great deal of opposition.

Furthermore, my association of a number of years with the big public health movements in which the doctor and the layman meet, has shown me that the members of the medical profession are, like the members of all other professions, responding to the changing spirit of the times; that the day is passing when professional knowledge and individual professional integrity are all we should ask of the doctors; that the day is coming when their sins of omission shall be judged as severely as their sins of commission—and both according to their effect, not only upon the individual patient, but upon the welfare of society.

And so we are beginning to have high hopes that the opinion of the intelligent layman on medical subjects may yet have a respectful hearing; and that when the question arises as to whether it is worth while for hospitals to go to infinite difficulty and expense to introduce a method of painless childbirth, that it will be recognized as a subject in which the mothers are even more intimately concerned than the obstetricians, and that it is therefore just and proper that it should be laid before the mothers of the nation. CONSTANCE D. LEUPP.

[The sublime simplicity—not to give it a less polite name—of this letter, speaks for itself. We suppose we are to look forward to committees of "intelligent laymen" busying themselves in the examination of attractive and *ad captandum* medical divagations in Germany and elsewhere and subsequently returning to this benighted country to force upon the medical profession their valuable scientific conclusions. We anticipate a joyous future for the medical profession in America with the weird Federal and State legislation now in process of incubation in lay minds and this new departure of the popular periodicals. "Journalese" may have been avoided in this painless childbirth screed, but few readers will maintain that it was not an *ex parte* account of the ancient Freiburg method. To the end of time, doubtless, the laity will favor the profession with medical theories, without bothering to get beforehand even a smattering of physiology, although they would not instruct astronomers, for example, in their profession before looking into an elementary treatise on trigonometry. —EDS.]

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

The Principles and Practice of Medical Hydrology. Being the Science of Treatment by Water and Baths. By R. FORTESCUE FOX, M. D. (Lond.), Late Hyde Lecturer on Hydrology, Royal Society of Medicine. London: Henry Frowde (London University Press) and Hodder & Stoughton, 1913. (Through New York Branch of Oxford University Press.) Pp. xiv-295. (Price, $2.)

To the science of health, as well as to that of disease, hydrology is an indispensable supplement. One of the objects of this work is to show that the action of water cannot be understood and appreciated, except in relation to physical agencies. In many points in which Dr. Fortescue Fox has departed from the narrow doctrine of hydrotherapeutists, he justifies his precepts with a careful definition. "Medical hydrology is the science of waters, vapors, and mineral or organic deposits in connection with waters, as used in medicine, both by internal administration and in the form of baths and applications." In other words the science of water as it ought to be, must be based on that of water as it is. The author suggests still higher applications of the same agent; he discusses the effects of radioactive substances, of dissociation, of colloid ferments. Neglect of these subjects, it is acknowledged, has been the weak side of hydrotherapeutics so far. In hydrology, as in hydrotherapy, questions of physics meet us at every stage of our course, and the value of any system of hydrology must ultimately be tested on physical grounds. Doctor Fox begins with the functions of the skin, bodily heat, and the use of baths in health. Baths are classified into plus and minus, and the distinction, which we cannot dwell upon further, is one that should be carefully studied. There are suggestive chapters on the internal use of water, on the treatment of gout, heart, and nervous diseases. The parts on medicinal springs and spas are well worth notice. The style is brief for a medical work, and pleasant. A word of praise is also due to the excellent print and paper.

Practical Pathology. Including Morbid Anatomy and Post Mortem Technique. (The Edinburgh Medical Series.) By JAMES MILLER, M. D., D. Sc., F. R. C. P. E., Lecturer on Pathology and Bacteriology, School of Medicine of the Royal College, Edinburgh, and Edinburgh School of Medicine for Women; Examiner in Pathology, University of Aberdeen and Royal College of Physicians, etc. New York: The Macmillan Company. 1914. Pp. xv-444. (Price, $2.50.)

In this comparatively small volume, the author has included a large amount of information presented in a clear and concise manner. The greater stress is laid upon the gross appearances, the microscopical being but little more than suggested. Enough, however, is given to refresh the memory. With the exception of a chapter on tumors, general pathology is not dealt with, the lesions of special tissues being presented in more or less detail. The illustrations are grouped at the end of the book, an arrangement that does not seem as satisfactory as having them in the text. They also do not come up to the high standard to which we have become accustomed in late years. An appendix contains descriptions of the laboratory methods that are more commonly employed. Altogether this book can be considered of distinct value.

A Reference Handbook of the Medical Sciences. Embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Writers. First and Second Editions Edited by ALBERT H. BUCK, M. D. Third Edition Completely Revised and Rewritten. Edited by THOMAS LATHROP STEDMAN, A. M., M. D. Complete in Eight Volumes. Volume Three: Illustrated by Numerous Chromolithographs and Six Hundred and Sixty-five Half Tone and Wood Engravings. New York: William Wood & Co., 1914. Pp. vi-930. (Price, $7.)

The first volume of the new edition of the Reference Handbook was noticed in our columns on April 5, 1913; the second volume on May 2d last; the third volume has just been issued, and begins with the article on chloroma and ends with that on embryology. The general plan is the same as that of the previous editions, and so needs no special comment. There are several new articles in this volume, among which we may mention as worthy of special notice the brief biographical notices by Dr. A. H. Buck, and the articles on the various medical congresses by Doctor Stedman and Doctor Preble, and on medical education by Dr. O. V. Huffmann. These articles are the chief distinguishing feature of this edition, compared with the two former editions. Other valuable articles are those on the asexualization of criminals and defectives, by J. E. Mears; criminology, by D. C. McMurtrie; care of cripples, also by D. C. McMurtrie. Other new articles are those on chyle, chylous accumulations, chyme, convalescence, diarrhea, and digestants, by Dr. A. L. Benedict, of Buffalo; on chylangioma and cirrhosis, by Dr. C. V. Weller, of Ann Arbor; on Huntington's chorea, clonus, superior colliculus, colony treatment of epileptics, and cretinism, by Dr. S. E. Jelliffe; on cryoscopy, by J. C. Roper, of New York; on climatotherapy, by E. O. Otis, of Boston; on colon bacillus

infection, by R. C. Kemp, of New York; on congenital dilatation of the colon, by L. E. La Fétra, of New York; on coma, coma vigil, ecstasy, and electrodiagnosis, by C. L. Allen, of Los Angeles; on complement, complement deviation or fixation, complementoid, and cutireactions, by R. G. Stillman, of New York; on the physiological action of cold, by E. Preble, of New York; on diabetes insipidus, by N. S. Davis, of Chicago; on diabetes mellitus, by H. O. Mosenthal, of New York; on physical diagnosis, by H. B. Hiatt, of Highpoint; on cytodiagnosis, by C. N. B. Camac, of New York; on congenital dislocations, by R. Whitman, of New York; on dreams, by W. A. White, of Washington. These are not the only new articles in the volume but may be mentioned as among the most valuable and interesting. The article on dietetics of the sick is omitted, and that on disposal of the dead has been shortened.

Practical Sanitation. A Handbook for Health Officers and Practitioners of Medicine. By FLETCHER GARDNER, M. D., Captain Medical Corps, Indiana National Guard; First Lieutenant Medical Reserve Corps, United States Army; Health Commissioner of Monroe County, Indiana, and JAMES PERSONS SIMONDS, B. A., M. D., Professor of Preventive Medicine and Bacteriology, Medical Department, University of Texas; Lately Superintendent, Indiana State Laboratory of Hygiene. Illustrated. St. Louis: C. V. Mosby Company, 1914. Pp. 403. (Price, $4.)

The intention has been to provide a plain, nontechnical exposition of the duties of the health officer, a volume that will present the established views and methods in combating disease and provide a safe way for the health officer to meet any emergency that may arise. The authors are to be congratulated on having accomplished their desire in so satisfactory a manner. In the first part the question of epidemiology is thoroughly presented. Methods of isolation, quarantine, and disinfection are explained and the many diseases of importance from the sanitarian's point are reviewed. The second part deals with general sanitation under which heading are placed the organization of sanitary services, the inspection of buildings, animal and insect pest campaigns, sewage and garbage disposal, food inspection, etc. A brief third part touches on laboratory methods. Such a book as this can be recommended highly, not only to those who are concerned officially in sanitation, but to all physicians, who must constantly have the welfare of the community before them.

Interclinical Notes.

The *Dial* for June 1st is a feast for the doctor of literary tastes; among the good things is a review of H. G. Wells's latest book, by F. B. R. Hellems. Volumes VIII, IX, and X of the monumental Cambridge History of English Literature are carefully analyzed. It seems strange for a purely literary publication like the *Dial* to take sides in such a controversy as that over the Philippines, but far be it from us to lose our temper over anybody's political views; we object to *à priori* arguments, however.

* * *

We are seriously considering the advisability of giving up the daily papers and confining our reading, as far as contemporary events are concerned, to *Current Opinion*. There seems to be a great deal of important news that we do not find, somehow, in New York journals, news concerning European matters of moment, for example. Perhaps our city editors do not think we have brains enough to digest *Weltpolitik*, or Church and State questions, or the advance of socialism, or the way foreign business men beat us in export trade; or perhaps, on the other hand, we have stupidly overlooked the able discussions of these matters in our daily papers. At all events, we enjoyed the June issue of *Current Opinion* as much as if there was never a daily paper in the world.

* * *

In the June *Current Opinion*, the anxious reader will find remarks on the aggressive Puritanism of George V, on the awakening to sex matters caused by the new psychoanalysis, on the serious sex problems of plants caused by a disease of bees, on the stimulus which caused ecstatic visions on the part of saints, on the subconscious mind of the late Stephen Crane, on how the clock, even the common Connecticut horologe or anhydrous clepsydra, influences spiritual values, and beside these more or less scientific matters, a host of information on contemporary history, music, the drama, art, literature, finance and industry, and prominent individuals. All this matter is most interestingly condensed and expressed. To read news written with the genuine literary touch is a great treat, and the editor takes pains to be impartial.

* * *

An able and interesting paper in the *Popular Science Monthly* for June, is The Need for a Salaried Medical Profession, by Professor Paul L. Vogt. The views expressed are similar to those so often voiced in these columns, to the effect that ultimately the State will have to take over the matter of the public health. Where Professor Vogt differs from us is in his opinion that "the transition from a fee to a salary system of payment for medical service would not necessarily eliminate private practice. Those wishing the services of a private physician could secure the same at a rate based on value of services actually rendered. The existence of public schools has not eliminated private schools from the educational system. Neither has the public school system resulted in less consecrated service to the public welfare than was rendered by the private school. Neither should a salaried medical profession be less consecrated to its work than one rewarded by fees."

Meetings of Local Medical Societies.

MONDAY, *June 15th.*—New York Academy of Medicine (Section in Ophthalmology); Medical Society of the County of Erie; Elmira Clinical Society.

TUESDAY, *June 16th.*—Medical Society of the County of Kings; Binghamton Academy of Medicine; Syracuse Academy of Medicine; Ogdensburg Medical Association; Oswego Academy of Medicine.

WEDNESDAY, *June 17th.*—Medicolegal Society, New York; Buffalo Medical Club.

THURSDAY, *June 18th.*—Auburn City Medical Society (annual); Geneva Medical Society; New York Celtic Medical Society.

FRIDAY, *June 19th.*—New York Academy of Medicine (Section in Orthopedic Surgery).

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending June 3, 1914.

Frost, W. H., Passed Assistant Surgeon. Granted one day's leave of absence, May 31, 1914, under paragraph 193, Service Regulations. **Guiteras,** G. M., Surgeon. Granted two days' leave of absence, May 30 and 31, 1914. **Herring,** R. A., Passed Assistant Surgeon. Granted five days' leave of absence from June 1, 1914. **Hurley,** J. R., Passed Assistant Surgeon. Detailed in addition to other duties to assume the position of superintendent of hygiene and sanitation exhibits in the Departments of Education and Social Economy of the Panama-Pacific International Exposition. **Mullan,** E. H., Passed Assistant Surgeon. Directed to proceed to Baltimore, Md., about June 2, 1914, for the purpose of assisting Surgeon J. A. Nydegger in the examination of 1,700 aliens due to arrive about that time; granted ten days' leave of absence on account of sickness, from May 12, 1914. **Neill,** M. H., Assistant Surgeon. Granted six days' leave of absence, from May 26, 1914, under paragraph 195, Service Regulations. **Nydegger,** J. A., Surgeon. Detailed to represent the service at the annual meeting of the Medical and Chirurgical Faculty of Maryland at Baltimore, Md., May 28 to 30, 1914. **Rucker,** W. C., Assistant Surgeon General. Detailed to attend a meeting of the Surgeon's Association of the Baltimore and Ohio Railroad at Washington, D. C., June 18 to 20, 1914, and deliver an address on the subject of railway sanitation; thereafter to proceed to Charleston, S. C., and deliver an address before the graduating class of the Medical Department of the University of South Carolina, June 4, 1914. **Smith,** J. H., Jr., Assistant Surgeon. Directed to report to the superintendent, School of Instruction, Fort Trumbull, New

London, Conn., for duty on the Revenue Cutter *Itasca*, during the summer practice cruise. **Sundwall,** John, Assistant Surgeon. Directed to proceed from Lawrence to Rosedale, Kansas, in time to deliver lectures before the Annual School of Health Officers of Kansas, June 8 to 10, 1914, on the subject of pellagra; thence to Washington, D. C., and report to the director of the Hygienic Laboratory for duty. **White,** M. J., Surgeon. Directed, at the request of the State Board of Health of Kansas, to attend the annual conference of health officers to be held at Rosedale, Kansas, during the week beginning June 8, 1914, for the purpose of delivering a series of lectures on public health subjects.

Board Convened.

Board of commissioned medical officers convened to meet at Washington, D. C., May 28, 1914, for the purpose of making a physical examination of Surgeon C. P. Wertenbaker. Detail for the board: Assistant Surgeon General W. G. Stimpson, chairman, Passed Assistant Surgeon A. M. Stimson, member, Passed Assistant Surgeon J. P. Leake, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers in the Medical Corps of the United States Army for the week ending June 6, 1914:

Bastion, Joseph E., Captain, Medical Corps. On his arrival in the United States will report to the commanding officer, Fort Porter, N. Y., for duty. **Bingham,** E. G., Captain, Medical Corps. Ordered to report for duty on the transport *Buford* about June 15th, for trip to Alaska, and on return to report to his proper station. **Clark,** Frederick E., First Lieutenant, Medical Reserve Corps. Relieved from active duty at Fort Ethan Allen, Vt., and will report to his home, and on arrival there will stand relieved from active service in the Medical Reserve Corps. **Dool,** Thomas P., First Lieutenant, Medical Reserve Corps. Ordered to active service in the Medical Reserve Corps, and has reported for duty as surgeon on the United States transport *San Marcos*, Galveston, Texas. **Harden,** R. DuR., First Lieutenant, Medical Reserve Corps. Reports his departure from Atlanta, Ga., en route to Fort Monroe, Va., for duty. **Kirkpatrick,** T. J., Major, Medical Corps. Ordered to State Military Reservation, Niantic, Conn., for duty July 11th to 18th inclusive. **McNeil,** Irving, First Lieutenant, Medical Reserve Corps. Relieved from duty in the Southern Department, and ordered to proceed to his home for relief from active duty. **Pierson,** Robert H., Captain, Medical Corps. Relieved from duty at Fort Gibbon, Alaska, on the arrival of Captain Albert G. Love, Medical Corps. **Ruffner,** Ernest L., Major, Medical Corps. Relieved from duty with the Second Division, Texas City, Texas, and from duty at Fort Missoula, Mont., and will proceed to Fort Thomas, Ky., to organize and command Evacuation Hospital No. 2. **Wadhams,** Sanford H., Major, Medical Corps. Relieved from station at Albany, N. Y., and will proceed to New York City for duty with the organized militia, New York.

The following officers of the Medical Reserve Corps, graduates of the Army Medical School, have been granted ten days' leave of absence: Walter P. Davenport, W. C. von Kessler, Harry N. Kerns, John M. Pratt, Robert H. Wilds, Alexander W. Williams, Louis H. Bauer, William W. Vaughan, Herbert I. Harris, Charles L. Gandy, William G. Guthrie, Lanphear W. Webb, Jr., John B. Anderson, all being First Lieutenants.

The following named officers of the Medical Reserve Corps are relieved from duty at the Army Medical School, Washington, D. C.; after the expiration of their leave will report to the Commanding General, Second Division, Texas City, for duty: First Lieutenants John B. Anderson, Fort Crockett, Texas; Louis H. Bauer, Fort Ethan Allen, Vt.; Coleridge L. Bevan, Fort Washington, Md.; Austin J. Canning, Plattsburg Barracks, N. Y.; Walter P. Davenport, Fort Sam Houston, Texas; Charles L. Gandy, Fort Myer, Va.; William G. Guthrie, Fort Riley, Kansas; Wilson C. von Kessler, Fort Niagara, N. Y.; E. Frederick Thode, Fort Porter, N. Y.; William W. Vaughan, Fort Myer, Va.; Lanphear W. Webb, Jr., Madison Barracks, N. Y.; Robert H. Wilds, Fort McPherson, Ga.; Alexander W. Williams, Washington Barracks, D. C.

The following named officers of the Army Medical School are relieved from duty on the expiration of the leave granted them and will report as follows: First Lieutenant John M. Pratt, Medical Reserve Corps, Fort Clark, Texas; First Lieutenant John H. H. Scudder, Medical Reserve Corps, Fort Bliss, Texas; First Lieutenant Harry N. Kerns, Medical Reserve Corps, Fort Baker, Cal.

Births, Marriages, and Deaths.

Married.

Brown—Houston.—In Philadelphia, on Wednesday, June 3d, Dr. Henry Paul Brown, Jr., and Miss Edith Corlies Houston. **Krick—Schaffer.**—In Hazleton, Pa., on Thursday, May 28th, Dr. George Krick, of Reading, Pa., and Miss Bessie B. Schaffer. **Luse—Minear.**—In Council Bluffs, Ia., on Tuesday, May 26th, Dr. Ralph Luse, of Camanche, and Miss Pearl Minear. **Truesdell—Norton.**—In New York, on Wednesday, June 3d, Dr. Eduard Delavan Truesdell and Miss Henrietta Norton.

Died.

Alcorn.—In Pittsburgh, Pa., on Monday, May 25th, Dr. J. Frank Alcorn, aged forty-four years. **Baker.**—In Lynn, Mass., on Wednesday, May 27th, Dr. L. M. Baker, aged forty-five years. **Barney.**—In Milford, N. Y., on Tuesday, May 26th, Dr. Charles S. Barney, aged fifty-five years. **Benedict.**—In Macon, Ga., on Monday, June 1st, Dr. Samuel C. Benedict, aged fifty-eight years. **Cooper.**—In Shillington, Pa., on Wednesday, May 27th, Dr. Joseph Cooper, aged sixty-six years. **Davie.**—In Angelica, N. Y., on Tuesday, May 26th, Dr. F. C. Davie. **Day.**—In Dallas, Texas, on Sunday, May 24th, Dr. E. L. Day, aged sixty-three years. **Dean.**—In Seattle, Wash., on Saturday, May 23d, Dr. Thaddeus Joseph Dean, aged seventy-eight years. **Duncan.**—In Leesburg, Ga., on Friday, May 29th, Dr. A. B. Duncan, aged sixty-seven years. **Eberhard.**—In Philadelphia, on Friday, May 29th, Dr. J. O. Eberhard, aged sixty-three years. **Enloe.**—In Nashville, Tenn., on Tuesday, May 26th, Dr. Thomas E. Enloe, aged sixty-nine years. **Flagg.**—In Worcester, Mass., on Friday, June 5th, Dr. Samuel Flagg, aged ninety-three years. **Gamson.**—In Brooklyn, N. Y., on Saturday, May 30th, Dr. Emil Gamson, aged forty-four years. **Gates.**—In Delhi, N. Y., on Saturday, May 23d, Dr. Henry A. Gates, aged sixty-five years. **Hobson.**—In Cleveland, Ohio, on Monday, May 25th, Dr. James Hobson. **Hogeboom.**—In New York, on Tuesday, June 2d, Dr. James L. Hogeboom, aged eighty-four years. **Hopkins.**—In Fresno, Cal., on Monday, May 25th, Dr. Henry St. George Hopkins, aged seventy-nine years. **Hosmer.**—In Summit, N. J., on Tuesday, June 2d, Dr. George W. Hosmer, aged eighty-four years. **Kellar.**—In Hot Springs, Ark., on Wednesday, May 27th, Dr. J. M. Kellar, aged eighty-six years. **Mason.**—In Albany, N. Y., on Friday, June 5th, Dr. Amos L. Mason, aged seventy-two years. **Mitchell.**—In Hockessin, Pa., on Friday, May 29th, Dr. Taylor S. Mitchell, aged sixty-one years. **Norris.**—In Parkton, Pa., on Saturday, May 23d, Dr. R. R. Norris. **Nottingham.**—In Lansing, Mich., on Tuesday, May 26th, Dr. Bret Nottingham, aged thirty-seven years. **Nutt.**—In Williamsport, Pa., on Saturday, May 30th, Dr. George D. Nutt, aged seventy years. **Porter.**—In Louisville, Ky., on Thursday, May 28th, Dr. Ellis S. Porter, aged sixty-two years. **Quales.**—In Chicago, Ill., on Saturday, May 23d, Dr. Niles T. Quales, aged eighty-three years. **Ryan.**—In Philomont, Va., on Monday, May 25th, Dr. Bernard Ryan, aged thirty-seven years. **Schmidt.**—In Brooklyn, N. Y., on Friday, June 5th, Dr. Charles H. D. Schmidt. **Stewart.**—In Elmira, N. Y., on Monday, May 25th, Dr. John W. Stewart, aged sixty-three years. **Stoddart.**—In Lake Mohonk, N. Y., on Sunday, May 31st, Dr. William Stoddart. **Tebault.**—In New Orleans, La., on Sunday, May 24th, Dr. Christopher Hamilton Tebault, aged seventy-four years. **Tiel.**—In Beacon, N. Y., on Monday, June 1st, Dr. Arthur R. Tiel, aged sixty years. **Tolles.**—In Claremont, N. H., on Thursday, May 28th, Dr. Clarence W. Tolles, aged sixty-nine years. **Townsend.**—In London, England, on Wednesday, May 20th, Dr. Stephen Townsend. **Woodward.**—In Roland Park, Md., on Thursday, May 28th, Dr. James Savage Woodward, aged fifty-nine years.

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Original Communications.

A REPORT OF THE SCOLIOSIS CLINIC OF THE CHILDREN'S HOSPITAL, BOSTON.

From the Orthopedic Department of the Children's Hospital.

BY JAMES WARREN SEVER, M. D.,

Boston,

Junior Assistant Surgeon, Children's Hospital; Surgeon, House of the Good Samaritan.

In a previous paper (1) from this department, published in 1910, the author reported the work of the scoliosis clinic from the time of its separate organization, sixteen years before, to June, 1909. Since then the work has gone on in about the same way, and this paper is an attempt to put on record the methods which have been used and the results which have been obtained since 1909, together with a tabulation of all cases from 1903 to June, 1913. The conduct of the clinic has not changed, except for more thorough organization. As time goes on the wisdom of having made the clinic a separate one is more strongly emphasized, for its successful maintenance could never be accomplished in an ordinary orthopedic clinic, with the stress and rush of the daily routine.

There has been no change made in the number of days the clinic is open, that is, four days a week, although I think it would be better to have a daily clinic. The advisability of a summer vacation has been proved, not only for the children, but for the teachers. Our assistants are still senior students in Dr. Dudley A. Sargent's School for Physical Education, and this arrangement has proved to be of great mutual benefit. During the year lectures on the theory and diagnosis of lateral curvature are given to these assistants by the surgeon in charge of the clinic once every two weeks. These students are under the direct charge of the director of the scoliosis clinic, who supervises their work and gives instruction as to the proper treatment of each case. She also teaches certain facts and theories in regard to scoliosis, and shows the proper use of the necessary apparatus.

The number of applications for admission to the clinic has far exceeded our facilities, and we have to pick and choose from such applicants as seem in most urgent need of treatment. We have established a waiting list, from which we draw as occasion arises, and which today totals about 150. These cases are also available at any time for purposes of study and teaching. The total number of visits made to the scoliosis department from October, 1903, to July 1, 1913, was 38,684, with a daily average attendance of 32.15. The total number of cases treated was 1,090, of which 250 were boys and 840 were girls. The work which has been done will be described in the following order, with personal observations:

1. Postural deformities. 2. Functional or physiological scoliosis. 3. Deformities of the thorax: Pectus carinatum (chicken breast) and Pectus excavatum (funnel chest). 4. Structural scoliosis. 5. Treatment: Types and methods of treatment, removable and permanent jackets, and methods of application. 6. Congenital scoliosis: Spina bifida occulta. 7. Scoliosis due to infantile paralysis. 8. Empyema. 9. Statistics of types of cases with numbers in relation to age and sex from 1903 to June, 1913. (See Tables.)

POSTURAL DEFORMITIES.

Under this heading are grouped all cases of round and forward shoulders, round backs and round hollow backs. They are all treated by exercises four times a week in the clinic, supplemented in some few children who live at a distance by home exercises. As the cases tend to improve the frequency of attendance at the clinic is cut down and the patients report for observation only at various definite intervals. Some cases of the more severe type have a light steel and leather back support applied to help maintain the upright position, which has been found of great assistance.

It has been noted that with the knowledge and assumption of a correct standing position the patients' faces change accordingly, that is, often a dull apathetic child, with a faulty standing position, will, after a few months of setting up work, not only stand up straight, but will look alert, and the whole facial expression will have changed. Mentality in these postural cases apparently has a good deal to do with the ability to stand erect, and with the acquiring of this ability, the whole individual's aspect changes. Children, whose mentality for various reasons is below par, who cannot be reached through pride, as a rule never do well; efforts in their behalf end in a poor result, no matter what measures have been used to stimulate and correct them. This has been noted many times, and is most striking, especially when many children are observed for long periods. A more detailed definition of these postural deformities follows:

Round back. This means an increase backward of the normal dorsal convexity of the spine: generally associated with forward shoulders.

Round hollow back. This is the same as a round

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Fig. 1.—Back view, physiological scoliosis, before treatment.



Fig. 2.—Back view, same as Fig. 1, after nine months' treatment by exercises alone.

back, with the additional element of an increase forward of the normal lumbar lordosis.

Forward shoulders. This means that the condition of forward or dropped shoulders is the predominant element in the case, and that the usual anteroposterior physiological curves of the spine are practically normal. See Table I for figures.

Table I.

From October, 1903, to June, 1913.

Total number of round backs	89
Boys	22
Girls	67
Total number of round hollow backs	18
Boys	7
Girls	11
Total number of forward shoulders	39
Boys	16
Girls	23



Fig. 3.—Round shoulders, side view, before treatment.



Fig. 4.—Same as Fig. 3, eighteen months later; treatment by exercises alone.

2. FUNCTIONAL, FALSE, OR PHYSIOLOGICAL SCOLIOSIS.

The examination of a child with a physiological scoliosis shows that it stands, first, with a greater part of the trunk displaced to one side or the other of a plumb line erected from the fold of the buttocks. This displacement of the trunk is, in ninety per cent. of the cases, to the left. The curve of the spine is also to the left, the left shoulder is higher than the right, and the right side of the thorax is carried back on account of the physiological rotation of the vertebræ toward the concavity of the curve, which carries the ribs back on the right side and so displaces that side of the thorax and shoulder girdle backward on the right. When the patient lies prone on a table the physiological curve disappears, which is not true of a structural curve. Finally, physiological curves are always single or total curves, in contradistinction to the generally double curve seen in structural cases, although single curves of structural type may and do exist, with the rotation, however, on the convex and not on the concave side.



Fig. 5.—Side view of case of pectus excavatum (funnel chest).

These physiological curves, being postural or functional in character, need nothing more than exercises and setting up drills for their cure, with the occasional correction of a short leg or a pronated foot. Braces and jackets are distinctly contraindicated, for the reason that, as these curves occur usually in poorly developed and nourished children, who are poorly muscled, jackets and braces generally induce further atrophy and delay the correction rather than hasten it. On the other hand, apparatus may be used for short periods as a mental check in exceptional cases where the child is distinctly below par physically.

The exercises should be given daily if possible, rest periods should be instituted, overwork at home and at school should be prevented, and the clothing, especially such as is supported from the shoulders, like the waist and garters, should be changed. This routine also holds true in regard to the postural deformities previously mentioned. Round garters should be used, and the necks of the waists should be narrowed so that the pull of the clothing attached to the waist should come near the base of the neck and not out at the tip of the shoulder girdle. Garters and underclothing may sometimes be attached to a belt around the hip and pull from there rather than from the shoulders. As young children have small hips, this arrangement is not always satisfactory.

The eyes should be examined for visual errors, which should be corrected. The gymnastic work should be about a half hour in length, and theoret-



Fig. 6. Front view of case of pectus excavatum (funnel chest).



Fig. 7. Back view of Fig. 6, showing structural scoliosis.

ically is better done individually than in a class. This we have always done until recently, when we changed to class work on account of our large attendance in the clinic. The prognosis for a complete cure is good if the gymnastic work is adequate and properly carried out, together with a proper supervision of the clothing, although it has been found that in an effort to balance themselves a certain number of these children go on to acquire structural deformities of the spine (1). (See Figs. 1 to 4, two cases of left physiological scoliosis with round back and forward shoulders, before and after treatment, covering a period of about sixteen months by exercises alone. See also Table II.)

Transitional curves. A transitional curve is one which presents no definite characteristics of either a functional or a structural curve, but does present certain characteristics common to both types. An analysis of the various factors does not permit of classification, either as a physiological curve or as a structural one, so therefore it is called a transitional curve. Transitional curves occur usually when a curve is in a process of transition from functional to structural.

TABLE II.

Total number functional scoliosis	204
Left total functional	247
Boys	69
Girls	178
Right total functional	17
Boys	3
Girls	14
Transitional cases	31
Boys	10
Girls	21

3 DEFORMITIES OF THE THORAX.

Pectus carinatum (chicken breast). A good many children are seen with this deformity, varying a good deal in character and severity. The thorax appears to be pressed together from the sides so that the sternum and ribs are projected forward. In some cases the deformity is not a symmetrical one, and the ribs on one side are distinctly more prominent than on the other, and the deformity seems to be limited to the ribs rather than to the sternum. The deformity is usually not severe, and may in some instances be helped by breathing exercises and general setting up work. Counterpressure on the sternum or ribs during the breathing exercises, with the patient lying on a table on the back, may be found to be of use. This may be done with sandbags or counterpressure by the flat of the hand.



Fig. 10.—Structural scoliosis before treatment.



Fig. 11.—Same as Fig. 10, after [illegible] exercises and removable jackets.



Fig. 8.—Structural scoliosis before treatment.



Fig. 9.—Same as Fig. 8, after one and a half years' treatment by means of exercises and removable jackets.

Pectus excavatum (funnel chest). By this deformity is meant a caving in of the anterior chest wall, usually limited to the breast bone itself with its attached ribs. The deepest point is usually in the region of the middle portion of the sternum, and may extend downward, involving the xiphoid cartilage, which, however, in a certain number of cases escapes, and protrudes rather than recedes. This deformity also presents varying grades of severity, and in its milder states is not at all uncommon. When marked, it presents a most severe and distressing deformity, leading to difficulty in respi-

ration and circulatory embarrassment from displacement of the heart. It may be due to rickets, but is usually congenital. Shoemakers have been known to have it from constant pressure of an instrument against the breast bone.

The severe cases are very apt to be accompanied by a greater or less degree of structural scoliosis, which rather tends to increase than diminish, even under satisfactory treatment. (See Figs. 5, 6, and 7.) The treatment has always been most discouraging and unsatisfactory. Forced breathing exercises are about all one can advise; that such a severe deformity can exist and persist challenges one and all to devise some surgical and mechanical means for its relief and correction.

4. STRUCTURAL SCOLIOSIS.

From October, 1903, to June, 1913, there have been treated at the scoliosis clinic 460 cases of structural scoliosis, which may be studied in detail



FIG. 12.—Before treatment, structural scoliosis.

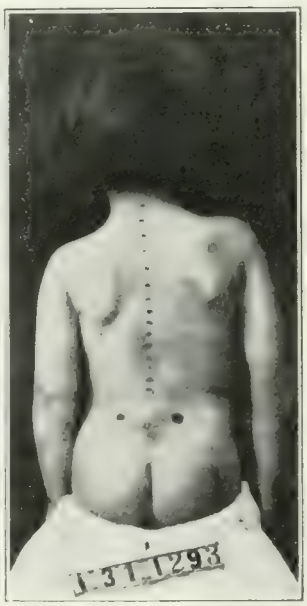


FIG. 13.—Same as Fig. 12 after two months' treatment by permanent jackets in erect position.

in reference to the different types in Table III as follows:

TABLE III.

STRUCTURAL SCOLIOSIS.

	Boys.	Girls.	Total.
Right dorsal	5	15	20
Left dorsal	7	23	30
Right dorsolumbar	8	43	51
Left dorsolumbar	12	61	73
Left lumbar	1	5	6
Right dorsal, left lumbar plus right dorsal, left dorsolumbar	28	137	165
Left dorsal, right lumbar plus left dorsal, right dorsolumbar	5	30	35
Right cervicodorsal, left dorsal, right lumbar	11	34	45
Left cervicodorsal, right dorsal, left lumbar	7	28	35
			460

Short leg. The question of a short leg being a cause of scoliosis has often arisen in various discussions on the subject, and at present I believe the feeling is that a short leg has very little in general to do with the actual cause. That it may



FIG. 14.—Girl aged nine, structural scoliosis.



FIG. 15.—Same as Fig. 14 after one months' treatment in a permanent jacket applied with head traction in the erect position; now wearing a removable jacket and doing exercises.

make for a bad posture is evident, as well as the necessity in almost every case for its correction by a lift. There are a certain number of cases, however, which are not benefited, but made distinctly worse by making the legs of equal length. This can be ascertained, however, only by adding blocks under the short leg and observing the effect on the posture, displacement, and deviation of the spine.

The measurements for the length of the legs is made with the patient in the usual standing position with the shoes off, and are obtained with a graduated upright with a sliding bar on it which is placed opposite the marked anterior superior spine of the ilium; a reading is made. This is done twice so as to be sure of reasonable accuracy. It is obvious that flat or pronated feet need correction in these cases, and a badly pronated foot on one side will, after correction by pad or plate, often tend to restore the case to normal balance. The following



FIG. 16.—Structural scoliosis, before treatment, age 14.



FIG. 17.—Same as Fig. 16, four months later, after one permanent jacket applied with head traction, in the erect position.



FIG. 18.—Same as Fig. 19, showing rotation of ribs on right in forward bent position.



FIG. 19.—Same as Fig. 17. Note practical absence of rotation after removal of first jacket at end of four months.

table shows in detail how little in general a short leg influences posture in these cases from June, 1909, to July, 1913.

TABLE IV.

SHORT LEG.

	Right	Left
Postural cases	9	3
Left total functional	16	20
Right total functional	1	0
Transitional	5	5
Right dorsal	0	1
Left dorsal	0	2
Right dorsolumbar	3	4
Left dorsolumbar	2	4
Left lumbar	1	0
Right dorsal left lumbar plus right dorsal, left dorsolumbar	8	12
Left dorsal right lumbar plus left dorsal, right dorsolumbar	0	2
Right cervicodorsal, left dorsal, right lumbar.	3	4
Left cervicodorsal, right dorsal, left lumbar.	7	10
Total	55	67—122

In my previous paper there were 177 cases of functional scoliosis which were analyzed in regard to the occurrence of a short leg, and thirty-seven were found to have one, of which eighteen were on the right and nineteen on the left. The difference in length was therefore about evenly distributed, and apparently affected the curve in no way (1).

5. TREATMENT.

In discussing the treatment of structural scoliosis, we must bear in mind that there are several types, namely, slight, moderate, and severe. These will be discussed in order. No discussion of the pathology will be entered into, except to state that structural scoliosis implies a change in the shape and structure of the vertebræ and ribs, due to definite bony and soft part changes, and resulting in a fixed deformity, with a twisting of the vertebral bodies in each curved region toward the convexity of that curve, and with a backward deformity of the ribs in the corresponding region. Changes to a corresponding degree take place in the viscera, and the whole problem of treatment is essentially much more difficult to solve than in the cases of functional or physiological lateral curvature.



FIG. 20. Congenital structural scoliosis. X ray shows many missing and fused ribs.

Slight cases. In the slight cases of structural lateral curvature it has been the custom to give the child such flexibility exercises as were needed at first to make the spine limber, and then to give exercises, asymmetrical in character, which would tend to correct the spinal deformity. These exercises were carried out at least four times a week, if possible, and the child was kept under close observation. If no progress was made, then a removable jacket was applied and the exercises were continued.



FIG. 21. [illegible] shows hypertrichosis and spina bifida occulta.

Moderate types. The routine treatment in the cases of moderate structural scoliosis is best carried out by jackets, removable or permanent, either with or without exercises. A moderate case implies one where there is a single or double curve, with moderate rib deformity and vertebral changes shown by the x rays. These jackets, which are usually of the removable type, are made from remodelled plaster torsos, from a cast taken of a patient in the erect position, with head extension, which to my mind gives the best corrected position as a basis for all further corrective work of this kind. The original jackets are applied without any padding so as to get a snug skin fit, and great care is taken to get an accurate pelvic fit. These jackets are then cut off the patient, and poured with plaster cream, giving one a solid plaster torso, which is then further corrected by shaving off on the side of the rotation and adding, if necessary, over the concavities, although this latter is not necessary, if there are to be windows in the jacket.

Their power of extension may be made still more efficient by cutting them in two at the waist and setting the halves apart, according to the amount of the patient's flexibility. A check is kept of the efficiency of these jackets by means of frequent measurements of the patient's height. Four measurements are recorded, as follows: 1. Best standing position out of jacket. 2. Height with



FIG. 22. [illegible]

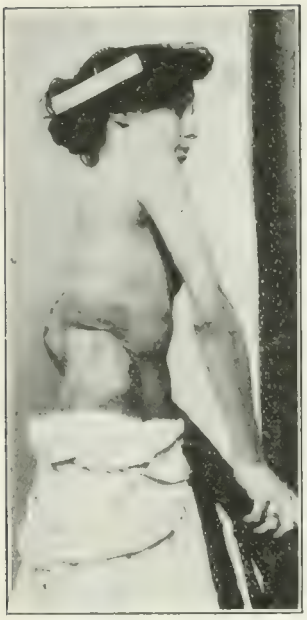


Fig. 23.—Side view of structural scoliosis due to infantile paralysis.

hands on hips pushing up out of jacket (limit of flexibility). 3. Height in jacket. 4. Height pushing up in jacket. If a case is held at the limit of flexibility in the jacket, as shown by comparing the height record pushing up out of the jacket with the height record as held in the jacket, that is all one can expect to do at that time and until exercises make the case more flexible and allow better correction. When that time arrives the flexibility must be taken up by padding the jacket over the areas of rotation, and later by a new jacket, following a further remodelling of the torso.

In general, it may be stated that a jacket is not really efficient after six weeks, provided the patient is doing exercises regularly and gaining. Also too many remodellings of the original torso lead to poorly fitting jackets, and one gets further and further away from an accurate fit for the patient. It is really better to make a new torso for each new jacket, and if that cannot be done, then to make only two jackets to a torso. Jackets must be worn at least two years to lead to permanent and successful results, and should then, if necessary, be followed by some sort of a mild retentive apparatus, such as a brace, leather jacket, or reinforced corset, for as long a period as seems necessary.

The total number of individuals who had removable jackets applied from 1909 to July, 1913, was fifty-five, for whom there were made and applied 176 removable jackets. The results shown in these cases were as follows (see Figs. 8, 9, 10, and 11):

Cured	2
Marked improvement	15
Moderate improvement	28
No change	10

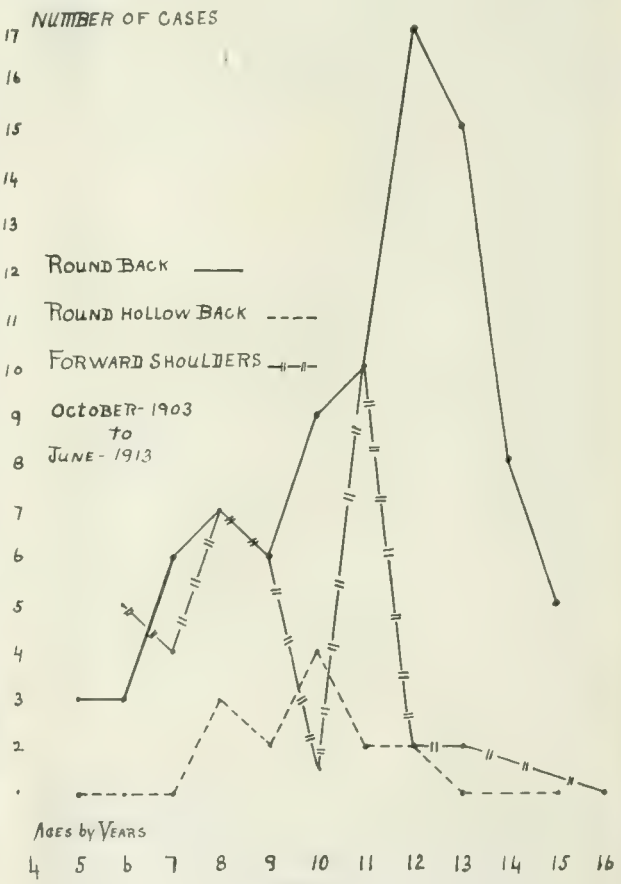


Fig. 25

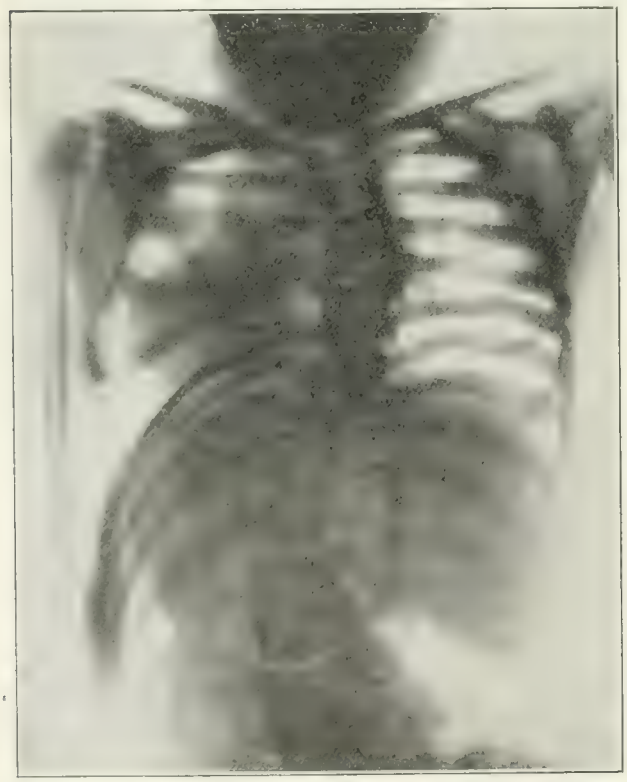


Fig. 24.—X ray of Fig. 21.

In regard to this method, it might be stated that the results are no more than would be expected under a treatment which is at the best not very severe or constant in its corrective force. The jackets buckle in the front, and can be easily loosened by the patient, if too tight, and although they are supposed to be worn at night as well as during the day, there is no possibility of enforcing this rule. Any force to be really corrective must be rigid, constant, and direct in its application, and one cannot accomplish this with this type of jacket. The method is suitable only for the slight and moderate cases, where restoration to symmetry can be accomplished quite as well in many cases by this method as by that one which implies the use of a permanent jacket, and it represents in many cases, both hospital and private, a method of compromise. The

jackets in many cases have windows cut over the concavities, both behind and in front, and are furnished with a shoulder pad to hold back the drooping shoulder.

Treatment of severe structural scoliosis and cyphoscoliosis. Severe structural scoliosis is not of infrequent occurrence, and from January, 1909, to July, 1913, there have been 143 children at the clinic on whom 214 permanent jackets have been applied. During the last few years the problem of the treatment of structural lateral curvature has received considerable attention, and several new

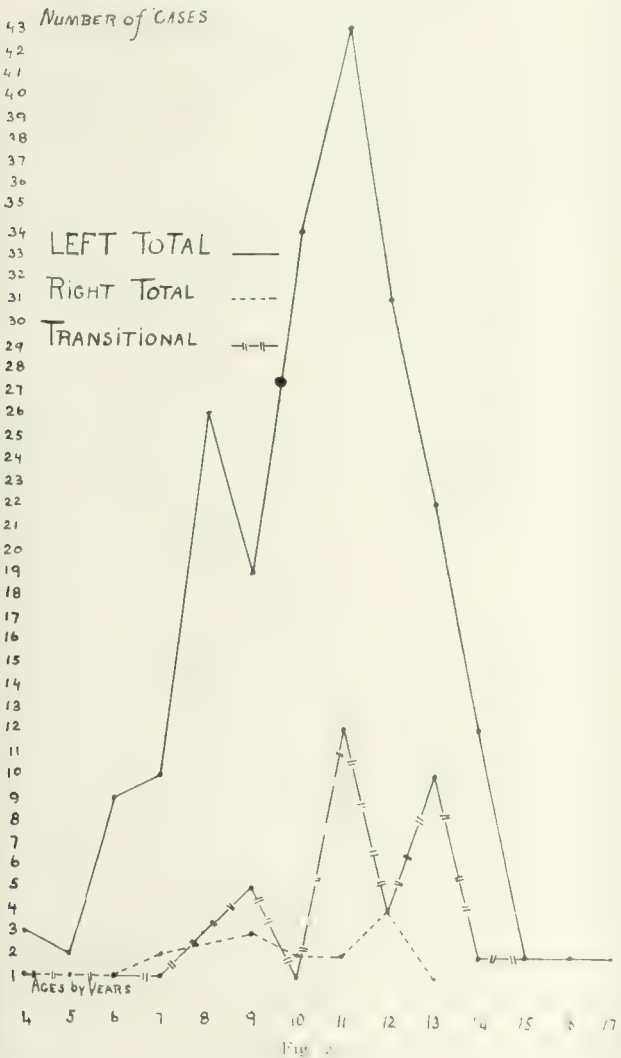


Fig. 2.

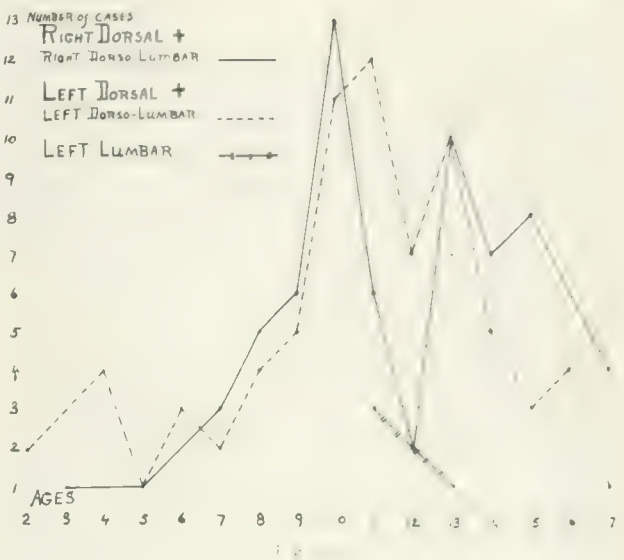


Fig. 3.

methods of treatment have been advanced. The most prominent of these methods are those of Abbott,[1] of Portland, Me., and Forbes,[2] of Montreal, Canada. They both advocate the dorsally flexed position as offering the greatest freedom of rotation in the dorsal region, but each applies the corrective rotary forces in supposedly directly opposite ways. Abbott puts his patient on a hammock in a dorsally flexed position, and then applies a side pull to correct the deviation of the spine, and a rotary force to the high side of the chest in front to correct the rotation, the high shoulder on the side of the rotation being carried backward and downward and the low shoulder forward and upward. The jacket is then applied under considerable corrective force in this position, so that when the patient is erect he is standing in a forward flexed position. The application of these two forces, that is, the side pull and the rotary force, to my mind work directly against each other, and are distinctly wrong in principle.

Forbes uses the same method of dorsal flexion, but uses no pull to correct the lateral deviation, and no pull in front to correct the rotation, but depends on the pull of the muscles attached to the thorax and shoulder girdle to act as corrective rotary forces combined with the spring pressure of the ribs applied to the vertebrae through padding. He does this by forcing the forward and high shoulder backward, and the low shoulder forward, having first fixed the pelvis. In other words, he would rather twist the whole upper trunk backward against the deformity, than try to twist it forward in the direction of the deformity, as Abbott apparently does. The two methods are, at first thought, dissimilar, but

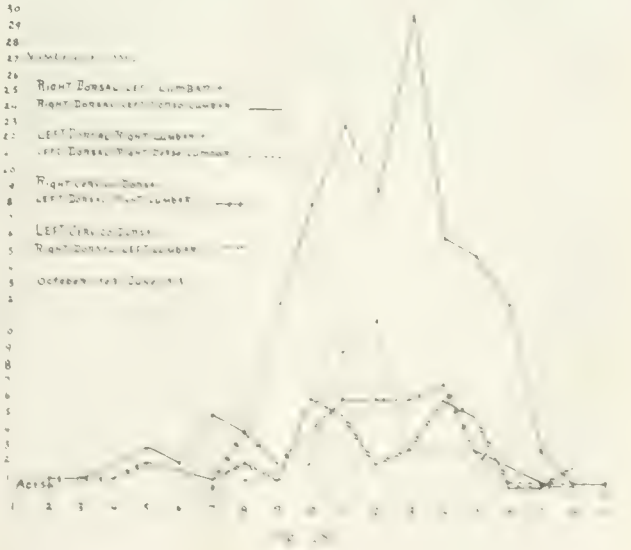


Fig. 4.

[1] See this JOURNAL for April 25, 1912.
[2] Ibidem, July 6, 1912.

the results so far as general experience goes are alike. A careful study of the two methods shows many points in common, and in the final practical analysis they are not very different. I have tried both with equal success, and although I have succeeded in remodelling the shape of the thorax by producing deformation of the ribs, there has been no great change in the vertebræ themselves, nor in the actual deviation of the spine. Large windows are cut over the concavities, and padding is inserted to exert pressure on the deformity as well as to maintain the flexed position.

The results are at the best disappointing, which may be due wholly to my technic of applying these jackets after the foregoing methods, but so far I have seen no particular advantage in either over and above the old method of applying a jacket in head suspension. It has been stated that the dorsally flexed position "unlocks" the articular processes of the dorsal vertebræ. This seems to me questionable, and has never been proved. Lovett has shown beyond question that rotation is the most free normal movement in the dorsal spine in the erect position, and is most free in that position above all others. Hence it must follow that the erect position gives one the best mechanical advantage to correct rotation by the proper application of pressure.

One serious objection to the dorsally flexed position is the invariable increase in the lumbar rotation, which necessitates other corrective procedures later. To be sure, I have been unable to give my patients the long continued ward residence combined with daily care and observations that Abbott does, and this factor may have something to do with my inadequate results by these methods. All cases have been treated as ambulatory ones. Displacement of the trunk and rotation of the ribs are the two elements which are most easily corrected. Deviation of the spine is most difficult to correct. In this series many cases have been considerably improved, but none has been cured. (See Figs. 12, 13, 14, 15, 16, 17, 18, and 19.)

As the result of experience, therefore, jackets are applied in the erect position, and padding is inserted once a week over the deformity through large windows cut behind and in front over the concavities. These jackets are worn from a month to four months, and then a new one is applied. When sufficient correction is obtained, a removable jacket is applied and exercises are begun to strengthen the patient's holding power, and the case is treated as cases in Class II.

6. CONGENITAL SCOLIOSIS.

Many cases of congenital scoliosis have been treated in the clinic. They are of all types and grades of deformity, but are usually severe. The severe cases are those which on x ray examination present missing and fused ribs, deficient and split vertebræ, and unfused spinous processes. A number of cases of spina bifida occulta are also seen, and these have been previously reported (4). The treatment is the same as of other cases of lateral curvature of the various types and degrees of deformity. (See Figs. 37, 38, 20, 21, and x ray Fig. 24.)

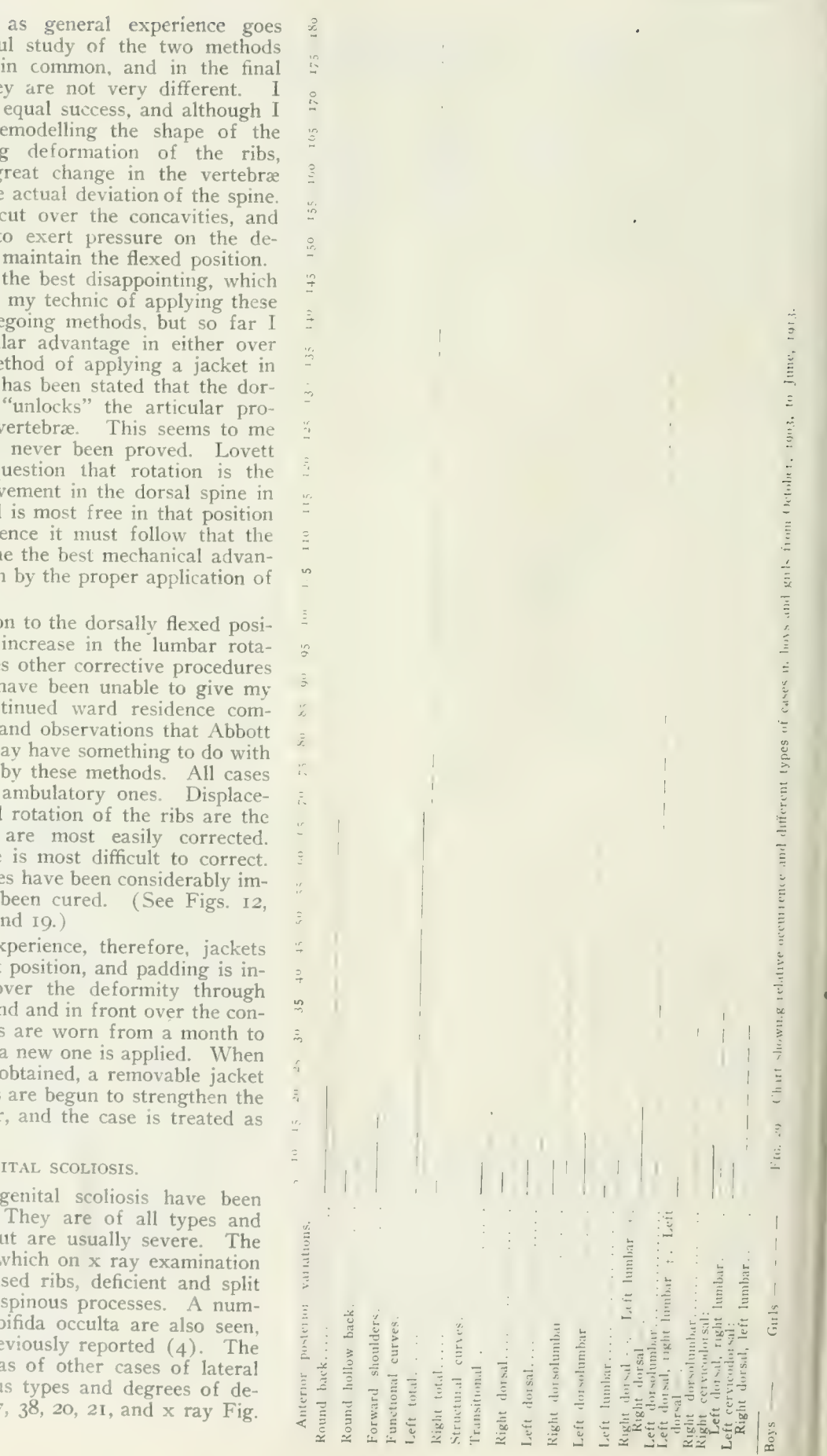


FIG. 29.—Chart showing relative occurrence and different types of cases in boys and girls from October, 1903, to June, 1913.

7. EMPYEMA.

Empyema is also a frequent cause of lateral curvature, owing to the contraction of the pleural scar following the rib resection for drainage. This scar formation has been found most persistent, and an obstinate cause of the deformity. Jackets and exercises seem to exert but temporary stretching effect on it, and as a rule the spine rarely becomes much straighter under treatment. Treatment, however, is most necessary to prevent progress of the deformity. (See Fig. 22.)

8. INFANTILE PARALYSIS.

Infantile paralysis always causes scoliosis when the trunk muscles have been involved, and some of the severest and most intractable deformities have been the result of this disease. The only thing that can be said, is that all cases of anterior poliomyelitis when any of the back muscles are involved should have jacket support from the very first to prevent severe deformity of the spine. These cases will always have some deformity, but any attempt to minimize it should be begun early. Jackets will probably always have to be worn. As a rule, the removable leather or plaster jackets are the more serviceable types. (See Fig. 23.)

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234 MARLBOROUGH STREET.

THE DETERMINANTS OF TABES.

BY WILLIAM J. M. A. MALONEY, M. D., CH. B., F. R. S., EDIN.,
New York,
Attending Neurologist, Central and Neurological Hospital.

In the United States Army, from 1908 to 1912 inclusive, there were twenty-one cases of locomotor ataxia and 11,904 cases of syphilis; so one case of locomotor ataxia was recognized for every 569 cases of syphilis which were detected. These figures merely emphasize that cases of syphilis are vastly more numerous than those of tabes; that *tabes, far from being an inevitable, is a rare sequel* of syphilis.

Wassermann proved that a certain substance elaborated especially by the lymphocytes may result from infection by the protozoon which causes syphilis, Spirochæta pallida. This substance is detectable in the blood and cerebrospinal fluid most commonly in cases of syphilis; but it is not detected in all cases of untreated syphilis, nor even in the same case of treated syphilis at all times. The presence of this substance may practically indicate syphilis, but its absence does not preclude syphilis, yet McKenzie and Fildes have found the Wassermann substance present in the cerebrospinal fluid in over ninety per cent., and Hauptmann and Nonne, by the *Auswertungs* method, have found it in 100 per cent. of cases of tabes. We may therefore conclude that spirochete infection is an invariable accompaniment of tabes; that there is no tabes without syphilis.

In tabes a degeneration of the nerve cells and their processes, and a proliferation of the cells of the stroma of the central nervous system occur. These lesions are of a nature compatible with the presumption of their syphilitic origin, and in them Noguchi has demonstrated Spirochæta pallida. As Spirochæta pallida has a constant association with tabes; as Spirochæta pallida is the only known organism which has this association with tabes; and as the lesions of tabes are such as could be produced by Spirochæta pallida which may be present in them, *we assume that Spirochæta pallida is a cause of tabes.*

From the primary local spirochete inoculation a general infection soon arises. The syphilitic lesions in the general infection develop in groups, which are separated by periods of outwardly perfect quiescence. Thus when the spirochete invasion of the skin and mucous membrane has been repelled and these tissues have healed, an interval free from symptoms ensues. But during this interval the spirochete must persist, for at the end of the interval syphilitic lesions appear in the deeper tissues. As the spirochete, although persisting, is more or less completely inactive, in the healing of the skin and mucous membrane defensive substances must have been produced by the cells of the attacked tissue and these substances must have incompletely destroyed and temporarily inhibited the growth of the spirochete. Such substances are said to be of the nature of antibodies. Ehrlich states that substances normally present in blood serum activate salvarsan in the destruction of the spirochete; yet no antibodies have been detected in the blood by the careful seeking of many competent observers. As the spirochete infection was general and a considerable quiescent period still arose, the defensive substances, although mainly concentrated in the tissues which healed, must have been diffused to some extent throughout the body, and must have everywhere created adverse cultural conditions for the spirochete, in consequence of which the survivors were forced into an inactive, resistant, protective stage.

Salvarsan may cause secondary lesions to vanish, yet later another crop appears; these may be cured by salvarsan; and still another crop may then grow. The salvarsan, like the defensive substance, helps to destroy the active, vulnerable spirochetes, and forces upon the others an inactive, resistant, protective stage. This inactive, resistant, protective stage can be no other than a stage of spore formation. The excretion or destruction of the defensive substance, or of the salvarsan, from the tissues of the host removes the inhibitory influence, and permits the spore to germinate; so fresh lesions appear.

Syphilis, therefore, from a clinical standpoint, is a disease of which the causal organism exhibits alternately a spore forming, resistant, quiescent stage, and a germinating, vulnerable, active stage.

Stessano described as the organism of syphilis certain cell inclusions; Siegel thought the structures he reported as Cytoryctes luis were the causal organism of lues; and Schaudinn blamed the flagellated, free moving spirochete. Each of these observers

seems to have the honor of detecting a phase of the life cycle of the protozoon of syphilis (Ross). This life cycle is similar to that of the leucocytozoon of the guineapig and of the analogous parasite which infests the vesiculæ seminales of the earth worm. E. H. Ross, working with the jelly method of in vitro staining, found two kinds of intracellular bodies in the mononuclear leucocytes in 143 cases of chancres, buboes, and secondary syphilides. In one kind the chromatin forms ovoid bodies which are liberated by the bursting of the contained cell. In the other kind the chromatin forms wavy coils like spirochetes. McDonagh corroborated these findings in forty-seven cases of chancres, buboes, and cutaneous lesions. Others have also substantiated the main points in Ross's findings. Apparently the sporozoite or infective granule of syphilis invades a mononuclear leucocyte wherein it grows and divides into two; one half develops as an irregular coil that may split into as many as fifteen shorter coils which develop into spirochetes and which represent the microgamete or male element. The other half becomes ovoid and extracellular and represents the macrogamete or female element. McDonagh states that he has seen the act of fertilization, and that the zygote forms sporoblasts from which sporozoites develop; and so the cycle continues.

Occasionally secondary and tertiary lesions develop at the same time; very rarely tertiary or even cutaneous syphilides (Spillmann and Perrin) occur with tabes or general paresis. But such precocious and infrequent appearances serve merely to emphasize the remarkable constancy with which the lesions of syphilis follow the definite order of march—from the local inoculation site to the glands, thence to the skin and mucous membranes, and next to the deeper tissues. Only exceptionally is the central nervous system invaded, and then it is the last tissue invaded.

When an infection is general, of the tissues which are equally accessible, the first attacked must be the most vulnerable. If the first tissue attacked heals, and fresh lesions later appear, not in it, but in another tissue, the tissue first attacked which must previously have been more, is then less vulnerable than the second tissue attacked; if, for example, the skin and mucous membrane are attacked and heal, the cells of the skin and mucous membrane acquire an active capacity to destroy the invading spirochetes, and an immunity to the particular invader which is greater than the immunity of the deeper tissues. This destructive power may not be restricted to the particular spirochete which called it forth. Krafft-Ebing inoculated with virulent syphilitic material eight general paretics, in none of whom did any local reaction follow. Truffi, P. Ullmann, and Tomaczewski have shown in dogs that a second syphilitic injection in the scrotal skin, seven or nine weeks after a first, may produce little or no reaction; that inoculation of the eye is not followed, however, by detectable skin immunity, nor is inoculation of the skin followed by eye immunity. The immunity which is conferred upon the tissue by means of the syphilitic injection, is specific for that tissue and is not absolute.

As a rule, when the glands, skin, mucous membrane, and deeper tissues have in turn been successfully invaded, the spirochete, without producing notable lesions in the central nervous system, ceases to be active in that host. But when from the deeper tissues syphilitic lesions disappear, and symptoms arise in the central nervous system, the deeper tissues enjoy an immunity which the central nervous system does not possess. When lesions appear in the central nervous system, the glands, skin, mucous membrane, and deeper tissues must be more resistant to the exciting organism than the central nervous system.

After the healing of the skin and mucous membrane, the spirochete grows, not in these, but in the deeper tissues. This new selective action of the spirochete probably arises, not only from an increased resistance of the skin and mucous membrane in that host, but also from an alteration in the cultural tendency of the spirochete. Indeed, the spirochete which has been successfully repelled in the invasion of one tissue seems to have lost to some degree its power to attack that tissue in any host. To the spores of the spirochete all tissues may be accessible; but only in those tissues from which no invasion has been repelled and in which spore formation has not been forced upon the spirochete, may the spores be able to germinate. Thus the noncontagious character of tertiary lesions may be partly due to a relative incapacity of their elusive spirochete to grow in the skin and mucous membrane of any host. And the mildness or absence of the pretabetic lesions in many cases of tabes arises probably, not because of a resistance inherent in the nonnervous tissue of the individual, but because the spores of the spirochete lack the power to develop in the skin and mucous membrane and other nonnervous tissues. The presumption that we are here dealing with such spores is strengthened by the fact, which has been emphasized especially by Head and his collaborators, that early and thorough antisyphilitic treatment may be powerless to avert tabes even in these exceptionally mild cases of syphilis; in other words, in these exceptionally mild cases, the infecting organism must be in an inactive, invulnerable stage, a stage of spore formation, until it reaches the central nervous system.

In my experience the wife and child of the majority of tabetics have pupils which are irregular or unequal or slow to react to light. The most frequent, and often the only outward sign of the family taint is this disturbance of the nervous mechanism of the pupil, this sign of implication of the nervous system. One variety of the so called nerve spirochete is, therefore, a spirochete whose spores cannot germinate except in nerve tissues, because in preceding hosts protective spore formation has been forced upon the spirochete in all other tissues.

As the skin and mucous membrane are the contact surfaces of human beings, and as secondaries are the contagious lesions in syphilis, the spirochete which is causing secondary lesions may possess a special predilection for the skin and mucous membranes of another host. Bezançon and Labbé isolated from suppurating joints a staphylococcus which, when injected into other hosts, showed a special predilection for joints. The spirochete which is successfully invading the central nervous system

may possess in an enhanced degree the power to attack the central nervous system in another host and this power may be another attribute of the variety of the so called nerve spirochete which we have just signalized as prevailing in the families of tabetics.

Belières records three cases of general paresis and two cases of an allied nature that all owed their contamination to the same woman. Beaussart quotes a series in which a syphilitic husband, free from nervous affection, had a wife who became tabetic and a daughter who was a general paretic. After divorce the husband remarried and his second wife also developed tabes. Beaussart reported a glass blower, A., who received a buccal chancre from a drinking cup used by a syphilitic fellow workman, B. A and his wife died of general paresis: B died from general paresis: B's wife remained normal, but her lover afterward had tabes. In another group of Beaussart, a man who was a general paretic had a tabetoparetic wife. She had a lover who developed general paresis, and whose wife showed pupillary changes. Morel Lavallée records a series of five cases of general paresis, with a common source of syphilitic infection. Pierre Marie and Bernard and others have reported similar series.

But in such series suspected of infection by a special nerve spirochete, no single source of contagion, far less a unique exposure to infection, has been established. Yet the larger the series infected, the greater is the probability that their common experience is also the source of their common mischance. From a common infection organisms of uniform virulence are acquired. If in spite of possible difference in dose, in treatment, and in resistance, all infected persons acquire nervous symptoms, then either a spirochete possessed of a particular power to invade nerve tissues, is the infecting agent, or several persons reacting to the ordinary spirochete in the same extraordinary way are, by a remarkable coincidence, infected from the same source.

I cannot find Belière's report, but he who cites it makes no mention of nervous affection in the woman alleged to have transmitted the taint; Morel Lavallée does not state that the alleged source of the contagion in his series herself suffered from syphilis of the nervous system; in Beaussart's quoted series, the husband showed no nervous lesions; and in Beaussart's first reported series B's wife remained normal. To establish the existence of a special nerve spirochete, it is, however, not necessary that all exposed to that spirochete should develop syphilitic disease of the nervous system. If in one series the number of people that develop nervous disease is greater than the usual proportion in which nervous disease follows syphilis, then possibly a special nerve spirochete is active in that series. A second analogous series greatly weakens the presumption that, by a coincidence, persons reacting to spirochete infection in the same unusual way were infected from the same source, and increases the probability that the special reaction which characterized the series was due to a particular power in the infecting spirochete. And every additional such series immeasurably enhances this probability. Even from the few examples I have quoted, I think we can clearly distinguish a second variety of nerve spirochete, a variety which characteristically prevails over the average human resistance and inevitably attacks the nervous system in the average person.

In conjugal, and in familial tabes and paresis, is further evidence of the activity of the so called nerve spirochete. But without careful analysis, and without more complete information than is usually reported, one cannot say to which variety of the nerve spirochete were due Raecke's sixty-nine cases, Babinski's twenty cases, and the multitude recorded by Mendel, Luhrmann, and others. We must, however, conclude that the spirochete may acquire attributes which enable it to act with especial virulence on the nervous system, and which the spirochete may conserve in spite of transmission to other hosts.

A syphilitic husband who does not suffer from evident nerve lesions may confer tabes upon his virtuous wife or may afflict his offspring with tabes. Cultural circumstances peculiar to the tabetic may therefore create in an ordinary spirochete a special affinity for nerve structures. Beside such cases of individual peculiarity, there are some on record, in which apparently normal brothers and sisters, infected from different sources, have developed tabes and paresis; in which, presumably, cultural circumstances peculiar to the family gave the spirochete a special power to attack the nervous system. As the ratio of tabes to syphilis in races such as the Persian, the Egyptian, and the Negro, is in striking contrast to that in European peoples, the cultural circumstances which create the nerve spirochete may be even a racial characteristic. Hence *individual, familial, or racial peculiarities of its host may cause an ordinary spirochete to* develop a special power to attack the nervous system.

Fournier and others have stated that the nature of the banal syphilitic lesions affords a guide to the future reaction of the host to the spirochete; that, for example, from the secondaries one can gauge the probability of the later occurrence of nerve syphilis. The pretabetic course of syphilis may show such characteristic extraordinary lesions; or quite ordinary lesions; or mild lesions; or no lesions; yet in every instance the spores of the spirochete have successfully withstood the body defense of the tabetic. The so called nerve spirochete may be a spirochete which can grow best—and perhaps only—in the central nervous system; or a spirochete which, in spite of the average human defense, persists until it attacks the central nervous system—a virulent strain of spirochete; or an ordinary spirochete taking advantage of that individual, familial, or racial characteristic of its host which renders the defense of the host imperfect.

Resistance to the invasion of microorganisms is a function of all the cells of the body, individually and collectively; it is a function which is dependent upon biochemical and physicochemical processes and which differs in no essential respect from the function of metabolism. This vital chemical level of human activity is regulated by the coordinate action of the vegetative nervous system and the internal secreting glands. We know that if the sympathetic supply of one kidney is cut, and the animal is then infected, lesions fall heaviest on the kidney with the defective

nerve supply. We have evidence to show that the suprarenals probably play no direct part in the production of antitoxins or antibodies; yet the Herxheimer reaction is said to be preventable by an injection of adrenaline. The thyroid enlarges in response to infections, and in thyroid disturbances intercurrent organismal invasions are prone to occur. But the direct value of the adrenals, of the thyroid, of the hypophysis, and of the thymus, in withstanding infection, is not yet clearly determined. These internal secretions, however, govern the metabolism of every cell in the body. The more lowly differentiated a cell, the more independent is it; the more isolated and individual is its reaction to infection. The more highly differentiated a cell, the less does it retain its primitive defensive property, and the more does it depend upon the proper correlation of the various arms of defense throughout the body to protect it from invasion. The correlation is attained by means of the internal secretions. When this chemical confederacy is not working in its wonted and wonderfully balanced way, the process of immunization, although perhaps seemingly normal in the local defense of tissues such as skin, mucous membrane, and muscles, may yet be imperfect to the extent that a protozoon which, after being successfully repelled by each of these tissues in turn, usually perishes without affecting the highly differentiated tissues of the central nervous system, though it may show a special facility to persist and ultimately to flourish in these usually sheltered tissues.

I think the individual, familial, and racial imperfection of resistance to the spirochete is probably dependent in large measure upon disturbance in the correlating of the activities of the internal secreting glands.

The spirochete has been demonstrated in the lymphatics of the peripheral nerves. It may reach the unsheathed nerves in the root zone by passing along the nerve lymphatics and may thence enter the central nervous system, for a communication exists between the general lymphatic circulation and that of the cerebrospinal system through the channels of the posterior nerve roots. Poirier showed that a similar connection of the two lymphatic systems occurs in the optic nerve. The frequency with which the posterior nerve root zone is attacked in tabes, and the tendency of tabes to affect the optic nerve, is said to be related to this anatomical connection between the general and cerebrospinal lymphatic systems.

But similar connections occur between the two lymphatic systems elsewhere; thus, in the region of the olfactory nerve is a connection which has been shown by Flexner and Amoss to be of great importance in the diffusion of the virus of poliomyelitis; yet in spite of the frequency of syphilitic nasal affections, olfactory are rarer than optic lesions in tabes; and optic tabes may occur where no syphilitic lesion has been observed in the lymphatic distribution which is linked with the optic nerve; and in the syphilitic myopathies which affect mainly the cells of the anterior horn of the spinal cord, the infection seems to be distributed in the path of the lympathics which accompany the blood-vessels of the cord. The anatomical connections between the general and cerebrospinal lymphatic system through the posterior nerve roots is therefore not the sole factor in the distribution of syphilitic lesions throughout the nervous system.

The main stress in ergot poisoning in the central nervous system, falls on the posterior root zone. It cannot be maintained that this effect is due to the anatomical connection between the general and spinal lymphatic systems. Rather must we assume that the ergot poison shows a selective chemical affinity for the protoplasm of the nerve tissue in this region. An analogous selective capacity is also shown by strychnine, lead, tetanus toxin, and other noxious substances in the nervous system. From the specific reactions to noxious substances, we must assume that the chemical affinities of the nerve cells vary in different parts of the cerebrospinal axis in the same individual, and owing to these variations the nerve cells exercise a selective capacity for the syphilitic toxins conveyed to the cerebrospinal system, through the lymph channels and through the blood. We may conclude that chemical factors are at least as important as anatomical, in determining the site of syphilis in the central nervous system.

In the group of clinical entities which we comprise within the terms exophthalmic goitre and hyperthyroidism we may see arrhythmia of the respiratory and cardiac mechanisms, incoordination of the eye muscles, nystagmus and tremor, mononuclear leucocytosis, emaciation, angioneurotic symptoms, trophic sores, and hypotonia. In tabes also we may see arrhythmia of the respiratory and cardiac mechanisms, incoordination and tremor, mononuclear leucocytosis, emaciation, crises (angioneurotic), trophic sores, and hypotonia. In both we see excessive response to emotional states.

As many of the symptoms of the thyroid conditions and of tabes thus are common, the tabetic toxin must act upon some of the same structures as are acted upon by the morbid agents in these thyroid conditions. Further, Eppinger and Hess report that in beginning tabes a mild form of gastric crises has resulted from the injection of a small amount of pilocarpine. We know that, preceding tabes and apart from tabes, a neurasthenia which may be indistinguishable from the neuroses of vagotonia, is very prevalent in early syphilis of the central nervous system. In other words, syphilitic toxin may act as a vagotonic substance, and its action may reinforce or may be reinforced by autogenous or exogenous vagotonic substances. Individual, familial, and racial characteristics and occupational, nutritional, and environmental conditions which conduce to vagotonia may therefore in syphilis precipitate tabes, and may determine the site of the tabetic lesions. Upon the spirochete—perhaps to some degree also upon its anatomical distribution—upon the correlation of the activity of the ductless glands, and upon the biological peculiarities of the chemical composition of the central nervous system, depends the question whether or not tabes develops in syphilis.

SUMMARY.

Tabes is a rare sequel to syphilis. There is no tabes without syphilis. Syphilis is a cause of tabes. The organism of syphilis is a protozoon, with a sporogenous asexual and sexual cycle. This organism successfully invading any tissue, gains a

special facility to flourish in that tissue; repelled from a tissue, it loses the power to grow in that tissue. In another host this gain or this loss may be evident to the extent to which the biological and chemical reactions of the same tissues in the two hosts are identical. All tissues may be accessible to the spores of the syphilitic protozoon, but only in those tissues in which an invasion has not been repelled may the spores grow. A syphilitic protozoon may acquire a special power to attack the nervous system, and this power may be transmissible through successive generations of spirochetes, and may persist in passage from host to host. The spirochete thus becomes a nerve spirochete. This so called nerve spirochete may be a spirochete which has acquired abnormal resistance to the human defense agents; or a spirochete which is introduced as spores, which owing to cultural characteristics acquired in the previous host, can now only, or best germinate in the tissues of the central nervous system; or a spirochete in a host who, owing to individual, familial, or racial characteristics, has an imperfect resistance. The perfection of the resistance is not directly dependent upon, nor parallel to the local proliferative reaction; tabes may follow lesions of an ordinary or extraordinary character; or lesions of insignificant severity; or even infections which have produced no known lesions. The resistance of a host to a spore forming organism which may invade the body tissues in succession, probably depends upon the correlation of the local reaction and the biological chemical reaction of the body. This correlation probably is under the control of the autonomic and sympathetic nervous system and is achieved mainly through the medium of the ductless glands. The chemical affinities of the nerve tissures are at least as important as are anatomical relations in the distribution of syphilitic lesions throughout the central nervous system. The tabetic toxin acts as a vagotonic substance and its action may be reinforced by autogenous and exogenous vagotonic substances. The nature of the spirochete, of the correlation of the activities of the ductless glands, and of the biological peculiarities of the chemical composition of the central nervous system, determine whether or not syphilis, in a given individual, will result in tabes.

40 East Sixty-second Street.

THE ALIEN IN RELATION TO THE SPREAD OF ACUTE INFECTIOUS DISEASE.

By L. L. Williams, M. D.,
Ellis Island, N. Y.,
Surgeon, United States Public Health Service; Chief Medical Officer, Ellis Island, N. Y.

While the importance of the exclusion of the quarantinable diseases at the seaports of the United States cannot be overestimated, the danger of the spread of the commoner infectious diseases by steerage passengers should not be overlooked. Adequate provision has been made at the maritime quarantines for the detection and detention of persons suffering from plague, yellow fever, cholera, typhus, smallpox, etc., and for the control of contacts. The commoner infections such as measles, scarlet fever, and diphtheria are not quarantinable in the Federal regulation, and the ships having cases of these diseases on board accordingly enter port without detention. Modern quarantine procedure and the effective handling of incipient epidemics have so diminished the danger from exotic diseases like yellow fever and plague that, while continued vigilance is necessary, they have been largely removed from the category of pressing public menaces. In like manner the medical inspection of arriving aliens, conducted by the Public Health Service under the provisions of the immigration laws, has strikingly diminished the influx of chronic contagious diseases like trachoma.

The sanitary measures against the spread of the commoner infectious diseases like scarlet fever are exclusively under the jurisdiction of the State and municipal authorities, and justly so, when these diseases originate within the national borders. But municipalities cannot adequately control sanitary conditions on incoming ships or on vessels operating in the harbors; consequently it seems desirable that the Federal authority should extend its sanitary frontier in this direction, and supplement local restrictive regulations by exercising control of diseases of this character on shipboard and at immigration stations so far as may be practicable. The provisions of the navigation laws, so far as they apply to this matter, are scanty and inadequate. There is thus a gap in the sanitary procedure which can be stopped only by appropriate Federal legislation.

The fate of the passenger suffering from one of these diseases varies. If he is a citizen, he has the right to land and comes at once within the jurisdiction of the local health authorities; if an alien, he falls into the hands of medical officers of the Public Health Service detailed for the medical inspection of aliens. At Ellis Island, in New York harbor, he is placed in the Immigrant Contagious Disease Hospital and detained until the termination of the case, spread of the disease to the community being thus effectively prevented. In what follows, the conditions as they obtain at the New York Immigration Station are referred to.

While the patient, after admission to hospital, is no longer a menace, the antecedent circumstances surrounding his arrival in the country and the disposition made of the persons with whom he has come in contact, have a distinct bearing upon the public health. At the outset it should be clearly understood that officers of the Public Health Service on immigration duty are charged with the medical inspection of aliens, with a view to the certification of those who are excludable under the immigration laws; incidentally they admit to hospital and treat aliens who fall ill before they are legally landed. They are not vested, however, with quarantine powers, and their sanitary powers are advisory only. There is no authority for detaining at Ellis Island immigrants who may have been exposed to contagious disease, to the infection, for instance, of scarlatina, measles, diphtheria, or cerebrospinal meningitis, to mention infections of the character commonly found in the steerage of transatlantic passenger ships. The great majority of steerage immigrants arriving on ships having such infections on board, pass through Ellis Island on the day of arrival, and are scattered

broadcast throughout the country. The handling of these aliens, therefore, on ship board and on the barges transferring them from the ships to the immigration station, especially as regards contact with the sick, becomes at once a matter of public concern. A certain percentage of arriving aliens, thirteen per cent. during the past fiscal year, are detained at Ellis Island for one or more days while their right to be landed is under consideration. The sanitary conditions affecting these detained immigrants prior to their discharge, must also be taken into consideration.

Conditions on shipboard. The minimum accommodation for the sick on board ships bringing passengers from foreign ports, as required by the navigation laws, consists of two compartments, one for men and one for women; there is no requirement that those afflicted with contagious disease be isolated, although this is usually done by the ship's surgeon, the care taken in this respect depending upon the efficiency of that officer. As a rule, such cases are placed in the ship's hospital; if they are more numerous than the hospital can accommodate, some are placed in temporary hospitals—cabins and small compartments being utilized. It is said that these apartments are disinfected, but there is no provision in law for determining the efficiency of the methods employed, and the entire procedure of caring for infectious disease on shipboard is practically under the control of the steamship companies.

Steerages. The accommodations for steerage passengers vary considerably, but two general types of steerage may be recognized. In some ships the accommodations consist of small, separate compartments containing from two to eight bunks. In others there are a few large compartments provided with bunks, the passengers mingling freely. In certain ships both types of steerage may be found. This is especially to be noted in ships in which the steerage passengers are divided into two classes, third and fourth class. Inasmuch as passengers are frequently kept below decks in bad weather, it will readily be seen that when a case of infectious disease develops there will probably be a larger number of contacts in an "open" steerage than in one composed of small units. In any case the number of contacts will depend upon the frequency and thoroughness of the inspections made by the ship's surgeons, upon the promptitude with which suspicious cases of disease are recognized, and upon the sufficiency of the provision for their observation and isolation.

Early recognition and prompt isolation will often prevent further spread of disease; failure to recognize an infectious disease until it has existed for several days will mean an epidemic on ship board if the voyage lasts long enough and, in any case, will mean that a large number of contacts will be landed immediately upon arrival, many of whom will manifest disease after discharge from Ellis Island.

Conditions on transfer barges.—Aliens arriving in the steerage are kept on board until the ship is docked. They are then placed on barges and conveyed to Ellis Island; this is done by the steamship companies. Until a few months ago, each of these barges was provided with a single small room for the accommodation of the sick. In this room it has been the custom to place all sick persons regardless of the nature of the illness. In these rooms, upon arrival at Ellis Island, have been found from time to time children and adults suffering from various infectious diseases. For instance, cases of measles and scarlet fever have been conveyed simultaneously in the same compartment. The objectionable conditions in the barges were, some months ago, reported to former Commissioner of Immigration William Williams, who made a vigorous protest to the steamship companies. The matter has been followed up by his successor, Acting Commissioner Byron H. Uhl, and, as a result, each barge is now provided with two hospital rooms. This merely mitigates the evil, however, and does not cure it. It may be remarked that these compartments are without toilet facilities and have no means of exit except through the decks occupied by crowds of immigrants. The sick cannot therefore be removed until the rest of the passengers have been taken ashore; consequently the patients remain in these sick bays in intimate contact with each other—and frequently with healthy members of their families—for several hours. Moreover, the number of sick is sometimes so great that they overflow on to the decks and are not infrequently found mingling with the other passengers. The method of loading these barges at the steamship docks is likewise open to criticism. On at least one occasion a case of scarlet fever was seen to have been carried on board and a way forced through the immigrants massed on deck.

In view of these conditions it is not surprising that a considerable number of mixed infections develop in hospital and that similar cases are frequently removed to hospital from the detention rooms. The great majority of immigrants arriving in these ships, however, are passed on the day of their arrival, unless actually sick, and immediately proceed to their final destination. A comparatively small percentage of the number are detained by the immigration officials for one or more days. Judging from the number of cases of measles, scarlet fever, diphtheria, cerebrospinal meningitis, etc., removed to hospital from among the immigrants thus detained, the inference is unavoidable that a still larger number of similar cases develop among the immigrants who pass into the country without longer detention than is sufficient to undergo the routine inspection. Some of these people remain in New York; others go by rail in every conceivable direction; some of them are sure to fall sick and establish foci of infection.

With a view of ascertaining the number of secondary cases of infectious disease developing at Ellis Island among detained immigrants, and thereby obtaining a rational basis for estimating the number of cases among immigrants who pass through Ellis Island without detention, a study was made of the records of the Immigrant Contagious Disease Hospital for the year ending June 30, 1913. The diseases taken for study were measles and scarlet fever because the incubation periods of these exanthemata are best known. As regards measles, all cases developing at Ellis Island within fourteen days after arrival were classed as secondary cases or cases receiving infection on shipboard. Cases of

scarlet fever developing within seven days after arrival were also classed as secondary to ship infection. Cases of measles developing after fourteen days, and cases of scarlet fever developing after seven days, were regarded as having been infected while undergoing detention at Ellis Island.

Measles.—The total number of cases admitted to hospital during the year was 834. Of this number 576 were taken from ships on the day of arrival; 258 cases developed at Ellis Island among detained immigrants. Of this latter number, 167 developed within fourteen days after arrival and are classed as secondary to cases occurring on shipboard; 91 cases developed more than fourteen days after landing and are regarded as being due to infection subsequent to arrival.

Now the records kindly furnished by the Statistical Division at Ellis Island show that thirteen per cent. of the immigrants arriving during the year, were detained for one or more days after arrival, while eighty-seven per cent. were landed on the day of arrival. The latter, of course, proceeded at once to their destination in various parts of the country. If 167 secondary cases developed among the thirteen per cent. of the immigrants who were detained, it is a fair inference that a proportional number, or approximately 1,117 cases, developed among the eighty-seven per cent. who were immediately discharged. While many disturbing factors would enter into a statistical study of this character, the estimate given above is believed to be very conservative, for the reason that many immigrants are detained only one or two days, while comparatively few would remain in the detention rooms for the full period of incubation. The 167 recorded cases would not therefore represent all the secondary cases occurring among the thirteen per cent. detained for one or more days.

It is safe to say, therefore, that considerably more than 1,000 cases of incubating measles pass annually through Ellis Island to be distributed and become foci of infection in widely separated parts of the United States. It may be noted that of the 576 cases received from ships on arrival, approximately seventy per cent. were "manifested" on the report of the ship's surgeon, while thirty per cent. were not detected until the immigrants arrived at Ellis Island and were subjected to the official medical inspection. Nearly one third of these cases, therefore, were in close contact with the rest of the passengers during the early stages when the disease is believed to be most actively contagious.

There were forty secondary cases without any record of primary cases occurring on shipboard. These cases occurred among the passengers of eighteen ships, two ships being represented twice. The primary cases were probably mild ones progressing to recovery undetected.

Scarlet fever.—The total number of cases admitted during the year was 162. Sixty-two cases were received from the ships on arrival; 100 cases developed during detention at Ellis Island. Of this latter number, fifty-six cases developed within seven days from arrival and are regarded as secondary cases; forty-four cases developed after more than seven days' detention and therefore were infected at Ellis Island. Fifty-six secondary cases occurred, therefore, among the thirteen per cent. of immigrants who were detained, and presumably a corresponding number, or approximately 375 cases of scarlet fever, occurred among the eighty-seven per cent. of immigrants who were discharged on the day of arrival and proceeded to their various destinations. It is a remarkable circumstance that in twenty-two of the fifty-six secondary cases there was no record of any primary case of scarlet fever on ship board, although in thirteen instances measles was reported. It is well known that scarlatina often occurs in a form so mild that detection is difficult. This fact has an important bearing upon one of the measures of prevention advocated in another part of this paper.

These two diseases, measles and scarlatina, have been considered because they are typical of their class. What has been said concerning them applies equally well, *mutatis mutandis,* to diphtheria and cerebrospinal meningitis, thirty-two cases of the former and fifteen cases of the latter having been treated during the year at Ellis Island. Sometimes these secondary cases which develop after landing are heard from, and letters from local health officers are received from time to time, giving specific instances.

THE REMEDY.

There is no authority for the detention of a shipload of immigrants because of possible exposure to one or other of the diseases mentioned above. Nor would it be either practicable or wise to attempt to detain them until the expiration of the period of incubation. The only practicable remedy, therefore, is to minimize the chances of contact between the sick and the well. In order to acomplish this it will be necessary: 1. To detect cases of contagious disease on shipboard at the earliest possible moment and to enforce the effective isolation of the contagious sick and the subsequent disinfection of the ship's hospital and steerage. 2. To enforce the conveyance of the infectious sick from the ship to the immigration station under sanitary conditions. 3. To improve conditions in the detention rooms at the immigration stations. These three propositions will be considered in detail.

1. As stated elsewhere, the accommodation for the sick on shipboard now required by law is inadequate. Under the existing laws the provision for the sick on shipboard is subject to inspection by the collector of customs. The collector and his agents are fiscal officers, and it would be absurd to expect them to decide upon the efficiency of the isolation measures required in a case of contagious disease. A more comprehensive Federal law is needed, providing increased accommodation for the sick on ships engaged in transporting steerage passengers and giving authority to medical officers of the Government to inspect such accommodations and enforce proper disinfection after arrival in port. It should further be required that ships, hereafter entering into the business of transporting immigrants, be provided with steerages composed of small units rather than a few large compartments. This would materially lessen the danger of steerage epidemics.

As the diseases under discussion are largely confined to children, the temperature of every child in

the steerage, under ten years of age, should be taken daily, and all children found to have fever should immediately be placed in an observation compartment or hospital, distinct from that provided for other cases of disease, and there kept under surveillance until the nature of the complaint can be ascertained. If the case proves to be infectious, it should be removed to the ship's isolation hospital; if a noncontagious disease, it should go to the hospital compartment for such diseases; if a transient fever due to some temporary disturbing cause, it could be returned to the steerage whence it was removed. By the adoption of this simple measure, incipient cases of infectious disease will be detected soon after the onset and before there is much chance of contact with others; without it, children suffering from eruptive fevers will usually remain in contact with the rest of the passengers until the rash appears, that is, during the most dangerous period of the disease. The procedure will, moreover, aid in bringing to light mild exanthems which would otherwise go undetected, as well as other conditions, like diphtheria, which might escape attention. In other words, each child would receive a special daily inspection. The use of this procedure in the Ellis Island detention rooms will be referred to later.

To carry out on shipboard the measures outlined above would require an adequate staff of ship's surgeons and matrons, a commodious observation hospital, two hospitals (for men and women) for noncontagious diseases, and at least two or three small isolation hospitals. Space is valuable on board ship and the accommodation needed, moderate as it is, is not likely to be provided unless expressly required by law. A minimum number of medical officers should be required, one of whom should have a reasonable knowledge of preventive medicine. The pay of a ship's surgeon is not attractive, and it too frequently happens that these positions are occupied by inexperienced men, many of whom retain them for short periods only, although there are a number of these officers who are very efficient; these are usually physicians who have adopted this mode of life for special personal reasons. Moreover, the number of medical officers is not always sufficient for the adequate care of all persons on board, and these large ships, equipped with most of the appurtenances of a modern city, are only too often destitute of that prime necessity of a civilized community, viz., an efficient health department.

2. The law should include a provision forbidding the transportation in domestic vessels of persons suffering from any acute infectious disease, except under properly devised sanitary regulations, and such regulations should designate the amount of space required, the number of compartments, and the minimum equipment for barges or other craft conveying immigrants in harbors. At New York such a provision would probably result in the steamship companies providing a special vessel for the removal of the sick from incoming steamers.

3. As stated elsewhere, approximately thirteen per cent. of arriving aliens are detained for various reasons. The number arriving daily at Ellis Island often reaches 4,000 and sometimes exceeds 5,000. The space for detention is limited, and the detention rooms are often very much congested. When a detained immigrant falls sick in the detention room of an infectious complaint contracted on shipboard, it is therefore easy for others to become infected and, if the case is not detected until, for instance, an eruption appears, there are likely to be many contacts. An inspection of detained immigrants is made three times daily by a medical officer detailed for this purpose. Owing, however, to the congested conditions, the numerous languages spoken, and the practice immigrant women have of concealing their sick children, it is a difficult matter to detect early cases.

In order to aid in the early detection and prompt removal of infectious cases, the Commissioner of Immigration, at the request of the writer, has recently required the matrons in charge of the detention rooms to take daily the temperature of every child under ten years old. Children showing an appreciable rise of temperature are sent to hospital and placed in the observation ward until a diagnosis can be made. The results already obtained from this practice are very promising. The taking of temperatures in the detention room was begun November 15, 1913. Between that date and January 26, 1914, 116 febrile cases of doubtful character were detected and placed in the observation ward. Of this number, seventy-two proved to be noninfectious diseases of various kinds; forty-four proved to be infectious diseases, viz.:

Measles	38
Scarlet fever	3
Diphtheria	1
Whooping cough	1
Chicken pox	1
	44[1]

Opportunity was thus afforded for the removal of these cases at an early date and there can be no reasonable doubt that such early removal resulted in a marked diminution of the number of contacts and, consequently, in a corresponding diminution of the number of secondary cases. That similar results would be obtained from the adoption of this procedure on shipboard may safely be affirmed. This measure, therefore, is of proved value. The medical work now done by the matrons should, however, be carried out by trained nurses employed for this purpose.

The congestion in the detention rooms is an important factor contributing to the spread of infection. The Commissioner of Immigration, with the limited space and scanty funds at his disposal, has done all that is practicable to relieve these conditions. It is merely a question of money. With a reasonable increase in space, an adequate operating force, and sufficient funds for maintenance, the opportunities for the spread of infection in the detention rooms would practically disappear.

SUMMARY.

1. There is an unnecessary percentage of morbidity and a corresponding unnecessary percentage of mortality from infectious disease among immigrant children.

2. A large number of persons infected with

[1]Since this was written, an order based upon these results has been issued by the Bureau of Immigration, requiring the taking of temperatures of children daily in the detention rooms of all immigration stations.

various acute contagious diseases pass through the immigration stations while in the incubative stage of these diseases.

3. There is now no practicable method of effectively preventing this influx of disease.

4. While this influx of contagion cannot be altogether stopped, it can be greatly reduced:

(a) By amending and strictly enforcing the navigation laws.

(b) By a reasonable increase of the appropriation for caring for aliens at immigration stations.

THE ANTITUBERCULOSIS CAMPAIGN.

Methods, Results, and Prospects.

By Julius Rosenberg, M. D.,
Margaretville, N. Y., and New York.

The so called antituberculosis campaign which began about 1907 consists of modern methods of disease prevention, systematized and adapted for preventing the spread of tuberculosis infection. In the city of New York a new sanitary system was developed by Dr. Herman Biggs as early as 1897. It resulted in a decline of the death rate from general causes and incidentally from tuberculosis. In fact, New York's records and statistics, issued by the department of health, are reliable evidence of what has been attained through systematized methods to prevent tuberculosis and other infectious diseases.

What are the results of the campaign against tuberculosis carried on for years? Is the death rate decreasing? Is the improvement in mortality proportionately greater than the average for other diseases? Careful investigation shows that tuberculosis is not decreasing more today than it was twenty-five years ago. Doctor Willcox, Statistician of the State of New York, writes (*Special Report of Vital Statistics,* August, 1910): "No influence of the special antituberculosis campaign can be traced in these reported figures," and further, "neither in the city nor in the State of New York has the proportion of deaths (tuberculosis) undergone any material reduction."

To learn existing conditions throughout the country, I directed requests for information to the health officers of most States and large cities. The answers represent every section of country, type of city, and afford the best means of ascertaining conditions as they are. Even these figures present a more favorable aspect than actual conditions. No observer believes that the deaths recorded as due to tuberculosis of the lungs (or other types) represent the total number of deaths from that malady. Lawrence Irrwill (*Medical Times,* July, 1913) writes: "The ordinance providing for the report of all living cases (in New York and other cities) is systematically ignored and after death certificates are issued registering the cause of death as "pneumonia," "bronchopneumonia," "chronic bronchitis," etc. In greater New York, in 1907, again quoting Irrwill, were reported 19,725 cases of pulmonary tuberculosis with 10,262 deaths from all forms. In the following year "reporting tuberculosis" became a State law. In 1910, 32,005 cases, with 10,075 deaths from all forms of tuberculosis, were reported. Notwithstanding an increase of population, there was a decrease in number of registered deaths. These figures *do not prove* an actual decrease in deaths from tuberculosis. Few sufferers from tuberculosis remain in the city if they can scrape enough money together to go away; they die in California, Colorado, New Mexico, etc., but their deaths do not appear in the records of their home city.

Who would estimate the number? It may be 500 or 5,000. Many foreign born residents counted in the United States census leave this country when sick with tuberculosis and never return. A competent physician counted eighty tuberculosis cases on a steamer leaving Boston for Italy. Their deaths are not recorded, but they have been counted as in the city's population. I am aware of the splendid work and service by public and private organizations, but existing conditions do not warrant optimism and assurance. I append official reports from States and cities received in response to my request.

CALIFORNIA.

Year	[illegible]	[illegible] per
1908	4040	127
1909	3945	120
1910	4061	131
1911	4353	128
1912	4161	128

WISCONSIN.

Population 1908 to 1911.

2,300,000 2,400,000

1908	2,509
1909	2,546
1910	2,494
1911	2,[illegible]

Deaths from meningitis 450 cases, are now believed to be mostly of tuberculous origin.

The report contains no investigation of dairies, but states, "The mother should see that the milk is from cows and clean dairies, etc." The health officers should attend to investigation of dairies and excluding milk from diseased cattle and dirty dairies; to advise the mother is of no value, as she is unable to carry it out.

NEW HAMPSHIRE.

1908	471
1909	466
1910	47[illegible]
1911	43[illegible]

The legislature of 1911 passed a concurrent resolution, authorizing the Governor to appoint a commission to consist of five *competent persons* to investigate the subject matter of tuberculosis and recommend a comprehensive plan to control or to prevent the spread of the disease, etc.

The Governor of New Hampshire, for reasons only known to himself, appointed not a single physician as a member of the commission. He no doubt believed butcher, baker, and candlestick maker best qualified to investigate the subject matter of tuberculosis and how to control and prevent the spread of the disease. While political expediency influences appointment and investigation of sanitary conditions, the results are of no especial value. The New Hampshire commission's report is barren. It compares the statistics of the year 1882 with 1912, and discovers a wonderful improvement in the death rate from tuberculosis and all causes.

NORTH DAKOTA.

[illegible]	Year	[illegible]	[illegible]
500,000	1909	187	37.4
	1910	155	31.2
577,000	1911	232	40.2
	1912	215	37.2

The figures are not indicative of a changed condition. The death rate is exceptionally low.

MAINE.

Year.	Deaths.	Per 100,000.
1901	1033	
1902	970	
1903	901	
1904	1016	135
1905	894	
1906	915	
1907	950	
1908	893	123
1909	830	113
1910	889	120
1911	842	125
1912	780	117

These figures show a progressive improvement due mainly to a decrease in the rural districts; in these compare the mortality of 140 in 1901 with 103 in 1911.

NEW YORK STATE.

Population.	Year.	Pulmonary tuberculosis.	Deaths per 100,000.
7,200,000	1900	13,591	186
7,400,000	1901	13,766	
7,500,000	1902	12,582	
7,700,000	1903	13,194	
7,900,000	1904	14,158	170
8,000,000	1905	14,059	
8,200,000	1906	14,027	
8,400,000	1907	14,406	
8,500,000	1908	14,316	
8,600,000	1909	13,996	155
9,100,000	1910	14,059	
9,300,000	1911	14,205	151

INDIANAPOLIS.

Population.	Year.	Deaths.
233,000	1908	399
230,000	1909	382
233,000	1910	397
240,000	1911	363
260,000	1912	359

The decrease from 160 per 100,000 to 140 in 1912, represents the average improvement.

WORCESTER, MASS.

Population.	Year.	Deaths.
145,000	1910	148
156,000	1911	153
160,000	1912	150

This is an exceptionally low average—about 100 per 100,000. There are, however, a number of deaths occurring in the State institutions which do not appear in the city statistics and would probably increase the percentage to the average 140 per 100,000.

NEW HAVEN, CONN.

Population.	Year.	Deaths from tuberculosis.	Death rate per 100,000 from all causes.
135,000	1910	183	164
137,000	1911	137	166
140,000	1912	163	166

The reports of 1911 and 1912 urge more strenuous laws against dairy farms, and advise exclusion of milk, except from cows tested and found free from tuberculosis; 8,000 cows were tested—twenty per cent. reacted and twelve per cent. were found badly diseased and were destroyed.

PROVIDENCE, R. I.

Population.	Year.	Deaths.
225,000 to 230,000	1908	403
	1909	416
	1910	394
	1911	371
	1912	336

The report of 1912 states: "Since 1910, the number of residents of Providence dying outside the city has been increased; therefore the number of deaths from tuberculosis are misleading, as a large number of the poor in advanced stages of consumption are sent to State institutions at Howard."

CHICAGO, ILL.

Population.	Year.	Deaths.
2,195,000	1909	3885
2,240,000	1910	3726
	1911	3750
2,294,000	1912	3726

This shows the annual fluctuations—no decisive change noticeable.

COLUMBUS, OHIO.

Population.	Year.	Deaths.
185,000 to 188,000	1908	302
	1909	256
	1910	316
	1911	287
	1912	281

The death rate is lower in 1909, than in 1912. Tuberculosis rate is not changed except that in 1910 it was uncommonly high.

ST. LOUIS, MO.

Population.	Year.	Deaths.
732,000	1909	1094
733,000	1910	1203
698,000	1911	1075
687,000	1912	933

The decline in the number of deaths is due to decrease in population. The 1912 report, referring to the examination of cows and dairies, discloses an unusual condition: "The examination of our local dairies containing 26,400 cows shows not a single tuberculous cow—and the general condition is excellent." (This is remarkable if true.)

NASHVILLE, TENN.

Population.			
110,000			
White.	Colored.		
75,000	38,000		
Deaths.	Deaths.	Year.	Tuberculosis.
111	120	1909	231
99	120	1910	219
90	129	1911	219

Although the white outnumber the negroes almost two to one, the number of negroes dying from pulmonary tuberculosis is twenty to thirty per cent. higher. There are also twice as many deaths from pneumonia among the negro population of Nashville—139 negroes against seventy-three whites in 1910, and 130 negroes against seventy-six whites in 1911.

These figures illustrate the danger from unsanitary conditions and disregard of the first principles of cleanliness. The city employs medical inspectors and district nurses to attend patients at their homes and to enforce sanitary laws. There is surely need of this and many more should be appointed. The Nashville Board of Health represents the type of what I call "unjustified optimism." The 1911 report closed with the following sentence: "We feel justified in viewing the tuberculosis problem with more optimism and look confidently to the future." Why? The mortality rate from all causes remains the same and that from tuberculosis is not lower. The disproportion and high mortality from tuberculosis and among the negro inhabitants pneumonia is surely not an indication of perfact sanitation. Instead of "looking confidently to the future," the health board of Nashville, Tenn., had better look for violation of their rules (efficient on paper), which are useless until enforced.

LOWELL, MASS.

Population.	Year.	Deaths.
106,000	1910	117
100,000	1911	114
106,000	1912	119

This does not include deaths in State sanitariums. The low mortality of 110 per 100,000 is doubtless thus explained.

NEW YORK CITY.

	Deaths.	
1900	8,100	Decennial average 8,300. Corrected decennial average; to correspond with increased population, 10,600. A decrease in deaths of 1,900 in eleven years, about twenty per cent.
1901	8,100	
1902	7,600	
1903	8,000	
1904	8,500	
1905	8,500	
1906	9,000	
1907	8,900	
1908	9,000	
1909	8,600	
1910	8,700	
1911	8,800	

During the same period the deaths from all other forms of tuberculosis decreased from 1,670 to 1,470, about twelve per cent. These cases consist mainly of meningitis and intestinal tuberculosis in children under five years of age.

BOSTON, MASS.

Death rate all causes per 1,000.	Year	Tuberculosis
17.88	1908....1904 1909....1072 1910....1163	Average of 1.7
17.08	1911....1067	1.5
16.14	1912....1093	1.5

The tuberculosis mortality's decline averages that from all causes.

HARTFORD, CONN.

Population	Year.	Deaths.	
	1908	176	Prior to opening of State Sanitarium.
	1909	126	
	1910	174	
98,000	1911	139	
100,000	1912	102	
102,000	1913	116	

The health officer, referring to the decrease in number of deaths as compared with 1910, writes: "The figures of 1910, '12, '13, should not be compared with 1910 and preceding years on account of opening of the State Sanitarium in 1911, which shows many advanced cases outside of the city which in past years came to the hospitals for treatment.

LOS ANGELES, CAL.

Population.	Year.	Deaths	Rate per 100,000
275,000	1908	3828	689
300,000	1909	3753	666
300,000	1910	4872	790
350,000	1911	5267	906
400,000	1912	6116	1012

Tuberculosis increased in proportion to increase of population and general death rate. It is unusually high, owing to the increasing number of patients from outside seeking health on the California coast.

State.	1908.	1909	1910	1911	Population
New York	14,316	13,096	14,059	14,205	9,113,279
Wisconsin	2,500	2,546	2,404	2,405	2,333,860
New Hampshire	471	466	479	433	430,572
California	4,040	3,945	4,061	4,355	2,377,549
Maine	893	830	880	842	742,371
North Dakota	180	187	155	232	577,056
	22,409	21,970	22,047	22,472	

City	1908	1910	1911	1912	Population 1910	Population 1912
Binghamton	54	73	65	63	45,000	45,000
Columbus	256	310	287	281	277,000	188,000
Chicago	3,885	3,726	3,750	3,726	2,200,000	2,300,000
Nashville	211	239	210	220	110,000	110,000
Providence	416	394	371	330	235,000	240,000
St. Louis	1,004	1,203	1,075	933	715,000	687,000
Indianapolis	382	397	363	350	185,000	260,000
Los Angeles	666	790	906	1,012	198,000	400,000
Hartford	138	102	110	140	98,000	102,000
Boston	1,072	1,067	1,067	1,093	735,000	770,000
	8,174	8,405	8,214	8,139	5,102,000	5,368,000

	1908	1910	1911	1912	1913
Maine	893	830	889	842	780
California	4,040	3,945	4,061	4,355	4,373
North Dakota	190	187	232	236	215
	5,123	4,930	5,182	5,233	5,348

PULMONARY TUBERCULOSIS. ANNUAL ALL RATE PER 100,000 PERSONS LIVING IN THE PRINCIPAL CITIES OF THE WORLD.

	1908	1910	1911
London	140	123	135
Edinburgh	125	144	139
Glasgow	154	138	132
Montreal	176	172	175
Paris	374	346	360
Amsterdam	138	140	135
Berlin	170	125	108
Hamburg	142	201	132
Vienna	277	180	200
New York	197	192	181
Chicago	101	138	195
Boston	170	110	135

These figures show no change, except the usual fluctuations. The worldwide crusade gives no evidence of success.

The reports and tables disclose the actual conditions as they exist. The figures for 1913 are not included, not being available, but judging from incomplete reports in my possession, their addition would not have altered the results. It must be admitted that most liberal interpretations would not warrant the optimism and statements found in medical and lay literature. Where is the evidence to justify the prophecy, "the end of tuberculosis is in sight"? Upon what facts did the Local Government Board of London base the conclusion (published in the *New York Times*, January 23, 1914), "Consumption will disappear," and "the disease continues to decrease in great centres of population, *London, Manchester, Liverpool,* and *Edinburgh*"? I refer to the reports from those cities.

Such statements are harmful, creating confidence and a feeling of assurance not justified by past nor present prospects of the future. Instead of "a marked decrease everywhere" the death rate continues unchanged, showing perhaps a fractional decline in a few cities which may be the result of shifting from city and State institutions. Reports from New York city show what can be attained by present methods, and the same results will be attained (in time) in other cities and States. The antituberculosis crusade has accomplished much good; it has improved the general tone, physical and moral health, but it can no more eradicate tuberculosis than smallpox and diphtheria could be vanquished by frequent baths and gargling with mouthwashes.

I have tabulated the number of deaths from pulmonary tuberculosis of six cities, with a total population of close to 2,000,000. In 1908, with a population of 1,615,000, there occurred 2,960 deaths; and a year ago, with a population of 1,848,000, the number of fatalities grew to 3,144. Surely there is no cause here for mutual felicitations. The other tabulations give the very same information—*in statu quo ante bellum.*

I do not decry nor criticize what has been and is being done, but the results are surely disappointing. I always doubted the extravagant statements, but I was not aware that man barely held his own against the disease. I am not predicting failure. I believe the great white plague will ultimately be controlled, but not by present means. The education of the public in sanitation is of inestimable value; it saves numerous lives, prevents disease. The recognition by men of all classes that spitting means danger to others and from others, that the abolition of roller towels and common drinking cups is beneficial, is more practical because realization is possible. It proves the people are *en rapport* with the problems of the day; they are recognizing the fact that "it is easier to prevent illness than to cure," a fact known to the Chinese for centuries.

But what can be done to lessen the devastation by consumption? Until Koch startled the tuberculosis congress in London in 1902 with the statement, "bovine tuberculosis does not produce serious infection in man and is comparatively rare," the tuberculous cow was feared and the milk and meat excluded. The tuberculosis commission appointed by the London congress investigated the subject of

bovine tuberculosis and disagreed with Koch. Many other authorities found evidence of cattle infection, yet the idea that bovine infection is not a menace to life has gained foothold and little care is exercised to exclude the product of the consumptive cow. The spitting man is feared as a poisonous serpent, but milk alive with tuberculosis germs is admitted to the home and nursery and no questions are asked. The roller towel and rusty cup had to go—the diseased cow remains undisturbed, spreading infection to animals and man until life ends.

Park and Krumwiede's research article, relative to the importance of the bovine and human types of tubercle bacillus (Collected studies from the research laboratory of the Department of Health of the City of New York, VI, 1911), states: "The results of the examination of various cases (Vol. V) showed conclusively that infection with bovine tubercle bacilli is essentially a disease of children, and a serious menace to life in infants." Alfred Hess, studying the New York's milk supply (*Journal A. M. A.*, p. 1011, 1909), found "of 106 specimens of milk tested on guineapigs sixteen per cent. contained virulent tubercle bacilli." Hess observed the effect of raw milk upon young children and found that out of eighteen children ranging from five months to five years, one died from pulmonary tuberculosis, while four gave positive reaction to the Pirquet test. A few of the children with negative reaction looked ill, and were poorly nourished, and no doubt fell victims to tuberculosis.

Mitchell, of Edinburgh, reports in the *British Medical Journal* for January 15th, seventy-two cases of tuberculosis in children less than five years old. He found in sixty-five cases the bovine type of bacillus to be the source of illness; the cases represented every phase of tuberculosis infection. It has been found that many supposed cases of epidemic cerebrospinal meningitis are tuberculous. The patients usually are under two years of age, although it is not uncommon in later life. Sophian (research laboratory, Department of Health of the City of New York, VI, 1911) reports 112 cases of supposed epidemic cerebrospinal meningitis. Of these twenty-five were correctly diagnosed, twenty-six were tuberculous meningitis, and the remainder were found to be some other condition, bronchopneumonia, suppurative meningitis, anterior poliomyelitis, etc. Park and Krumwiede (referred to above) found in fifty-five cases of tuberculosis in children (five to sixteen years) forty-six cases of human tuberculosis and nine due to the bovine bacillus; in children under five years of age ninety-one were of human infection and twenty-five were from bovine tuberculosis. The latest report from the New York board of health states: "A careful study of the amount of tuberculosis in New York is in progress, and at the present time the total amount of bovine infection can only be roughly estimated. . . . Many cases of tuberculosis in infants are not reported correctly. . . . The majority of fatal cases during the past two years of meningitis (supposedly meningococcus infection) are really tuberculous in character. . . . The deaths from tuberculosis due to milk are estimated at about 300 yearly." This estimate is much too low. I believe at about 1,500 deaths would be more near the truth.

How extensive is the infection of dairy cattle can be seen from some of the reports in my possession. Washington, D. C., Rochester, N. Y., and New Haven, Conn., found milk tests to give positive evidence of tuberculosis in twenty per cent. of the specimens. The health department of Boston estimates the proportion of tuberculous animals producing the city supply at from twenty to twenty-five per cent. The number of cows in the city's abattoirs average 5,000, and of these about 1,000 (twenty per cent.) are found to be unfit for consumption. According to the government reports, the State of Kansas has 722,0000 dairy cows and the proportion of tuberculous animals is not less than 100,000, fifteen per cent. The New York State report of 1911 contains statements disclosing conditions beyond description, which, but for the source of information, would not be accepted as true. The health officer of Buffalo, after discussing the city milk supply and the efforts to improve it, states that "there is no diminution of tuberculosis and the State's effort in elimination is negligible." He finds "the markets at all times flooded with tuberculous animals to be slaughtered for food (sausage), and the same shipments average as high as seventy-five per cent.

Because of Koch's statements "the tuberculous cow" and bovine bacillus have an entrance into the houses of the best. Let no man be confident of his safety because he paid twelve or fifteen cents a quart for milk; milk is not the only source of infection; butter and even cheese provide the same means to gain admission. It is high time for physicians to recognize conditions as they are; that the mortality from tuberculosis is about the same with no prospects of improvement. Let the crusade extend to the cow—abolish bovine tuberculosis; it must go like the roller towel and the drinking cup. By putting an end to the tuberculous cow (and other tuberculous animals, swine, etc.), a potent source of infection is removed. Whether the decrease is ten per cent. or twenty per cent. will not be known until the diseased animal is eradicated. Whatever the result, it is a gain and surely a step in the right direction.

By what means and measures can the tuberculous cow be exterminated and new infection prevented? The past two years I have devoted to study of the immunizing of animals, especially cows and goats, against tuberculosis and evolved a simple, safe, and certain method. It involves no risk to the animal's life nor sickness; immunity is established within two weeks. The advantage from immunity of the cow is the transmission of passive immunity to the human consumer of milk. By the inoculation the milk acquires highly protective powers—antibodies of all kinds being present in high concentrations. The absorption of antibodies by way of the alimentary canal has been proved by numerous observers, as well as myself. I have proved the transmission of immunity in a number of cases (New York Medical Journal, October 14, 1913), and I am about to report another series of observation. The failures are due to the deficiency in antibodies in

the milk, inoculation being insufficient, and the time is too short for them to appear in the blood.

After examination of the preceding tables, who would not concede that the results of the antituberculosis campaign are conjectural; that the problem is far from being solved and that eradication is imaginary? The prevalence of tuberculosis in dairy and stock farm is admitted; the carrying of bacilli into the house by contamination of milk, butter, cheese, and meat, a proved fact. Whether the ratio of bovine infection is fifteen or twenty per per cent. does not alter the fact that the tuberculous cow must go. There can be no argument in favor of the diseased cow. It is the duty of every State and town to discover and destroy the sick animals and prevent new infection by preventive vaccination. Are we spending money wisely, building hospitals for consumptives while the source of infection continues?

I trust I have succeeded in convincing the reader of the serious reality, that I may enlist his support in spreading the truth that bovine tuberculosis is a menace; that the tuberculous cow must be eradicated; and that it is a duty of all to insist upon immunization of cows. Inoculation of the cow guards against infection, and the milk, instead of being a poison, acquires properties which help the ill and protect the healthy. Immunized milk is used in a number of hospitals and private homes with good results; in children with Pott's disease, tuberculosis of bone and joints, suppurating tuberculosis glands, and adults with pulmonary tuberculosis. I have reports from seventeen patients treated with immunized milk during a period of one and a half to three and a half months. Nine patients had incipient pulmonary tuberculosis, three in advanced stages; three were cases of bone and joint infection; and two cases were probably in the first stage, although stated to be advanced stages. The reports from physicians and patients are extremely favorable, except of one child with knee joint infection.

Here are some reports: "The patient who took the milk had improved very much in health and strength." "An incipient case of apical tuberculosis is now without symptoms of any kind and the signs have all improved." The doctor sending the reports is a well known Brooklyn physician. "Two patients with Pott's disease operated on last July were put upon immunized milk early in December; a few weeks later the temperature became and remained normal; the wounds closed; weight increased; general conditions, blood, etc., marvelous improvement." In the third case, as stated before, there has been no improvement. These patients are inmates of the hospital for joint diseases in charge of Dr. Henry Frauenthal. "Three other patients have been put on immunized milk, but too recently to expect a change; in all cases the temperature has become normal; cough and physical conditions improved or disappeared; general symptoms very much better." A patient in a nearby town writes: "I am ill five months and have been an inmate of ———— sanitarium for three months; have been losing ground steadily; losing weight; evening temperature 100° to 101° F.; night sweats two to three times a week—coughing spells a few times every day. Since I have used immunized milk, nearly four weeks, I have gained seven pounds; my temperature has been normal for over two weeks, and since then no night sweats. I cough very little—feel fine and am very much encouraged." Since this report the patient has left the sanitarium, bought a goat and inoculated it with the vaccine which I supplied him with. The improvement continues.

Two patients report: "Feel fine—no cough, no fever—gaining weight right along—I am so grateful to you—words cannot express it." About the other patient, Dr. B. writes as follows: "Mrs. D., whom you so generously supplied with your precious immunized milk, is a different woman—instead of being an invalid, she looks, acts, and feels fine; instead of being prostrated and unable to care for herself, she is able to be about and does a lot of housework—she has gained fifteen pounds in five weeks—her cough is gone and she appears to be well; both she and her husband are profoundly grateful to you for the generosity and your kindness of heart. I join their wishes for your continued success, and hope that you may live a long life for the welfare of mankind."

I report these letters, not because of glorification, but, while they lack in scientific exactness, they convey the message and proof that "immunized milk possesses merits which justify its wide use in all cases of tuberculosis." Immunized milk combines a remedy and food; is within the means of every patient. The cost of production is the same as other milk. The only additional expense is immunizing the animal. Patients who have facilities should immunize a cow or goat and thus obtain the milk at home, avoiding transportation which decreases the immunity's value. Immunized milk is harmless and can be used by everybody and for every purpose. Immunized milk should be used in every case of tuberculosis. "It may do good; it cannot do harm."

The hospitals and physicians reporting these cases availed themselves of my offer to supply immunized milk free of cost to any responsible physician and hospital (New York Medical Journal, October 14, 1913). Some institutions have been supplied for five months to determine its usefulness in different types and stages of tuberculosis. They comprise over sixty cases, and although I have not received final reports these are positive proof of the value of immunized milk as a remedy in tuberculosis of every type and degree. I wish to add that von Behring has recommended the use of milk from animals highly immunized against tuberculosis and considers it "the very best remedy in every case and for every type of tuberculosis. Ehrlich has observed the absorption of immune bodies by way of the intestines demonstrating their presence in the blood. The authority of von Behring and Ehrlich should surely justify the widest use of immunized milk.

Pregnancy and Cervical Cancer.—The natural treatment in such cases would seem to be abdominal Cæsarean section as giving the best chances for the child and mother, while natural labor with a friable diseased cervix can offer little hope for either.

ERRONEOUS DEDUCTIONS FROM TRACHEAL INSUFFLATION.

By Raymond C. Coburn, M. A., M. D.,
New York,
Anesthetist, City and Post-Graduate Medical School Hospitals; Supervising Anesthetist, Beth Israel Hospital.

Tracheal insufflation has introduced new and valuable principles into the science of anesthesia. Some of these principles are of basic character and may be widely utilized to distinct advantage. Care, however, must be exercised in making deductions from the attending phenomena that due recognition be accorded the altered physiological, that accompany the changed physical, phenomena. Failure to do this has led to some erroneous deductions which have been presented with emphasis.

MINIMIZING SHOCK.

At the meeting of the New York Society of Anesthetists, November 20, 1913, charts were exhibited purporting to show that insufflated ether protects against shock as well as nitrous oxide, according to blood pressure tracings. As Crile personally explained:

> Experimental research and clinical observations show conclusively that ether and nitrous oxide anesthesia do not prevent surgical shock, if an adequate amount of trauma is administered. They do show, however, that trauma under nitrous oxide anesthesia produces less shock than does the same amount of trauma under ether anesthesia.
>
> Clinical observations show also that dogs withstand shock-producing trauma far better than man, and that, therefore, in the dog one is obliged to traumatize far more severely and for a much longer period of time, than is necessary to produce equal effects in man.
>
> Any research, therefore, on this subject must take into account this important difference.

Indeed, it is unscientific in principle to hold that ether by insufflation protects against shock better than ether by inhalation, for the anesthesia is produced by the ether in the system acting upon brain and nerve cells, regardless of its method of introduction into the blood stream. Less shock follows operations performed under insufflated ether, not because the latter protects better against shock than inhaled ether, but because tracheal insufflation relieves the extra burden thrown upon respiration, thereby conserving vitality. Ether by inhalation and ordinary technic directly devitalizes the patient through respiratory restriction, as I have elsewhere explained (1). Whether ether is administered with the maximum conservation of the patient's energy or not, the dissolving of lipoid in the cells of the blood, in the blood producing, the eliminating, and the disintoxicating organs—the liver, kidneys, spleen, thyroid, parathyroids, and adrenals—always follows. No injured cell properly functions until restored to normal. Even favorably considered, this always requires time and vitality. Nitrous oxide leaves no chemical record of destruction or injury.

But not alone upon blood pressure is the demonstrable superiority shown in the shock preventing qualities of nitrous oxide, when adequate trauma is administered. Crile's research further shows that neither ether nor nitrous oxide anesthesia, *per se*, causes shock, as indicated by brain cell exhaustion (2); but when trauma is added, the exhaustion in the brain cells under ether anesthesia is three times that which occurs under nitrous oxide anesthesia in the normal subject; and in the individual with impaired resistance, the difference is still greater in favor of nitrous oxide (3).

But the maximum protection against shock is not secured by merely using nitrous oxide as the general anesthetic. In addition, communication between the traumatized field and the central and sympathetic nervous systems must be blocked by a local anesthetic, if surgical shock is to be completely minimized.

WARM ANESTHETIC VAPOR.

Much discussion appears of late regarding the matter of warming anesthetic vapor. In insufflation the vapor is automatically, but artificially warmed to room temperature when it reaches the patient, and from the observation of such and similar phenoma we have been told emphatically that it is useless and fallacious to warm anesthetic vapor (4). Since the prevailing method of administering ether is by the open drop method, in which the vapor is admittedly cold, it becomes a matter of prime importance to determine whether there is a difference in effect between cold and warm anesthetic vapor. Accordingly, this is a matter to be determined in the operating room and not in a debating society. Disregarding, therefore, the theories advanced, the calculation of the calories involved in the warming process, and the many charts exhibited, let us examine the effect as determined by actual administration, for this is the only way in which the physiological action can be determined.

I. In the animal. It has been clearly shown that death follows much more quickly from the administration of the same amount of the usual anesthetics (chloroform, ether, and nitrous oxide) per unit of time when administered cold than when administered warm (5). The heat was used in warming the vapor, and not in vaporizing the anesthetic. Fur coated animals were used, in which Nature provides for a larger proportional loss of heat by the respiratory tract than in man.

II. In the human subject. Writers almost innumerable report, from actual experience in the operating room, a great reduction in chloroform mortality in the warm climates. From the operating room of Johns Hopkins Hospital, where special heat was used in warming the vapor and not in vaporizing the anesthetic, the following has been reported: In a series of several hundred cases, with similar conditions of patients, operations, exposure, and general operating room technic, including that of the covering of the patient, use of solutions, wet towels, etc., the loss of body temperature with cold ether vapor (open drop method) in ordinary operations averaged 1.02° F., and when the vapor was warm the loss averaged only 0.29°; and in very prolonged operations the difference in the loss of body temperature averaged 1.2° in favor of the warm vapor (6). In another series of patients anesthetized with warm nitrous oxide there was no loss of body temperature, notwithstanding the exposure incident to very prolonged operation (7).

The deduction, therefore, is well founded that warm anesthetic vapor tends to conserve both life

and vitality. "The proof of the pudding is in the eating," and not in the calories in the cooking!

PERCENTAGES.

Some of the basic principles of ether and nitrous oxide administration are so similar that they may be said to be identical. For instance, if rebreathing is wrong in principle it ought not to be used at all, but if right in principle, as many believe, including Dame Nature herself, who uses rebreathing to a pronounced degree throughout the economy of both human and animal life, then its use with either anesthetic cannot be scientifically criticized. It is highly inconsistent to scorn rebreathing with ether, and then complacently use it with nitrous oxide, as some do.

Percentages, however, embody a principle that is not identical for both of these anesthetics. In ether administration, after the patient is anesthetized, the anesthesia may be continued by insufflating into the trachea or pharynx eighteen litres of air a minute, plus certain percentages of ether vapor. With such insufflation there is an abundant supply of air regardless of the percentage of ether, that is, the air supply and oxygenation remain practically constant, while the ether percentage may vary widely. After complete anesthesia the percentage of ether required remains quite constant.

In nitrous oxide administration, on the other hand, the oxygen and nitrous oxide both vary, and always inversely; that is, as the one is increased the other is decreased in the same per centum ratio. Furthermore, the depth of nitrous oxide anesthesia is controlled entirely by the oxygenation. To maintain an even nitrous oxide anesthesia and an even oxygenation requires widely varying percentages of oxygen in different individuals, and in the same individual at different times.

The prevailing method of administering nitrous oxide is by rebreathing, even in the tracheal and pharyngeal methods. No matter how accurately the apparatus may indicate percentages, rebreathing completely alters the latter so that it is impossible to tell the percentage that the patient actually inhales. Much of the oxygen is absorbed, but in varying and unknown amounts, while very little nitrous oxide is absorbed after the patient is anesthetized, as its chief function then is to prevent the outward diffusion of the nitrous oxide already in the blood. Besides, carbon dioxide is formed in the body in varying amounts, even during rest in the same individual and, therefore, is excreted in varying amounts, and this further complicates and alters the machine indicated percentages of oxygen and nitrous oxide. It may be stated very positively that, when rebreathing is used, the machine recorded percentage nowise indicates the percentage inhaled, and this is the only percentage that produces any physiological effect. Psychologically, an effect *is* produced by the machine indicated percentage, but that is upon the observer and not upon the patient.

The facts that with nitrous oxide the oxygen is administered solely to maintain the proper degree of oxygenation, or depth of anesthesia; that the percentage or amount used is always *quantum sufficiat*, and is quite variable and must always be adjusted by intelligence, and never by a machine; and all that is useful are proper facilities for adjusting the oxygen to the indicator—the patient's color; and that this adjustment is easily and delicately made without knowledge of the percentage inhaled, warrant the deduction that knowledge of the percentage inhaled neither facilitates its administration nor improves the resulting anesthesia. It is not without significance that almost all of nitrous oxide administration is without knowledge of the percentage inhaled even where such facilities are at hand, and might be employed.

ACAPNIA AND HYPERCAPNIA.

Tracheal insufflation, both with and without general anesthesia, is often maintained for several hours without shock attributable to the insufflation, while the oxygenation is extra good. This form of increased pulmonary aeration without shock has led many to argue that these phenomena show that acapnia is not a cause of shock.

The interchanges of carbon dioxide and oxygen during pulmonary ventilation are on a purely physical basis, and depend upon pressure or tension. Oxygen passes into the blood because the alveolar oxygen tension exceeds that of the blood, and carbon dioxide passes from the blood because the carbon dioxide tension in the blood exceeds that in the alveoli. Alveolar oxygen tension varies widely, depending upon both the percentage of oxygen and atmospheric pressure, whereas alveolar carbon dioxide tension remains remarkably constant, as alveolar carbon dioxide percentage varies inversely with atmospheric pressure.

Normally, intrapulmonary pressure is negative. In tracheal insufflation, however, intrapulmonary pressure is increased, and if very copious, or if the return flow is restricted, this pressure registers from five to fifteen mm. or more above atmospheric pressure. This increased intrapulmonary pressure increases the alveolar oxygen tension and, therefore, facilitates and increases the oxygenation. The alveolar carbon dioxide tension, however, is unaffected by the increased intrapulmonary pressure, as its percentage varies inversely with this pressure, and, therefore, would not be decreased unless there was a concomitant increase in alveolar ventilation.

It is well established that the respiratory centre is controlled, barring only slight exceptions, by the carbon dioxide reaching it. When tracheal insufflation is of small volume, the respiratory movements are such as occur when the airway is absolutely open; and when the volume of insufflation is increased, or the return flow of air is restricted, respiratory movements still occur similarly, but diminish and cease in accordance with the increase in intrapulmonary pressure. Furthermore, spontaneous movements begin immediately on the cessation of the usual copious insufflation of long duration, or where the respiratory movements have been suspended by the increased intrapulmonary pressure, and often the first few movements are of an exaggerated type (8), showing conclusively that tracheal insufflation does not deplete the blood of carbon dioxide. In other words, in tracheal insufflation the marked increase in pulmonary aera-

tion does not increase alveolar ventilation. There is no scientific ground, therefore, for inferring that tracheal insufflation disproves that acapnia produces shock, for tracheal insufflation does not produce acapnia, but, as Volhard showed (9), rather tends to induce an accumulation of carbon dioxide in the body.

Meltzer's advice to interrupt the insufflation several times a minute (10), when correctly interpreted, supports this view. Interrupting the insufflation alternately distends and partially deflates the lungs, and this, in turn, increases alveolar ventilation; and this increase in alveolar ventilation removes the excess of carbon dioxide retained by the insufflation. Uninterrupted tracheal insufflation, then, produces hypercapnia and not acapnia, and it is undoubtedly to this action that a part of the benefit of tracheal insufflation, as used in the administration of ether, is due.

This important action of tracheal insufflation ought not to be overlooked, for the prevention of acapnia, or preferably the maintenance of a slight hypercapnia, is of great value in the administration of anesthetics, as shown by Henderson (11).

CONCLUSION.

Tracheal insufflation is an excellent means to desirable ends, but care should be exercised in making deductions from the attending phenomena, that the use and development of other methods and systems of administering anesthetics may not be prejudiced, but rather that the fundamental principles may be recognized in their proper relation, and applied, so far as useful, throughout the whole realm of general anesthesia.

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Bretton Hall, Eighty-sixth Street and Broadway.

THE IDENTITY OF THE LANE KINK WITH THE JOSEPH PRICE ELBOW.

By J. W. Kennedy, M. D.,
Philadelphia,
Visiting Surgeon, Joseph Price Hospital.

I have been asked a number of times by visitors attending my clinic in the Joseph Price Hospital, to say something about the Joseph Price elbow, meaning the condition now known to our profession as Lane's kink. Thirteen years ago, I heard the late Joseph Price call attention to Lane's kink. We associates and assistants at that time called it the Joseph Price elbow, from the demonstration that Doctor Price was in the habit of making while discussing the lesion. It was his custom to hold his elbow up as a simile in demonstrating the kink, which was produced by the fixed point of the ileum within a few inches of the ileocecal valve. Recently, Doctor Hall, of Vancouver, B. C., while visiting my clinic told me that he had heard Doctor Price call attention to this condition over seventeen years ago, and that recently, while visiting Mr. Lane's clinic, he had spoken of the incident to Mr. Lane. It is not my object to take any of the glory or credit which is due Mr. Lane for his magnificent work done along this line and in all conditions which produce stasis of the gastrointestinal tract. One cannot take glory from a truly great man; he always welcomes the work of another along any line in which he is interested.

During my twelve years' experience with Doctor Price, I never knew him to remove the appendix without calling attention to the necessity of running the last twelve inches of the ileum, on account of its liability to be fixed in the pelvis or kinked by a band elbowing the bowel. I have seen him a great number of times release this band by a transverse incision, straightening out the bowel, and then suture the raw area in an opposite direction to the incision. This is exactly what is done with Lane's kink. No operator living or dead has done more to encourage thorough work from the standpoint of releasing all adhesions and making a thorough toilet of the abdomen, than the late Joseph Price. He can certainly be called the father of the pathological era in surgery, as no operator so constantly sought the distal lesion. Never was he needed more than at the present hour.

The great number of postoperative complications which are daily coming to my attention, point strongly to the necessity of more complete primary work. I never read a modern textbook which advocates incomplete surgery or attempts a classification of the acute infectious lesions into operative or nonoperative stages, without the greatest apprehension for the mortality records of the future surgeon in these vital lesions. If the leaders of the American profession could have witnessed during any six months, the Joseph Price surgery, there would have been no physiological age in surgery, which is responsible for the incomplete work of the present hour and its postoperative sequelæ. I do not make this allusion to the votaries of the physiological age of abdominal surgery with any idea of unkind criticism, but from a therapeutic standpoint, as a plea for more complete primary work in all conditions where an undiscovered partial bowel obstruction may later become a complete postoperative obstruction. I trust it will not be long before the profession realizes that the surgical treatment of peritonitis cannot be established *per se*, but must be directed toward, and be consistent with the complications of such a condition, viz., bowel obstructions, distal abscess, etc.

Nothing has been more unfortunate than the teaching of the physiological surgeon who has established all his working factors to prevent absorption of toxins and bacteria from the peritoneum, and has ignored all other sources of absorption. I refer briefly to this incomplete toilet of the popular surgery of this hour in connection with the Joseph Price elbow or Lane's kink, because this condition is often the starting point of the postoperative bowel obstruction of the physiological surgeon and his teaching prevents its release

through fear of increasing peritoneal absorption of toxins by attempting to break adhesions or make a toilet of the abdominal cavity. It is my opinion that the mucous side of the bowel in peritonitis and of the distended bowel is a more fertile source of absorption of toxins than its serous surface.

I have written a number of papers along this line and I rejoice that so influential a teacher as Mr. Lane is calling attention to the toxemia incident to all conditions producing local or general stasis of the intestinal canal. I am sure that Mr. Lane's teachings will help redeem the pathological age in surgery, as, in the more chronic form of intestinal stasis, they can even more forcibly be applied to acute peritoneal conditions and will be a strong plea for the radical toilets of the late Joseph Price. It is not a question as to whether or not such teaching can be applied to the acute septic cases, as far as the disciples of Joseph Price are concerned, it is a matter of history and every day application. I feel that the hour when the septic conditions of the abdominal cavity were taken from the column of urgent surgery and attempts were made to place them on the chronic waiting list and class them into operative and nonoperative stages, was the most disastrous hour abdominal surgery has ever experienced. The postoperative complications and the repeated operations point the way to better primary work. These conditions positively do not occur after thorough primary work.

I never have been able to reconcile the fact that those operators who recognize the toxemia which may emanate from bowel stasis of the chronic form, completely ignore such source of toxemia when dealing with the more acute conditions; when the fact is, that in the presence of the acute perforative lesions, followed by partial or complete bowel stasis or obstruction, we have every condition most favorable for the absorption of virulent toxins which emanate from a local gangrenous point of the mucous membrane of the obstructed bowel. We cannot afford to hide behind the peritonitis and be flanked by even a more dangerous source of toxemia from the enteron. We have proved by our complete toilets that the bowel in peritonitis can be handled with a less degree of shock than the normal bowel, and that very little absorption takes place from the serous surface of the already peritonitic bowel.

It is not my intention to claim a selfish priority for Doctor Price in this condition; were he living he would not have so desired. Probably no operator was more original in his surgery than he, yet I doubt if there is a single procedure or instrument which bears his name; certainly not with his consent. An intimate twelve years' association with Doctor Price demands that I say that he was always a surgical philosopher, never a professional hypocrite, and his numerous petty enemies certainly testify to the fact that he never was a professional diplomat. The *I, my,* and *me* of the profession were most distasteful to him. He led such an energetic, unselfish professional life and died so humbly, that I deem an occasional allusion to his magnificent pioneer work will not be objectionable.

241 North Eighteenth Street.

IDIOPATHIC SPLENOMEGALY; SPLENECTOMY.

By Albert E. Sellenings, Ph. B., M. D.,
New York,

Case. H. B., aged twenty-three years, cigar maker, was admitted to my service at Gouverneur Hospital, July 5, 1913. Mother and father living and in good health; patient used alcohol occasionally; venereal history denied; no history of acute or chronic illness except present condition. His parents stated that at the age of one year, he fell out of bed and that to this circumstance they have attributed the abdominal swelling, which gradually increased in size, causing increasing pain, to which he had become more or less tolerant. However, two weeks prior to date of admission, he began to experience severe and increasing pains in the epigastrium and left side of abdomen. These pains were paroxysmal at first, later becoming more severe and continuous, when he sent for an ambulance and came to the hospital. The patient was an anemic, poorly nourished adult; heart and lungs apparently normal. There were no lymphatic gland enlargements. The striking feature was a large solid tumor lying in the left side of the abdomen and extending from its dome to well below the umbilicus. The tumor anteriorly presented a distinct and sharp border. The liver was apparently not increased in size. There was no ascites. Veins of the abdomen were not prominent; no jaundice or pigmentation. A diagnosis of enlarged spleen with undetermined etiology was made. Examination of urine showed a trace of albumin. Von Pirquet test was positive; Wassermann was negative. Blood examination, July 5th: Hemoglobin, 70 per cent.; red cells, 4,800,000; white cells, 8,000; polynuclears, 81 per cent.; lymphocytes, 17 per cent.; eosinophiles, 2 per cent.

Operation for removal of the spleen was advised, but consent was not given until July 22d. Under gas-ether anesthesia an incision six inches in length was made at the outer edge of the left rectus. A few adhesions confined to the upper portion of the phrenic surface were encountered and easily freed. For a better exposure and delivery of the spleen, an incision about three inches in length was made at right angles to the vertical incision, beginning at the junction of the upper and middle third of the latter. Inspection of the gastric surface revealed, in addition to the usual vessels at the hilum, two anomalous sets, lying above and below the splenic vessels, but quite distinct from them. These vessels were clamped and the spleen was removed. The vessels were ligated and the instruments were released. The abdominal wound was closed in the usual manner by tier suture. A drain was inserted leading to the region of the ligated vessels. On the second day following the operation the patient's temperature rose to 105° F., with a remission to 100.4° on the fourth day. On the fifth day it again rose to 105°, but on the sixth day it began to decline. A superficial infection at the site of the drain delayed his discharge from the hospital until August 22d. The pathological report of Doctor Norris was as follows:

Many thanks for your detailed information. Unfortunately can give you little information concerning etiology of condition. It is an example of a marked chronic interstitial splenitis and perisplenitis. There are large areas of dense hyaline connective tissue, some of which show slight calcification. It is not a Gaucher splenomegaly nor is it malarial as there is no black pigment. There is no evidence of tuberculosis. Occasionally in syphilis a large spleen like this is found. Where there is such a marked perisplenitis one usually finds the same process in the liver.

Blood examination, two days after operation, showed: Red cells, 4,970,000; white cells, 9,200;

polynuclears, 96 per cent; lymphocytes, 3 per cent.; eosinophiles, one per cent. On September 13th, the patient was readmitted to the hospital, suffering from an anal abscess, which was evacuated. Following this the blood picture was as follows: Red cells, 4,850,000; white cells, 11,000; lymphocytes, 19 per cent.; polynuclears, 81 per cent.; hemoglobin, 72 per cent.

The early history of a fall in this case, it is believed, has no bearing as an etiological factor, and the splenomegaly must be considered under the classification of idiopathic enlargement. The pathological examination sheds no light on the etiology.

In a statistical summary Johnson has collected seventy-four cases of idiopathic hypertrophy of the spleen up to 1908. Of this number fifty-three ended in recovery and twenty-one fatally, giving a mortality of 28.3 per cent. Carsten in a summary of splenectomies up to January 1st, 1905, collected a total of 739 cases, among which were hypertrophies "without a qualifying word" to the number of 176 cases. Of these 120 terminated favorably and fifty-six fatally, placing the mortality at thirty per cent. In the *Journal A. M. A.* for January 1, 1910, Mayo reported two cases of simple hypertrophy in a total of ten splenectomies for various conditions. Later a report of twenty-seven splenectomies was recorded by the same author in *Surgery, Gynecology, and Obstetrics* for March, 1913, and of this number thirteen are classed as of the chronic diffuse type or primary diffuse hyperplasia of the spleen. The mortality in these twenty-seven cases was 7.4 per cent. The weight of the spleen in the chronic diffuse types varied from 425 grams (two and one half times normal) to 1,670 grams (nine times normal), with an average of 1,089 grams (six times normal). The spleen in the author's case weighed 1,587.6 grams (approximately eight and one half times normal) and measured 28 by 15 by 7.5 cm.

In November, 1913, four months after operation, it was reported that the patient had gained fifteen pounds.

104 East Thirty-first Street.

SOURCES OF ERROR IN THE WASSERMANN TECHNIC.

By Chester T. Stone,
New York.

From the earliest times various methods have been devised for the detection of syphilis. Prior to 1905, when Wassermann made known his complement fixation test, aside from unmistakable clinical evidence, the empirical "mixed treatment" method was practically the only accepted procedure. The subsidence of the patient's symptoms under this form of treatment was regarded as conclusive proof of the presence of syphilis.

Discontented with the findings of Wassermann, other workers have striven to outdo him with innovations in which human serum or human amboceptor, cholesterinized antigen, etc., are employed as reagents; while to insure a greater percentage of positive reactions, the tests are conducted in the incubator for an hour, the water bath for half an hour, or in the icebox for six or more hours, according to the predilection of the worker. The tendency apparently is to err somewhat on the side of positive results.

While it is incontestable that with the empirical method many syphilitics escape detection, is it not possible, yes, even probable, that, sad as it may seem, not an inconsiderable number of innocents are now submitted to a tedious, unnecessary séance with mercury, iodides, salvarsan, or all three, as the result of careless technic, faulty reagents, and capricious ideas as to just which of the many procedures should be adopted?

Indeed, the personal equation not only dominates the various tests, but affects also no small number of workers. Not infrequently does one hear some laboratory enthusiast say: "If you want to get more positives, use the method I have adopted." The welfare and happiness of the patient seem to be overshadowed by the aim to make the serum in question "come positive." Many workers apparently labor under the delusion that if an individual applies for a complement fixation test, that person must have syphilis, and every effort is directed toward obtaining serological proof.

In a number of medical institutions and elsewhere, Wassermann tests are done according to the technic which appeals most to the operator. In many instances the workers are instructors of men who are about to graduate into the profession, and who, for at least the first few years after graduation, adhere closely to their college notes as infallible fountains of precision. With the numerous sources of error in the present technic, is not the responsibility upon these instructors most weighty?

Apparently the personal equation is of more import than the method. Mr. A goes to a physician who draws the blood and sends samples to four different laboratories, all of equal repute and reliability. Laboratory 1 sends a report of "four plus," laboratory 2, "three plus," laboratory 3, "two plus," and laboratory 4, "negative." In all probability the reports of laboratories 1 and 2 will, in the physician's mind, outweigh those of 3 and 4.

This perplexing state of affairs is directly traceable to the lack of a universally recognized procedure in conducting the serological tests, and until methods are so perfected, proved, and standardized that the report "positive" can be sent from every laboratory with conviction back of it, the aim should rather be truth; to give the patient the benefit of the doubt. The results in this respect should be as reliable as now is the case with the tubercle and diphtheria bacilli.

The following tabulation, showing the many sources of error, proves that present methods permit of no uniform reliability.

I. Commercial and home made reagents:
- (1) Standardized, by skilled workers.
  Standardized, by unskilled workers.
- (2) Nonstandardized.
- (3) Deterioration.
- (4) Not titrated and checked.
- (5) Titrated carefully.
- (6) Titrated carelessly.
- (7) Infrequent titration to test stability of standard.
- (8) Frequent titration to test stability of standard.

II. Individual reagents:
- (A) Complement:
  - (1) Made from one pig.
  - (2) Made from several pigs.
  - (3) Oat fed pigs (stronger).
  - (4) Dilutions used.
  - (5) Careful titration before each test.
  - (6) Nontitration before each test.
  - (7) Inactivation, by too hot water bath.
    Inactivation, by too cold water bath.
  - (8) Proper judgment as to amounts used.
  - (9) Old complement used.
  - (10) Fresh complement used.
- (B) Antigen:
  - (a) Paper. } (carefully titrated and
  - (b) Powder. } intelligently used.)
  - (c) Syphilitic fetus liver.
  - (d) Human heart. } (not titrated and
  - (e) Beef heart. } amounts assumed.)
  - (f) Guineapig liver and heart.
  - (g) Cholesterin.
- (C) Amboceptor:
  - (1) Human. (a) nontitrated.
    (b) titrated (liquid).
  - (2) Sheep. (c) old (paper).
    (d) concentrated.
- (D) Corpuscle suspension:
  - (1) Human. (a) carefully washed.
    (b) carelessly washed.
    (c) not washed.
  - (2) Sheep. (d) variation of complement in blood.
    (e) contaminated.
    (f) old or deteriorated.
- (E) Saline:
  - (1) Improper strength.
  - (2) Improper amounts.
  - (3) Unclean or contaminated.
- (F) Other sources of error:
  - (a) Uncleaned tubes and other glassware.
  - (b) Mechanical hemolysis from too vigorous shaking.
  - (c) Water in tubes.
  - (d) Chemicals used to cleanse tubes.
  - (e) Incubation methods:
    - (1) Icebox.
    - (2) Incubator, too hot.
      Incubator, too cold.
    - (3) Water bath, too hot.
      Water bath, too cold.
  - (f) Hemolysis from contact with clot.
  - (g) Other diseases and conditions, as,
    Carcinoma.
    Leprosy.
    Yaws.
    Pellagra.
    Alcoholism.
    Hearty meals.
  - (h) Care, accuracy, and thoroughness, or *vice versa*.

The foregoing list proves conclusively the imperative need of some standard; but what shall the standard be, and who shall dictate the method or methods to be used? One remedy, it seems, would to a great degree clear up the difficulty, namely, the adoption by all workers with the Wasserman test of a recognized method, which has been tried and found reliable, such as that adopted by the United States army; or could not the American Medical Association appoint a committee to investigate the various technics now in use and approve the method or methods found to be most reliable? Laboratory workers could then cooperate by adopting the methods selected and provide not only a standard, but a check upon each other's results. Until a standard test is adopted, a temporary solution for the difficulty would be for each laboratory to affix to its reports a brief statement as to the methods, reagents, and apparatus employed. In this way a physician receiving reports from several laboratories, would be in a position intelligently to discriminate between, and interpret variations in findings, should such occur. As regards manipulation, the test itself is simple after a few weeks of laboratory instruction under competent guidance. Proper instruction should be given also to the end that all reagents be titrated and standardized alike, and with a view to improving the *modus operandi*. The aim should be to strive, not for something more simple, but for a uniform and dependable method.

40 East Forty-first Street.

NEOSALVARSAN IN CONCENTRATED SOLUTION.

By Joseph Girsdansky, M.D.,
New York.

The excuse for the present communication lies in calling attention to a method for the administration of Ehrlich's arsenical compound, a method which is generally considered, if considered at all, as dangerous and ineffective. With careful attention to the details of technic, this method has had no harmful results, immediate or secondary, and has proved very efficacious in my rather limited experience.

The technic employed consists in the use of a ten c. c. Record syringe, a sharp needle, and freshly distilled water. Granted the harmlessness and efficacy of this method, its extreme simplicity must appeal to patients and doctor, especially the general practitioner. There is no expensive or intricate apparatus to employ and sterilize, no hospital bed necessary, none of the mental anguish usually experienced by patients given salvarsan; besides, treatment may be given in physician's office if desired; the entire operation lasting three or five minutes with little more fuss than a hypodermic injection ordinarily entails.

I have given about forty such injections, the first twenty-five of which were administered in a hospital where the patients were under observation for one day or longer. The first man treated vomited and complained of slight headache after the first injection. He explained this by "feeling nervous." No other general reaction, no chills, rise in temperature, malaise, etc., were observed in the entire series. Of local reactions, there was but one case: slight induration and marked pain due to infiltration of the tissues, probably caused by a back flow of the neosalvarsan on withdrawing the needle. Since then, I inject several c. c. of distilled water after the neosalvarsan and have had no such action since.

Since a ten c. c. (0.9 gram) solution of the full dose of neosalvarsan is a highly concentrated one and each drop in the tissues would be exceedingly painful, extreme care must be taken with apparently minute details in the technic. This in full, as employed, is as follows: About an hour before appointment (most of the cases were treated in the office), I had my druggist prepare several ounces of distilled water. The patient is placed in a re-

clining position on the table and a tourniquet is applied above the elbow; the median basilic vein is usually most prominent. The skin is then painted with iodine. The neosalvarsan which has been dissolved in ten c. c. of freshly distilled water is drawn up into a ten c. c. Record syringe to which a sharp needle is attached. The needle is then inserted into the vein and a little blood drawn up into the syringe to prove entry into the vein. The tourniquet is then removed and the solution injected fairly rapidly. Then five c. c. of distilled water is injected through the needle to wash out any solution that might come into contact with the tissues on withdrawal of the needle.

The main danger is going through the vein. The small solution and short time occupied in injecting it reduce this danger to a minimum. The only other form of administration that approximates the foregoing in simplicity of execution is the intramuscular injection of neosalvarsan, but this is exceedingly painful and not infrequently causes marked induration, abscess, or sloughing; even the suspension in glycerin to which cocaine is added, is exceedingly painful.

And now as to the efficacy of this form of treatment. My cases in private practice (fifteen) have all been too recent to permit of testing for a negative Wassermann, but all these cases, without exception, have been markedly improved symptomatically of secondary and tertiary lesions. The great majority showed immediate improvement, within several days, after the first injection. I will briefly cite some of the most interesting cases:

Case I. S. K., aged thirty-six years, salesman; married fifteen years; four children alive and well. Specific history denied emphatically. History of gonorrhea eighteen years ago. No other illnesses. Six months ago had a leftsided hemiplegia which lasted for a week. Since then patient had become morose, jealous, almost maniacal. Wassermann showed four+. After one injection of neosalvarsan in concentrated solution intravenously patient's headaches disappeared, temperament became again normal and patient was apparently cured. Since then he received another injection of neosalvarsan and weekly injections of mercury salicylate.

Case II. A. F., aged twenty-six years, hatter; married; one child. Initial lesion nine months ago. Came to office with numerous ulcers in mouth and pharynx; unable to talk above a whisper; marked general eruption. After one injection patient's voice soon returned to normal, eruption disappeared, and general condition markedly improved.

Case III. Salesman, aged twenty-five years, single. Initial lesion one year ago. Came to office with extensive tubercular syphilides of several months' duration. After one injection eruption disappeared in less than a week.

233 East Broadway.

A POSSIBLE SOLUTION OF THE MERCURY BICHLORIDE PROBLEM.

By James H. Heacock, M. D.,
New York.

The numerous cases of bichloride of mercury poisoning reported in the lay and medical press during the past few years, together with the numerous suggestions from both sources for their prevention, are my only defense for offering the following dissertation.

In the past, the standard bichloride tablet containing corrosive mercuric chloride 7.3 grains and ammonium chloride 7.7 grains has been placed upon the market by the manufacturers in the form of a spherical tablet, usually white in color. In consequence, the lay consumer has frequently mistaken a bichloride tablet for a five grain calomel and sodium bicarbonate tablet. The manufacturers thereupon sought to overcome this difficulty by giving a light blue color to the tablet and stamping upon its face the word "poison."

The light color thus given to the tablet could not readily be distinguished, in the presence of artificial light, from the white calomel and soda tablet or various other tablets. This contention is borne out by the fact that on February 17, 1914, the New York board of health amended the Sanitary Code (Section 67a) to the effect that all tablets containing more than one tenth of a grain of bichloride of mercury should be manufactured in a distinctive form and color. This order took effect on March 1, 1914. Several manufacturers thereupon placed upon the market a coffin shaped tablet of a deeper blue color.

The number of accidental cases of bichloride of mercury poisoning which have occurred since the new law as to form and color of these tablets has gone into effect, seem to force one to the conclusion that the difficulty has not yet been overcome.

An editorial article appeared in the May 30, 1914, issue of the New York Medical Journal, referring to the suggestion of Dr. William Edward Fitch, of New York, to use a tablet composed of the following ingredients: Bichloride of mercury, 7.3 grains; 7.7 grains of ammonium chloride, and 1.25 grain of potassium antimonium tartrate. Doctor Fitch asserts that this tablet retains the full antiseptic properties of the corrosive sublimate with sufficient antidotal properties to offset any dangers to the human economy if the tablet should be ingested by mistake. However, I believe that Doctor Fitch also states that this tablet is still in a state of animal experimentation and until the statements of Doctor Fitch are fully proved in regard to the human economy, I suggest that, in conformity with the law, all bichloride tablets be manufactured in coffin shape, each to be stamped with the word "poison" on upper and lower surfaces, and to be colored a jet black or an intense scarlet; and to be placed in dark colored bottles having spinous projections from their surfaces. The latter of itself has proved to arrest attention on the part of the prospective consumer. The label should have the usual red field with the word "poison" in white letters.

The reason for my choice of these colors is that in any light the tablet is easily recognized as jet black or scarlet, which as far as I know are never used in the manufacture of any medicinal tablets, although these colors are sometimes used in the coating of pills and lozenges. The materials used to produce these colors in such tablets would in no way prove injurious nor would they in the slightest degree affect the antiseptic or bactericidal properties of the tablet.

114 West Sixty-fourth Street.

Therapeutic Notes

Radium Treatment of Epithelioma.—T. Nogier, in *Lyon médical* for February 1, 1914, reports a case of nasal epithelioma in a man eighty years of age, which was completely eradicated, leaving a barely perceptible scar, by a single exposure to radium (107.8 milligram hours). A shield of aluminum 0.2 mm. thick was used over the surrounding tissues. One month after the treatment the skin at the former seat of the lesion was normal in color. Nogier lays stress on the differences between the x rays and the rays given off by radium. The former are practically arrested by a sheet of lead two to three mm. thick, while the gamma rays of radium will traverse as much as 100 mm. of lead. Not all skin lesions heal as well, however, under radium as under x ray. Personal researches have convinced Nogier and his coworker, Regaud, that this discrepancy is related to histological differences between individual neoplasms. Where an epithelioma shows one type of cellular constitution, it will yield quickly to radium and not recur, even if originally covering a large area, whereas if it is otherwise constituted, it may show a reduction at first, but recur and progress rapidly, even though originally a small growth. In deep neoplasms the most certainly beneficial procedure—in inoperable cases—consists in a combined use of radium with intensive x ray treatment (some of the rays in the latter measure being excluded by a shield). An extensive deep irradiation is required to reach involved lymphatics as well as the primary focus.

A Simple Method of Using Iodine Vapor in Nose, Throat, and Ear Practice.—A. Maurice, in *Archives générales de médecine* for February, 1914, having observed how readily iodine vapor can be set free from iodoform by heating the latter with the electric cautery, states that he had constructed a very simple insufflator consisting of a small glass bottle, a rubber bulb and tube, and an ordinary electrocautery, the platinum extremity of the latter dipping down to the bottom of the bottle, while a convenient handle is attached to its other extremity. The whole apparatus, which is light, is held by the operator by this handle, his other hand (or an assistant) manipulating the rubber bulb. The outlet for the iodine vapor is conical, so that a number of differently shaped and curved attachments can readily be adapted to it. Metallic parts are reduced to a minimum to avoid oxidation, even the conical outlet being of hard rubber.

With this apparatus excellent curative results can be obtained in a variety of conditions. In follicular tonsillitis, insufflation of a little nascent iodine vapor into the crypts through a small curved tube brings about prompt recovery. After a few insufflations the crypts are completely disinfected and tend to become smaller. The entire tonsil atrophies rather easily, the necessity for its surgical removal being thereby obviated. In maxillary or frontal sinusitis, after either catheterization through the natural channels, intranasal puncture, or alveolar penetration, the surfaces in these sinuses can readily be covered with a deposit of iodine through an antral or frontal cannula adapted to the iodoform bottle. The fungous covering of the lining membrane rapidly subsides, and the odor disappears generally after the very first sitting. In polypoid ethmoiditis the iodine vapor is insufflated at the middle meatus.

Suppurative otitis media, especially in its chronic form, is greatly benefited by the iodine treatment. With a small catheter, shaped like Hartman's cannula for irrigation of the attic, the iodine vapor can readily be introduced, even into the mastoid antrum.

In ozena, the treatment causes the odor rapidly to disappear, the secretions to become fluid, and the mucous membrane to return to its normal color. Where the membrane is in an advanced state of atrophy and paraffin injections are no longer borne, the introduction of nascent iodine vapor causes a more rapid improvement than any other measure.

The author reports two illustrative cases of obstinate maxillary sinusitis and otorrhea, respectively, in which iodine vapor brought about prompt curative results—immediate deodorization and almost immediate arrest of secretion—where the ordinary procedures had failed.

Control of Hemorrhage in Tonsillectomy.—Cornelius G. Coakley, in the *Transactions of the American Laryngological Association* for 1913, states that even upon using general anesthesia in adults subjected to tonsillectomy, he has observed but little more hemorrhage in these cases than in children. If one carefully dissects the pillars, then takes a wad of gauze, rolled into a sphere somewhat larger than the enucleated tonsil, and places it in the wound after the operation, hemorrhage will be readily controlled. A surprisingly large wad of gauze can be applied and will stay in place, the pillars of the fauces holding it. A string may be attached to the wad, and after the removal of the first tonsil, one can soon proceed and dissect out the other. Such a pad will stay in place for one or two hours, and even will often retain its position when the patient vomits.

Treatment of Asthma in Children.—Comby, in *Quinzaine thérapeutique* for November 25, 1913, is quoted as advising against inhalations of either nitrites, ether, or chloroform in the treatment of the asthmatic paroxysm in children. The measures he recommends comprise the placing of a spiced plaster or a few dry cups on both the anterior and posterior aspects of the thorax, the securing of fresh air, and the administration of Dover's powder every two hours:

℞ Pulveris ipecacuanhæ et opii, ... gr. [illegible] (0.05 gram);
Saccheri lactis, ... gr. viiss (0.5 gram).
M. et ft. pulvis.

Three fourths of a grain (0.05 gram) of the Dover powder may be given *per diem* for each year of the child's age. Each fractional dose may be given in a teaspoonful of water. Instead of the above, three or four drops of the following combination may be administered in a teaspoonful of sweetened water three or four times a day:

℞ Tincturæ belladonnæ foliorum,)
Tincturæ lobeliæ, ...) ää ℥xvi (1 gram);
Tincturæ aconiti, ...)
Fluidextracti grindeliæ, ... ℥iss (0.1 gram);
Extracti opii, ... gr. viiss (0.5 gram).
Misce.

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EDITORS

CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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NEW YORK, SATURDAY, JUNE 20, 1914.

ALL ABOARD FOR ATLANTIC CITY.

Atlantic City alone in this country shares with New York the ability to absorb apparently unlimited crowds of people at short notice. Our readers may decide at the very last moment that they would enjoy the coming meeting of the American Medical Association and may journey thither without fear of being left out in the cold. To be sure, the far sighted will get the best accommodations, but a physician scarcely needs the artificial dignity conferred by elaborate housing and may without loss of prestige find excellent board and a comfortable room in one of the countless smaller hotels and high grade boarding houses of the celebrated resort. The NEW YORK MEDICAL JOURNAL expects, as usual, to present an accurate and complete report of the proceedings of the House of Delegates and summaries of the principal papers read in the various sections, and with that end in view is sending a staff of over twelve physician correspondents to the meeting. The proceedings up to the hour of going to press will appear in our issue for June 27th, and will be concluded in that for July 4th. We wish all visitors the best of weather, valuable instruction, improved health, and a good time.

THE ALIEN IN RELATION TO ACUTE INFECTIOUS DISEASES.

In this issue of the JOURNAL, Dr. L. L. Williams, Chief Medical Officer at Ellis Island, calls attention to an aspect of immigration which is well worth the serious consideration of all local health authorities. The immigrant is often the innocent cause of many epidemics of the infectious diseases of children in communities which have observed every precaution to prevent those maladies from obtaining a foothold. Under existing conditions it appears that about thirteen per cent. of all immigrants are detained for one or more days while their right to be landed is under consideration. During the fiscal year 1913, 258 cases of measles and 100 cases of scarlet fever developed during this period of detention. Many of the ships have inadequate means for preventing the spread of disease on board, and the companies make imperfect provision for the isolation of the sick on the barges which convey the immigrants from the piers in New York to the Ellis Island station; consequently it often happens that hundreds of persons have been exposed to infection before they fall into the hands of the immigration officials. The statistics which Doctor Williams gives indicate very plainly that the great majority of those who contract these diseases during their detention at Ellis Island have been exposed during the voyage or while in transit on the barges from the piers. The exposure in the detention rooms at Ellis Island is reduced to the lowest degree possible by the fact that the temperature of all children under ten years old is taken daily and a constant lookout kept for the first manifestations of any of the eruptive fevers. But even with these precautions, the crowded condition of the detention rooms makes it impossible entirely to eliminate the danger from this source. It therefore happens that, from the start of its voyage to the time of its final discharge from Ellis Island, the immigrant child is constantly exposed to infection from all the eruptive fevers. Doctor Williams estimates that probably 1,375 persons yearly leave the port of New York apparently well, only to acquire measles or scarlet fever within the incubation period of these diseases. The significance of these figures is appalling. Holt estimates that the general mortality of measles is from four to six per cent., and of scarlet fever from twelve to fourteen per cent. These are conservative estimates; applied to the figures in question they mean that over one hundred children yearly land at New York sound and well, doomed to die within a few weeks nevertheless from an entirely preventable disease.

But the deaths and disabilities among the immigrant children do not tell half the story. To read it

to the end, one must visit numberless communities all over the United States, where fresh epidemics are started or old ones kept constantly alive by the arrival of passengers from almost every immigrant ship. The remedies proposed by Doctor Williams involve changes not only in the management of cases at Ellis Island, but also on the barges and on shipboard; of all the remedies it appears to us that a change in the way immigrants are handled by the steamship companies is by far the most important. In the early part of last century, steerage ships which arrived with less than ten deaths for every hundred passengers were considered exceptionally healthy, and twenty to thirty deaths were not at all uncommon; today a single death on board is sufficiently uncommon to be noted in the newspapers. This change has been brought about solely by compelling the shipowners to make conditions on board keep pace with the improvements in ventilation and heating of houses on land. A corresponding change in the incidence of infectious diseases among children could be brought about by compelling the same attention to details of epidemic management at sea as is now universally required on land. This would simply mean the maintenance of an efficient health department as an essential part of every passenger ship's crew. That such a plan is not impracticable is shown by the action of the Italian Government, which now places on board all vessels leaving its ports with any considerable number of steerage passengers a royal commissioner, who is a trained sanitary expert from the medical corps of the navy, and who has entire supervision of all matters which may affect the health of the passengers. Such a plan is a step in the right direction, and until similar procedures are universally adopted, we cannot hope to have the dangers of infection reduced to that minimum which is justified by the advances of sanitary science.

RADIUM IN INOPERABLE CANCER.

The report of the Radium Institute of London for 1913 contains interesting features. The fact that the institute rigidly declines to treat operable cases renders its results particularly valuable in the sense that the use of radium is put to as severe a test as could well be conceived. The section bearing directly on cancer, including rodent ulcer, includes 601 cases; of these fifty are described as "apparently cured" and 183 as improved. Although these figures seem disappointing owing to the absence of actually cured cases, it should be borne in mind that justified conservatism demands the postponement of any positive assertion in this connection until several years have elapsed after the discharge of the patients.

While the results in the treatment of cancer of the moist mucous membranes seem to have been discouraging, the considerable temporary benefit obtained in some cases of lingual and esophageal cancer by modifications of technic, indicates clearly that, if treated in time with radium, some of the patients might have been saved. Especially suggestive also were the effects in uterine carcinoma of radium, which, in the words of the medical superintendent of the institute, Mr. A. E. Hayward Pinch (*Lancet*, May 23, 1914), "still continues to yield the most gratifying results." Indeed, according to this conservative authority, the effects of radium treatment in inoperable uterine carcinoma are far in advance of those obtained by any other known medical or surgical methods. The local manifestations of the disease are benefited in the most striking fashion, and the complete disappearance of fungating growth, arrest of hemorrhage and discharge, healing of ulceration, and relief from pain, are phenomena of almost daily occurrence. In favorable cases, moreover, the treatment appears to exert a distinctly retarding influence on the dissemination of metastatic deposits and thus to arrest the progress of the disease. It is not possible, however, to speak of "cure" even in these latter instances.

Mr. Pinch urges that great care be exercised in the treatment of recurrences which make their appearance within six months of the performance of Wertheim's operation. The function of the trophic nerves of the pelvis seems often to be seriously impaired by the extensive and elaborate dissection which is associated with this method of hysterectomy, and for this reason the amount of radium used should be small, not exceeding fifty mgm., the screening not less than 1.5 mm. of lead, and the total exposure not longer than twenty hours, spread over four or five days. Unless these precautions are observed, a severe and extensive destructive reaction may follow the application of radium. He urges also that, in all cases where radium is applied within the vagina, the patient be instructed to douche freely night and morning for at least six weeks after the termination of the treatment, as unless this is done an adhesive vaginitis not infrequently occurs. In some extremely susceptible subjects a transient proctitis has been noted to follow upon intravaginal treatment.

The screening employed in cases of carcinoma of the uterus was of either one mm. of silver or two mm. of lead, but the thinner screening was adopted only when the cervical canal was patulous and the tube could be introduced into its cavity.

MOUNTAIN SICKNESS.

The French journal of the Swiss Alpine Club, *L'Echo des alpes,* reports a steady increase in the number of fatal accidents among mountain climbers; such catastrophes were 140 in 1912 against 125 in 1911. An extraordinary feature of the melancholy statistics of accidents in mountain climbing is that their occurrence is by no means limited to the inexperienced. A considerable number of these fatalities are doubtless due to the phenomena of mountain sickness, the symptoms of which were first described by the Jesuit Acosta in 1590. At heights of 3,000 to 4,000 metres the climber experiences a sensation of faintness and languor accompanied by rapid heart action, air hunger, headache, nausea, and vertigo. At greater heights there is complete inability for sustained mental or physical exertion of any kind, beside tinnitus aurium and dimness of vision, and possibly hemorrhages from the conjunctiva and nasal mucous membrane. Muscular fatigue is an important element also in the production of these symptoms. They are not often experienced by the passive tourist using the funicular railway to the top of the Jungfrau.

Mountain sickness has been well described by de Saussure and Sinclair in the accounts of their ascents of Mont Blanc and has been recently studied by Leonard Hill. The scientific explanation of the phenomena, which are really a form of asphyxia due to anoxhemia, was made by Paul Bert in his classic work, *La pression barométrique,* published in 1878. There is probably also a psychical element contributory to the milder forms of mountain sickness which so often result in serious accidents in the Alps. This is the sensation of solitary awe and fear often felt at great heights, associated with an intense feeling of the sublimity and majesty of Nature and the insignificance of man. This mental attitude conduces to carelessness even in experienced mountaineers when climbing alone in places where a single misstep may be fatal. Strong coffee, alcohol, and tobacco must be avoided by the mountain climber. Exhausting conditions, such as lack of training, hunger and thirst, storms, fog, darkness and snow blindness, and the anxiety incident to losing one's way, are also factors which favor the production of mountain sickness. The aeronaut can attain to greater altitudes without suffering, on account of the relative absence of the element of strenuous physical exertion, which is always a factor in scaling mountain peaks or traversing snow fields. Aviation or balloon sickness, however, is closely allied to mountain sickness. The rational treatment of both consists in inhalations of oxygen, rest, and the administration of hot, nourishing drinks.

THE CANADIAN MEDICAL ASSOCIATION.

The national medical body of Canada will hold its forty-seventh annual meeting at St. John, N. B., July 7th to 10th. Several distinguished foreigners will be present, among them Dr. Henry Jellett, Master of the famous Rotunda Hospital of Dublin, who is to deliver the address in obstetrics. The address in medicine will be made by Dr. Tromas McCrae, the collaborator with Sir William Osler in their *System of Medicine.* Among Americans well known to our readers who will read papers are Dr. Lewis Gregory Cole, of New York, Dr. James T. Case, of Battle Creek, Dr. Max Einhorn, Dr. George W. Crile, Dr. Percy Brown, Dr. Harvey Cushing, Dr. James Rockwell Torbert, and Dr. Frank S. Crockett. Dr. George E. Armstrong, of McGill University, who is to give a surgical clinic during the meeting, is president of the American Surgical Association.

PYORRHEA AND THE GENERAL HEALTH.

In the *Glasgow Medical Journal* for June, 1914, Mr. David Glen has an article on the relation of pyorrhea to autointoxication, which bears out our oft repeated injunction, during the past decade, never to omit the teeth from a physical examination. Mr. Glen does not mention the constant flow of pus into the stomach during sleep, but he does emphasize how bacteria are squeezed out of the socket by loosened teeth during mastication, become mixed with masses of food too large to be properly digested by the gastric juice, and so reach the intestine before being destroyed. They may be present in too great numbers to be all destroyed or they may be washed down by fluid and passing through the stomach unaffected, reach the intestine still alive. To a normal mucosa they would do no harm, but in one damaged by distention or inflammation they find a suitable habitat in which to multiply; the ideal condition is found in subjects of chronic constipation. Before long a dilated cecum is produced, which is in due time followed by a distended duodenum; such changes do not take place in a few weeks or months, but are gradual, extending over years, and are primarily the result of carelessness with regard to the bowels. So long as that sewage purifier, the liver, is able to render innocuous the poison brought to it by the portal circulation, constipated individuals go on comfortably; but occasionally they have a "splitting" headache due to failure of the liver cells to transform a more concentrated combination of poisons, and after such failure occurs once, it is apt to recur again and again until a vicious circle is established, and the patients become the subjects of "bilious" vomiting and malaise, and subsequently of aches and pains in various tissues of the body. Blood in such an impure state is less effective in protecting the body against other microbes, such as the tubercle bacillus, and persons who formerly had no trouble with scratches and

abrasions, now find that these nearly always suppurate.

Mr. Glen's treatment consists in keeping the intestinal contents moving more rapidly. Patients appreciate the benefit of aperients. Most of the dyspepsias are caused by this intestinal stasis, and so it comes about that many people pin their faith to some quack remedy, all of which remedies have as their most important ingredient some laxative medicine.

News Items.

Changes of Address.—Dr. Parker Syms, to 361 Park Avenue, New York.

Meetings of Medical Societies to Be Held in Philadelphia during the Coming Week.—Monday, June 22d, North Branch of the County Medical Society; Thursday, June 25th, Philadelphia Laryngological Society and the Germantown Branch of the County Medical Society; Friday, June 26th, Northern Medical Association and the Medical Club Reception.

Southwestern Virginia Medical Society.—At the twenty-third annual meeting of this society, held in Roanoke on Wednesday and Thursday, June 10th and 11th, the following officers were elected: President, Dr. W. H. Ribble, of Wytheville; first vice-president, Dr. J. W. Preston, of Roanoke; second vice-president, Dr. R. H. Garthright, of Vinton; secretary and treasurer, Dr. A. B. Greiner, of Rural Retreat. Next year's meeting will be held in Bristol.

A Medical School and Hospital for St. Louis University.—By the will of James Campbell, who died recently in St. Louis, Mo., his entire estate, valued at $35,000,000 to $40,000,000, will go, with the exception of $1,000,000, to the University of St. Louis for the establishment of a hospital and medical school. The deceased's widow and daughter are to share equally in the income during life, but at their death the entire estate is to go to the university, with the exception of the $1,000,000 trust fund which has been set aside for the daughter's children.

American Association of Immunologists.—The first annual meeting of this association will be held at the Hotel Chelsea, Atlantic City, on Monday, June 22d, under the presidency of Dr. Gerald B. Webb, of Colorado Springs. There will be three sessions, devoted to the reading and discussion of scientific papers. The presidential address on the History of Immunity will be delivered at the evening session. Dr. George W. Ross, of Toronto, is vice-president of the society; Dr. Willard J. Stone, of Toledo, Ohio, is secretary, and Dr. Martin J. Synnott, of Montclair, N. J., secretary.

Connecticut State Medical Society.—Dr. Oliver C. Smith, of Hartford, was elected president of this society at the 122d annual meeting, held in New Haven on Thursday, May 22d, under the presidency of Dr. D. C. Brown, of Danbury. Other officers were elected as follows: First vice-president, Dr. Stephen J. Maher, of New Haven; second vice-president, Dr. John B. Kent, of Putnam; secretary, Dr. John Mc.R. Scarborough, of New Haven; treasurer, Dr. Joseph H. Townsend, of New Haven. Next year's meeting will be held in Hartford. Dr. D. Clostin, of Danbury, was appointed delegate to the meeting of the American Medical Association in Atlantic City.

Massachusetts Medical Society.—A dinner at the Copley-Plaza Hotel, Boston, on Wednesday evening, June 10th, which was attended by nearly one thousand persons, closed the annual meeting of the Massachusetts Medical Society. Dr. William P. Bowers, of Clinton, the retiring president, acted as toastmaster, and among the speakers were Governor Walsh, Bishop Lawrence, Dr. Frederick C. Shattuck, of Boston; Dr. Edward Martin, of Philadelphia; Dr. James W. Kerr, assistant surgeon general of the United States Public Health Service, and Dr. Charles F. Withington. The following officers were elected: Dr. Charles F. Withington, of Boston, president; Dr. Samuel B. Woodward, of Worcester, vice-president; Dr. Walter L. Burrage, of Boston, secretary; Dr. Edward M. Buckingham, of Boston, treasurer; Dr. Edwin H. Brigham, of Brookline, librarian, and Dr. Everett A. Bates, of Springfield, orator, to deliver the discourse at the meeting next year.

New Officers of the Louisville Medical Club.—Dr. Peter S. Ganz was elected president of this club, at the annual meeting held on the evening of June 5th, succeeding Dr. Curran Pope. Other officers were elected as follows: Dr. M. Casper, vice-president; Dr. A. M. Barnett, secretary; Dr. B. J. Lammers, treasurer. Dr. George C. Coon was elected a member of the executive committee.

Cornell University Medical School.—At the annual commencement exercises held on Thursday, June 11th, the degree of M. D. was conferred upon twenty graduates, five of whom were women. The honor graduates were Helen L. Palliser, Philip M. Stimson, Robert J. Shea, May Elizabeth Walker, David P. Barr, and William Donald Rolph. The John Metcalfe Polk Memorial Prizes were awarded as follows: For general efficiency, first prize, $300, to Helen L. Palliser; second prize, Philip M. Stimson; third prize, $75, to Robert J. Shea; for efficiency in otology, first prize, $50, to Philip M. Stimson; second prize, $25, to Robert J. Shea. The address to the graduating class was delivered to President Schurman.

Personal.—In response to an urgent popular demand, Colonel Charles E. Woodruff, Medical Corps, United States Army, retired, has consented to act *pro tempore* as health officer of the town of New Rochelle, N. Y.

Dr. Henry E. Austin, of the New Jersey State Hospital for the Insane, at Trenton, has been appointed physician in chief of the hospital for the insane at Bayview, Baltimore.

Dr. Lester D. Volk and Dr. Gerard Kasper have resigned as coroners' physicians in Brooklyn, and Dr. Charles Wuest and Dr. George W. Tong have been appointed to succeed them.

Dr. Anna Hubert, of Seattle, Wash., has been appointed a resident physician at the Workhouse, on Blackwell's Island, New York.

American Therapeutic Society.—The fifteenth annual meeting of this society was held in Albany, N. Y., on Friday and Saturday, May 29th and 30th, under the presidency of Dr. Howard Van Rensselaer, of Albany. Officers to serve for the ensuing year were elected as follows: President, Dr. Francis M. Pottenger, of Monrovia, Cal.; first vice-president, Dr. Robert T. Morris, of New York; second vice-president, Dr. Spencer L. Dawes, of Albany, N. Y.; third vice-president, Dr. J. Madison Taylor, of New York; secretary, Dr. Lewis H. Taylor, of Washington, D. C.; treasurer, Dr. A. Ernest Gallant, of New York; editor of the *Transactions*, Dr. P. Brynberg Porter, of New York; members of the council, Dr. Howard Van Rensselaer, of Albany, N. Y.; Dr. Thomas E. Satterthwaite, of New York, and Dr. J. Blake White, of New York. Next year's meeting will be held in San Francisco.

Medical Society of the Missouri Valley.—The twenty-seventh annual meeting of this society will be held in Colfax Springs and Des Moines, Iowa, on September 17th, 18th, and 19th, under the auspices of the Polk County Medical Society. On Thursday and Friday the scientific sessions will be held in Colfax Springs, with headquarters at the Colfax Hotel. On Saturday, Des Moines will entertain the society and a series of interesting clinics will be held. Sunday will be spent in Colfax Springs by many of the members who will be accompanied by their wives and daughters. Special arrangements are being made for the ladies, as well as special rates. Room reservations should be made early, as a large attendance is assured. Dr. Flavel B. Tiffany, of Kansas City, is president, and Dr. Charles Wood Fassett, of St. Joseph, is secretary.

Clinical Congress of Surgeons of North America.—The fifth annual session of this congress will be held in London, England, during the week of July 27th. During the days of the congress clinics by eminent London surgeons will be held in various hospitals, and at the evening sessions scientific papers will be read and discussed. The officers of the congress are: President, Dr. George Emerson Brewer, of New York; president-elect, Dr. John B. Murphy, of Chicago; vice-president, Dr. W. W. Chipman, of Montreal; vice-president-elect, Dr. George E. Armstrong, of Montreal; general treasurer, Dr. Allen B. Kanavel, of Chicago; general manager, Mr. A. D. Ballou, of Chicago; general secretary, Dr. Franklin H. Martin, of Chicago. Officers of the London Committee are: Sir Rickman J. Godlee, honorary chairman; Mr. Herbert J. Paterson and Mr. Herbert S. Pendlebury, honorary secretaries. A handsomely illustrated report of this congress will appear in this JOURNAL.

Iowa State Medical Society.—The sixty-third annual meeting of this society was held in Sioux City on Wednesday, Thursday, and Friday, May 13th, 14th, and 15th, under the presidency of Dr. Lee Wallace Dean, of Iowa City. The women physicians of the State met in annual session on Tuesday preceding the three days' session of the society. Dr. Florence Brown Sherbon, of Colfax, presided. Nearly 500 physicians were in attendance, and an interesting programme was presented. Officers for the ensuing year were elected as follows: President, Dr. H. Eschbach, of Albia; first vice-president, Dr. W. Smouse, of Des Moines; second vice-president, Dr. J. F. Harrick, of Ottumwa; secretary, Dr. J. W. Osborn, of Des Moines; treasurer, Dr. W. B. Small, of Waterloo; editor, Dr. S. Fairchild, of Clinton. Waterloo was selected as the next meeting place.

Gifts and Bequests to Hospitals.—The will of Mrs. Frances K. Harlow, widow of Dr. John M. Harlow, of Woburn, Mass., contains a bequest of $20,000 to the Woburn Charitable Association to establish a surgical building for the Choate Memorial Hospital, to be known as the John W. Harlow Surgery. The will also contains a bequest to the Massachusetts General Hospital, the amount of which is not stated.

Included in the will of Harris Charles Fahnestock, who died in New York on June 4th, are the following public bequests: The Charity Organization Society of New York, $100,000; the Presbyterian Hospital, $100,000; St. Luke's Hospital, $100,000; the Helping Hand Association of St. Thomas's Protestant Episcopal Church, $10,000, and the Children's Aid Society, $5,000. In addition a bequest of $100,00 to the New York Post-Graduate Medical School and Hospital is made provided the institution did not receive this sum in the lifetime of Mr. Fahnestock.

A New Bureau of Public Health Education.—On May 26, 1914, the Board of Aldermen by a vote of fifty-four to four, recorded its approval of a proposal made by the commissioner of health, and subsequently endorsed by the board of health and the Board of Estimate and Apportionment, to establish in the Department of Health a Bureau of Public Health Education.

The civil service position of Director of the Bureau of Public Health Education has been established at a salary of five thousand ($5,000) dollars per annum, and it is understood that the appointee will devote his time and attention to the work of the Bureau to the exclusion of all conflicting and distracting professional interests. Pending the appointment of a permanent director of the new bureau, Dr. Charles F. Bolduan, formerly assistant to the General Medical Officer of the Department, has been directed to organize a Division of Public Health Education, with such means as are available; Doctor Bolduan has been designated temporarily Chief of Division and has been made directly responsible to the commissioner.

Gifts to Yale Medical School.—At the annual dinner of the Yale Medical School Alumni Association, held in New Haven on the evening of June 15th, President Hadley announced gifts and conditional pledges to the school of $1,725,000. President Hadley said also that the university has been advised by members of the family of their determination to establish the Anthony N. Brady memorial foundation of $500,000. The income from the foundation, $25,000, is to be given annually to the university for a term of ten years in order to enable it to declare operative at this time the agreement with the General Hospital Society of Connecticut and to conclude the alliance between the New Haven Hospital and the Yale Medical School.

If within the ten year period the university receives a total of $2,000,000 for medical school endowment and building funds exclusive of gifts from the Brady family, the Anthony N. Brady memorial foundation of $500,000 will become the absolute property of the university. Meanwhile the university is enabled to take immediate advantage of the offer made to it by the General Hospital Society.

Toward the $2,000,000 endowment needed President Hadley said that $1,110,000 already has been pledged. Of this $400,000 came from unnamed donors, conditioned upon the establishment of at least one memorial professorship in public health; $100,000 was the gift of Charles W. Harkness, of the class of 1883, and $100,000 was given by an unnamed alumnus. The remaining $500,000 has been promised by the General Education Board, conditioned on the remaining $1,500,000 being obtained by January 1, 1916.

Pith of Progressive Literature.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

May 21, 1914.

Influence of Santonin and Digitalis on the Human Eye.—Hugo Schulz has studied the influence of these drugs on the sensitiveness of vision toward certain colors. His method was an improved one whereby he could make accurate measurements of slight changes in the acuity of vision for colors. The studies were carried out on healthy adults. Readings of the sensitiveness were taken before the administration of the drug by mouth, and at ten minute intervals thereafter, for two hours. A dose of 0.2 gram of sodium santoninate produced an increased sensitiveness to violet ten minutes after it was taken. This soon passed over into a decidedly decreased sensitiveness. For yellow the conditions were exactly reversed—a primary diminution and a secondary increase in sensitiveness. Toward blue and red the sensitiveness was altered in the same way as toward violet, while green gave a reaction the opposite to that for red. Using an official tincture of digitalis, the sensitiveness for green was almost immediately reduced when a dose of ten drops was given orally. When as little as one or two drops was given, it was possible to show a prompt and marked primary increase in the sensitiveness for green which soon passed over into the decreased sensitiveness. In one case it was necessary to reduce the dose to half a drop in order to obtain this primary effect. A striking fact was that not only was this smallest dose sufficient to cause the phenomenon in normal persons, but the effect was observed in a relatively short time after the administration of the dose—in about ten minutes, being most marked in twenty minutes. Tests with red gave results the reverse of those obtained with green.

Salvarsan Treatment of Progressive Paralysis.—Runge compared results obtained in the treatment of 555 cases of syphilis with older methods, mercury and the iodides, with those obtained by the use of salvarsan in a series of forty-four cases. Periods of improvement, which he designates as remissions, occurred in 3.9 per cent. of untreated cases, in 9.3 per cent. of cases treated with iodides, in 11.4 per cent. treated with mercury, and in 37.4 per cent. treated with salvarsan. In those patients who were treated with more than one gram of salvarsan, the remissions in the course of the disease were obtained in sixty per cent., while among those who had less than a gram only fourteen per cent. showed remissions. Of all patients who were not treated with salvarsan, only two per cent. remained stationary for long periods of time, while about thirty per cent. did so after salvarsan. Some of the cases treated with salvarsan showed no improvement, but most of these received only very small doses. A few, four cases, seemed to be made distinctly worse. The two facts which stand out most distinctly from this work are, first, that salvarsan must be given in very large total doses, up to ten grams, to obtain the best results; and secondly, that, while the results are bet-

ter when the treatment can be begun in the early stages of the disease, nevertheless, good results may be expected in a large proportion of the cases, even after the symptoms have been present for a considerable time.

Spastic Ileus.—Albert Fromme reports two cases of this rare affection in both of which the diagnosis was confirmed by operation. He analyzed the probable causes and came to the conclusion that they may be grouped under four headings: 1. Influences lying outside the gut. 2. Stimuli arising from within the gut; 3. Spastic states, such as hysteria; 5. Conditions of so indefinite a nature that no etiology can be stated. He regards the causes embraced under the second head as the most frequent, especially in children. An analysis of these causes shows them to be the same as those which are known to give rise to intussusception, and Fromme suggests that the true immediate cause of this latter condition is the development of a spastic ileus which prepares the one segment of the intestine for invagination into the other.

Deaths Secondary to Anesthesia.—George Keil groups those deaths which result from the administration of an anesthetic, but which do not occur during or immediately after its induction and maintenance. Such deaths usually occur from two to ten days after anesthesia. In 4,000 anesthesias, only ten such deaths occurred. Nine of these followed the drop method of administration, the other, administration with the apparatus of Roth-Draeger. This seems to favor greatly this apparatus, and by its means only about a third as much anesthetic is required as by the drop method. The careful analysis of the amounts of anesthetic used in these 4,000 cases also shows that the previous administration of morphine and scopolamine plays no important part in the reduction of the amount of volatile anesthetic which is required.

Anaphylaxis in Repeated Injections of Diphtheria Antitoxin.—Fritz Cuno's experience embraces the treatment of about 3,500 children with antitoxin. Ninety-nine of these received second administrations at intervals of from one to 114 months after the first administration; eleven received both second and third courses of injections with intervals of from one to 130 months between the several courses; and ninety-six children had repeated doses from ten to sixty-three days after the primary. This makes 207 in all who had second courses of injections, and of these only one showed symptoms of anaphylactic response. While the danger is thus seen to be very small—even in this one case the symptoms were not severe—Cuno recommends that the presence of anaphylaxis be first tested by the intracutaneous injection of a very small amount of serum before one proceeds to give a full dose to a child who has previously been treated.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT.

Storing of Albumin in the Liver after Feeding with Albumin.—Doctor Berg, in examining a number of well nourished animals, found irregularly distributed, viscous drops in the cells of the liver which he regarded as reserve albumin. To prove his contention, he had to differentiate these spots from protoplasm; to show that they disappear during hunger; that they reappear when albumin is given. Albumin, casein, and globulin cannot be differentiated from cell protoplasm, but derivatives of albumin, down to albumoses, are visible as microscopical granules which unite and form large spots similar to those he found in the cells. He starved some animals and the spots disappeared by vacuolization. To show that they reappeared after feeding with albumin, he used control animals and after a period of starvation he fed them with albumin and the spots were present, even to a greater extent than in animals on a liberal mixed diet. When the animals were fed on carbohydrates and fat this was not the case. These tests were verified by chemical ones and similar results were obtained with derivatives of albumin, aminoacids.

Treatment of Malignant Neoplasms with Tumor Extract.—Lunckenbein used tumor extract in forty cases of sarcoma and carcinoma, and thinks it a valuable therapeutic agent. He demonstrated that the invading cells absorb the nourishment intended for the invaded host by virtue of a ferment which they possess. In addition to robbing the organism of its nutrition, they cause harm by giving off into the system the products of their metabolism (possibly also of their secretory activity) and those of the breaking down of the invaded tissue. The organism defends itself by the production of a ferment and a battle is waged. In most cases of carcinoma, the ferment produced by the organism is insufficient to combat the invading cancer cells and after a more or less prolonged struggle, the patient usually dies. When tumor extract is injected into a patient having sarcoma or carcinoma, it causes these specific ferments to be formed, and the patients usually show rapid improvement. The size of the tumors is affected; they become smaller and lend themselves more readily to operative treatment. After a time, however, the improvement is not as rapid and as marked as at the beginning. The danger of anaphylaxis can be disregarded, as cases have been treated with large doses after intervals of eight to twelve weeks and showed no bad effects.

Leptynol in Obesity.—E. Vogt used a two and a half per cent. solution of palladium hydroxydul in sesame oil and follows the technic of Kaufmann. The solution is warmed to 45° C., thoroughly shaken, and slowly injected into the subcutaneous tissue. The needle should penetrate a distance of two and a half cm. Care should be taken that the clothing does not cause pressure. It is good for the patient to do some active work after the injection, as it does not act well when the body is at rest. The initial dose is from two to six c. c. and is repeated daily for two days, being divided into two parts and injected into each side of the abdominal wall. This is followed by weekly doses of two c. c. each, divided as above. It is a good practice to limit the diet while the injections are being given, but not essential. The amount of fluid intake should be diminished. During the course of the injections, when it becomes necessary to overcome constipation, purgatives should be administered in preference to salts, as the latter have given bad results in some cases.

Disturbance of Ovarian Function in Myoma uteri.—August Mayer and Erich Schneider examined the blood serum of a number of myomatous patients against ovary, according to Abderhalden, using as complement ovaries removed from some of these patients at the time of operation and ovaries of other myomatous and carcinomatous patients, pregnant and normal women. Negative results were obtained with the ovaries of carcinomatous and normal cases. Of the twenty-two cases of myoma in which the patients' ovaries were used as complement, twenty gave positive results. The remaining cases of myoma, in which ovaries removed from other patients were used as complement, gave positive results in slightly less than fifty per cent. The conclusion is that ferments of the serum of a myomatous patient which give a positive result with a specific substance contained in the ovaries of that patient will give a positive reaction with the ovaries of another myomatous patient only if the ovaries of the latter contain the same specific substance. Is the disturbance of ovarian function the cause or the result of myoma uteri? Normal uterine growth is dependent upon the ovary, and the disturbed function of the ovary in myoma uteri must be regarded as the cause of the myoma and not as a coincidence. Many cases of myoma occur between the ages of forty and fifty-five years when most of the symptoms of ovarian disturbances are complained of; the contention that the disturbed ovarian function is primary would explain the sterility and delayed menopause.

May 16, 1914.

Tuberculosis of the Retina.—Hans Oloff reports two cases of primary tuberculosis of the retina with no other tuberculous lesion whatever. The ophthalmic examination showed tortuous veins, of irregular diameter, interrupted in places, and small hemorrhages along their course. Injection of one mg. of tuberculin gave no reaction in these cases, but when five mg. were injected, a strong reaction took place, new hemorrhages being visible. Fleischer, in one case made a pathological and microscopical examination, finding tubercles in the sheath of the veins, although the tubercle bacillus could not be isolated. Cases reported so far have been tuberculosis of the peripheral veins; the central vein of the retina within the optic nerve may also be affected, and the case then simulates one of retrobulbar neuritis with central scotoma. After using tuberculin for five years in the treatment of eye diseases, the author observed distinct advantage only in cases of eczematous and phlyctenular character.

New Symptom in Tabes.—H. von Bayer found that, on pushing the skin with the finger tip or on lifting a fold of skin and drawing it in different directions, the tabetic patient is unable accurately to tell in which direction the skin is being pushed or pulled. He experiences only the sensation of pressure at the particular point. These areas are not identical with those in which tactile and pain sensations are absent, as inability to tell the movement of the skin is frequently found in spots where touching with cotton is distinctly felt. This symptom is probably associated with disturbance of the sensibility of the deeper structures, and its value in regard to making an early diagnosis and prognosis can be determined only by further observation.

Skin Reaction in Pregnancy.—P. Esch used fluid expressed from the placenta, and the albuminous product obtained by partial precipitation of placental fluid with ammonium sulphate. He termed the latter substance "albumin and globulin partition." He injected 0.1 c. c. of each fluid subcutaneously into pregnant and nonpregnant women. The reaction was similar in both classes of patients, but the pregnant women showed a more marked reaction, which did not disappear so quickly. The reaction consisted of redness and tense swelling about the site of injection, which appeared in from eight to sixteen hours, increased up to twenty-four hours, and then decreased in a few hours to the size of a pea. The size of the swelling at its height varied from that of a bean to the size of the palm of the hand. The reaction was the same when the expressed placental fluid was used as when the "albumin and globulin partition" was used. The finer skins and pregnant women gave the more violent reaction.

Nylander Test for Sugar.—Mende observed, when performing Nylander's test, that urine is found in which, after boiling for several minutes, there is a slight grayish discoloration quite different from the true black of the positive reaction. If such urine is centrifugated for a few minutes, the supernatant fluid is clear, and there is a small amount of really black sediment. He repeated this test in a great number of cases, boiling first for two and three minutes and then centrifugating. This urine was from patients who had recently eaten liberally of sugar, and the reaction disappeared when the intake of sugar was curtailed. This test is more delicate than the Nylander test, and very small percentages of sugar can be detected.

Treatment of Delirium tremens.—Scharnke, in discussing this subject, condemns the prolonged hot bath; he thinks the cardiac strain may lead to collapse in some cases, especially when the heart is already weakened. When patients become unruly, he does not allow them to be restrained by bodily force, but places them in an isolation room. As a prophylactic measure against cardiac collapse, he gives digitalis in large doses, usually digalen, of which he gives thirty drops three times daily. To overcome the muscular unrest, veronal in doses of fifteen to thirty grains is prescribed.

Nephritis in Exophthalmic Goitre.—L. Huismans reports a case of exophthalmic goitre, in which the right half and part of the left half of the thyroid were removed under local anesthesia. The patient died in eighteen hours. Autopsy showed a persistent thymus; hypostasis of both lungs; the kidney capsules did not strip readily and the cortex showed many striated areas of necrosis. Death was caused perhaps by pluriglandular intoxication.

May 16, 1914.

Treatment of Tuberculosis with Friedmann's Vaccine.—A. Schittenhelm and G. Wiedermann report their results as follows: Of twenty-three cases of tuberculosis of the lungs, five were improved; improvement, however, being only relative

—diminution of temperature, decrease of sputum, and general betterment. No patient showed disappearance of any objective signs. Of the remaining eighteen, nine were not improved, and the others grew progressively worse; in several, the decline which led to their death could be directly attributed to the second injection of vaccine. Three cases of Poncet's disease and a few cases of joint tuberculosis were favorably affected. There was no effect on tuberculosis of the kidney. A case of Addison's disease, treated in this manner, became worse. They consider this vaccine of doubtful value in tuberculosis of the lungs. The danger attending the treatment is so great that they have abandoned its use.

Sacral Anesthesia in Laparotomy.—M. Traugott employs the following technic: The evening preceding the operation the patient receives 0.5 gram veronal; one or one half hour before the beginning of operation, 0.00024 to 0.00032 gram scopolamine, with 0.028 to 0.032 gram pantopon is injected subcutaneously; three quarters of an hour later 0.02 gram pantopon is again injected. If the patient becomes restless during the operation 0.01 gram pantopon is given subcutaneously. The patient is placed on a horizontal table in the knee elbow position. An ordinary trocar is used for the injection. If bleeding takes place through the needle, it can be checked by elevating the upper part of the patient's body, and the needle should be slightly withdrawn. After waiting a few minutes, ten to twenty c. c. of salt solution are injected. If the fluid is still bloody, a further wait is indicated. If not, ten to twenty c. c. of a one per cent. novocain solution are injected, the pulse and respiration being watched for several minutes. If the novocain is injected directly into a vein there is almost an immediate acceleration of pulse and respiration. The foregoing technic was carried out in a series of laparotomies, including hysterectomies, appendicectomies, nephrectomies, ovariotomies, and in about fifty per cent. of them no further anesthetic was necessary, the patient experiencing no pain and complete relaxation being obtained. In thirty-eight per cent., a small amount of anesthetic had to be given in addition and only in six per cent. did this method have to be abandoned owing to pain, and failure on the muscles to relax.

Intramuscular Injections of Neosalvarsan.—H. Ekersten, in German New Guinea, used intramuscular injections of neosalvarsan, as the natives objected strongly to intravenous injections on account of the apparatus necessary, time consumed, and because, at times, the veins being barely visible, incision was necessary to expose them. Natives submitted readily to intragluteal injections of neosalvarsan in ten to twenty c. c. of distilled water. These injections cause very little pain and in only one case did an abscess develop. Lately he has been using the same dose of neosalvarsan in two c. c. of distilled water—a very concentrated solution—with the same good results.

Thymectomy for Tracheostenosis thymica.—A. Fischer performed thymectomy on a child two years old suffering from attacks of stridor caused by pressure of the thymus on the trachea. After exposing the thymus, he opened the capsule, resected a portion of the gland, inserted a cannula into the trachea to prevent its collapse, and sewed the anterior wall of the capsule to the periosteum of the sternum. The improvement in the breathing was immediate. There was a postoperative rise in temperature which lasted five to six days. After the operation the child appeared better in every way, the eczema and enlarged submaxillary glands which were present before operation disappearing about the tenth day.

LYON MÉDICAL.

Curable Tabes.—Grandclément asserts that tabes dorsalis appearing before the age of forty years and only about ten years after the initial infections can frequently be cured by energetic mercurial treatment.

Transitory Aphasia.—Barjon and J. Froment report a case of right hemiplegia, with angina pectoris later causing death, in which, although there had been but temporary aphasia at the time of the stroke, the power of speech being subsequently completely recovered, there was found post mortem a complete destruction—by softening—of the entire left third frontal convolution, the greater part of the second frontal, the lower three fourths of the Rolandic convolutions, the operculum, and the convolutions of the island of Reil. The whole of Broca's area was destroyed and likewise nearly all of P. Marie's lenticular zone. From this case it is clear that Broca's centre can no longer be considered a mnesic centre in which are stored up motor images of articulation. The so called "speech area" therefore does not exclusively preside over the function of speech. Not only is there a possibility of substitution of other centres in case of destruction of Broca's area, but in view of the rapidity with which such substitution takes place, it may be presumed that these substitute centres have functions even under normal conditions. The anterior centres, disease of which causes motor aphasia and agraphia, are to be looked upon as merely taking part in the elaboration of words, just as the posterior centres destruction of which causes word deafness and blindness, appear to take part in the comprehension of these same words.

Muscle Tissue as a Hemostatic in Surgery.—Leriche has applied in about fifty cases Cushing's method of using free muscle tissue to fill up dead spaces and arrest bleeding, with complete satisfaction. The use of muscle admits of making a species of capsule around structures dealt with at operation, which capsule eventually becomes fibrous.

Exclusive Urea Retention.—Morel and Mouriquand report a series of clinical tests proving that in a few cases of nephritis, retention of urea in the blood is, relatively, much more marked than that of other nitrogenous compounds.

PARIS MÉDICAL.

Treatment of Acute Urethritis.—R. Job recommends an astringent glycerin preparation made as follows: Solution A: Sterile thirty per cent. glycerin, 500 grams; picric acid, two grams; ninety

per cent. alcohol, eight grams. Solution B: Mercury oxycyanide, 0.3 gram; distilled water, ten grams. The picric acid is first dissolved in the alcohol, and the resulting solution mixed in with the glycerin on a water bath, upon which the mixture is then left for twenty minutes, being stirred meanwhile. When the picric solution has cooled the mercury solution is added to it. The resulting preparation is injected into the urethra, after micturition, by means of a large dropper with rubber hand bulb. A sensation of burning results; this passes off after three to five minutes. The solution should be slowly introduced until the burning is felt in the perineum. The fluid is then retained, by pressure between fingers at the meatus, for one half to three minutes, according to the degree of inflammation and individual sensitiveness. During this time light massage of the urethra with the finger should be executed, to spread the fluid into all pockets of the mucosa. The penis may then be covered with a double layer of absorbent cotton projecting well beyond the meatus. Four injections should be taken daily until the discharge ceases—usually in less than twenty days. After this three injections should be used until shreds have practically disappeared from the urine, when the number may be reduced to one, every evening. The usual general hygienic measures should be insisted on. In twenty-five cases followed by the author for three to twelve months after the end of treatment no recurrence was observed, though some were cases of posterior urethritis.

Röntgen Ray Treatment in Thymus Enlargement.—E. Albert-Weil obtained rapid cures in seven successive cases with the rays, and considers it now definitely established that no surgical treatment is ever necessary in thymus hypertrophy. In his last case, a six months' infant with severe asphyxial attacks about every other day and a large thymus, the organ was almost completely reduced in a month by seven x ray exposures both anteriorly and posteriorly. The thymus is unquestionably very sensitive to these rays. Only in cases of almost continuous thymic asthma is the initial administration of a large dose of the rays necessary. In all other cases, a dose of five to six H units of filtered rays, applied from both the anterior and posterior aspects in a short period of time, is quite sufficient to yield an anatomical and clinical cure.

PRESSE MÉDICALE.

May 2, 1914.

Comparative Action of Arsenic and of Iron in Anemias.—C. Aubertin refers to the behavior of hemoglobin in cellular anemias in which arsenic is given to increase the number of erythrocytes. At times the hemoglobin during arsenic treatment shows a rise which is parallel to that of the cell count, and the color index may remain normal or exceed the normal. In such instances the reserve of iron in the system has probaby not been depleted. More characteristically, however, cases treated exclusively with arsenic show only a slight, temporary rise in the hemoglobin percentage, which thereafter remains stationary at a low figure, while the cell count rises to approximately normal. In such cases, which upon arsenic treatment merely become chloroanemics instead of cellular anemics, there is probably a fault in iron metabolism which prevents the newly formed red cells from obtaining a proper supply of hemoglobin. In one of the author's cases with 2,600,000 red cells and thirty per cent. of hemoglobin, the cells rose under arsenic to 3,590,000 and the hemoglobin to forty per cent.; no further progress being then made, iron was substituted for the arsenic and shortly after the hemoglobin had risen to ninety per cent. and the cells to 4,510,000; symptomatic relief was procured at the same time. In many cases of anemia both arsenic and iron are required, but the author advises that they be given separately.

SEMAINE MÉDICALE.

May [illegible], 1914.

Pyometra and Abscess of the Uterus.—F. Lejars calls attention to the fact that pyometra may occur as an acute condition, post partum. In most instances, however, intraparietal abscesses constitute the form of uterine suppuration found at this period. Small, multiple intraparietal abscesses may also occur in uterine infection after abortion, but are then small, representing only one of the local manifestations of a diffuse pelvic suppuration. According to Mercadé, abscesses in the uterine wall due to gonococcic or tuberculous infection; or to traumatism, are also at times met with. The possible presence of such conditions should always be borne in mind in clinical examinations and in operative work.

BRITISH MEDICAL JOURNAL

May 2, 1914.

Type of Tubercle Bacilli in Human Sputum.—A. Stanley Griffith's earlier work covered examination of the sputum from twenty-nine patients to determine the type of organism present. He found two cases from which pure cultures of bovine tubercle bacilli were isolated. In all the others, the cultures were of pure human bacilli. The present continuation of the work comprises the results of the examination of sputum from 148 additional cases. In 147 of these the bacilli were of the human strain. In the remaining case nothing but typical bovine bacilli were obtained in each of five separate examinations made during a period of about four and a half months. In an analysis of the existing literature on this subject Griffith finds that of a total of 938 cases all but six gave pure cultures of the human type of organism. In three of the six cases the cultures showed a mixture of both types, and in the other three—all in Griffith's own experience—the organisms were purely bovine in type. In the region of Edinburgh about sixty per cent. of tuberculosis of bones and joints, and about ninety per cent. of cervical gland involvement, were probably ascribable to bacilli of the bovine type. Griffith obtained some of his material from this region, the remainder coming from London. In forty-three Edinburgh cases the infection was of bovine type once, and in 159 London cases twice of this type. These cases were all of pulmonary tuberculosis.

Blood Alterations in Hay Fever.—E. Emrys-Roberts happened to examine his own blood during

an attack of hay fever and the alterations from the normal were so striking that he abandoned the idea of taking treatment and continued the examinations at intervals during a year so as to include both the season of attack and that of freedom from symptoms. In addition to this he has examined the blood from six others who suffered from the disease. On the strength of these examinations he concludes: "1. Hay fever is definitely associated with an alteration in the blood picture. 2. The alteration in the blood picture chiefly consists in a decrease of the hemoglobin content, a polycythemia, an increase in large mononuclears and eosinophiles, together with the presence of vacuolated and degenerated leucocytes, and a degree of leucopenia. 3. Increased eosinophilia coincides with symptoms of asthma. 4. An altered, but modified, blood picture persists during the interval between the seasonal attacks."

Variations in the Leucocytes in Certain Diseases. David Thomson presents figures and charts which show that very remarkable variations in the numbers of leucocytes occur, not only from day to day, but at different times on the same day. In certain maladies these variations periodically range from 2,000 to as high as 80,000 in a c. mm. He has included in his examinations cases of Hodgkin's disease, malignant disease, myositis ossificans, and splenic anemia. The method of counting the leucocytes several times daily should be extended to a few cases, at least, of every common condition.

Suspension Laryngoscopy.—Gustav Killian prepares the patient by administering one or two preliminary doses of scopolamine and morphine to reduce the distress of a prolonged examination or treatment. Just before the beginning of the examination, the larynx is painted with cocaine. The patient then is laid on his back on a table in such a way that his head will fall over the end. A specially designed spatula is then passed over the tongue and epiglottis as far as the vocal cords, and the head is then suspended by means of this spatula, the free end of which is hooked over a suitable support. The handle is adjusted by means of a set screw so that the hook at the point of suspension shall be vertically over the apex of the spatula in the throat. This method gives perfect exposure of the entire larynx and leaves the operator both of his hands free for manipulations. Illumination is provided by a head mirror, or head lamp. By pressure over the cricoid cartilage the front portions of the larynx can be brought into better view if necessary. It is possible for an adult to remain in the suspended position for an hour to an hour and a half. In children it is usually inadvisable to give morphine and scopolamine, and anesthesia with chloroform is substituted.

LANCET.

Surgical Treatment of Infantile Paralysis.—Robert Jones emphasizes the great importance of the proper early treatment of infantile paralysis. The affected extremity should be rigidly fixed in a position which will overcome all tendency to deformity and which will prevent the bad effects of the overstretching of weakened muscles. Such fixation should be maintained until all pain and tenderness has left the parts, when it then becomes possible, if the child is old enough, to determine the extent of complete paralysis and to institute measures for the reeducation and strengthening of weakened muscles. Very gradually the child should be encouraged to make slight efforts to contract the feeble muscles, but in no circumstance should these weakened muscles be allowed to become stretched by the greater action of the strong ones opposing them. If a muscle reacts to faradism, it is certain that it will recover, but the converse is not true, and frequently muscles which give no reaction will later show considerable recovery. Stress is laid by Jones upon the importance of functional paralysis, due to overstretching of muscles; the condition is usually encountered in the cases coming to the surgeon some time after the acute attack has worn off. Such muscles, by painstaking and proper treatment, can be restored to a condition of usefulness. Failure is almost certain to result if the muscle is allowed to function too early, or if the support by which its relaxation is secured, is released too soon. The only operative measures which should be undertaken are those which will permit the relaxation of overstretched muscles, and not until a year of treatment has elapsed, should any other operations be considered. Then, when properly conducted with a view to resulting function, tendon transplantation or fixation, formation of artificial ligaments, arthrodesis, and possibly nerve suture may find place in the list of measures.

Introduction of Drugs into the Cerebrospinal Fluid.—Charles A. Ballance concludes that remedial agents should be introduced into this fluid only directly by injection into the substance of the brain, into the cisternae at the base, under the arachnoid of the cortex, or into the ventricles. Objections to the first three methods leave the last as the most suitable one, and it is this which Ballance has worked out. Through a small trephine opening made just lateral to the middle line and just in front of the bregma, the dura is opened and the cerebral hemisphere is gently displaced laterally by means of a retractor. The anterior cornu of the lateral ventricle lies six and one half to seven cm. deep from the surface of the scalp at this point and may be reached by a cannula passed through the corpus callosum about a quarter of an inch lateral to the mid line. The cannula is fitted with a round pointed obturator and does not injure any vessels in its passage. When the obturator is removed, fluid wells up, showing that one has entered the ventricle. Under gentle pressure, sixteen to eighteen inches of water, from thirty-five to ninety c. c. of fluid, can be injected into the ventricle. Fluid so introduced is carried out of the ventricles, down the spinal cord, around the brain beneath the arachnoid, and by way of the lymphatics which follow all the cerebral vessels into the tissue of the brain itself. The method seems to be without danger, and is not a difficult one to carry out. It would seem possible that this method offers some hope in the treatment of severe cases where other methods fail.

Treatment of Parenchymatous Syphilis by Intracranial Medication. Harry Campbell reports

treatment of two cases of general paralysis with the method described in the preceding paper by Ballance. In one there was some improvement, but Campbell is not prepared to state whether it is to be attributed to the treatment or not. The other patient had an advanced cortical degeneration, and there has been no substantial improvement. Campbell believes that the method opens up a great future in the treatment of certain cerebral conditions, but he remarks that the method is one by which we actually go behind Nature's protective forces, and introduce into the cerebrospinal fluid agents which would not be allowed to enter, if given by way of the blood stream.

BOSTON MEDICAL AND SURGICAL JOURNAL.

June 1, 1914.

Cancer of the Uterus.—Farrar Cobb gives a complete analysis, from the standpoint of end results, of all cases of cancer of the uterus at the Massachusetts General Hospital for fourteen years, from 1900 to 1913 inclusive, 367 in number, seventy of which were his own cases. He emphasizes the importance of early diagnosis of cancer of the cervix, and distinctly shows the possibilities of cure by the extended abdominal operation. He describes certain original methods of operating.

Concentrated Neosalvarsan from a Clinical and Serological Standpoint.—J. Harper Blaisdell thus summarizes his paper: 1. Intravenous injection of twenty c. c. of fluid with glass syringe, needle, and Swift holder is the most simple method. 2. A steady hand and careful adjustment of syringe to needle is necessary. 3. The time of actual injection averaged thirty seconds. Three hundred and forty-one injections were given. No patient required the use of the recovery rooms because of untoward effects. Dizziness, headaches, and diarrhea in mild degree were recorded in some instances during the first twenty-four hours, especially after the first injection. Experience and strict aseptic technic render danger negligible. Twenty-four untreated cases were given four injections of concentrated neosalvarsan, 0.45 gram at weekly intervals followed by the Wassermann seven days later. Active symptoms and lesions yielded readily. The Wassermann reaction was little changed. Active early cases or long standing cases showed the least serological change. Serologically, the concentrated neosalvarsan was inferior to the old salvarsan.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

June 6, 1914.

Prevention of Surgical Shock and Postoperative Pain.—A. B. Cooke subscribes to the cardinal principles of anoci association, laid down by Crile: 1. Preliminary hypodermic injection of morphine and scopolamine, 2. Nitrous oxide and oxygen anesthesia. 3. Complete blocking of the operative area by infiltration with a solution of novocaine. 4. Infiltration of all tissues traumatized which are supplied with sensory end organs (except the skin) with a solution of quinine and urea hydrochloride. For the prevention of gas pains following abdominal operations, he advises early opening of the bowels. There seems to be no just ground for doubting or discrediting the practical benefits of the method. He feels sure that the use of it has rendered possible the best and most satisfactory work of his surgical experience. In his opinion, anoci association constitutes the most important contribution to the progress of surgery in the past quarter of a century.

Action of Living Lactic Acid Bacilli on Diphtheritic Throats.—E. V. Goltz and W. D. Brodie report six cases, with their controls, which were taken at random from a group of twelve. Both living cultures of lactic acid bacilli and naturally soured milk were used. Nose and throat were sprayed two, three, and four times daily. No antiseptics were employed, and individual atomizers were maintained. The patients receiving the naturally soured milk used this as a gargle and as a nasal douche four and five times daily. The conclusions are as follows: The average quarantine period of the six cases in which the lactic acid bacillus was used was twenty days, and of the six controlled cases, treated locally only with Seiler's solution as a gargle, sixteen days. The average quarantine period of fifty-seven cases admitted to hospital during the first three months of 1914, comprising all cases discharged with the required cultures, was twenty-one days. Lactic acid bacilli, in their experience, hasten the disappearance of diphtheritic membrane.

Arthroplasty for Ankylosis of Temporomandibular Articulation.—J. B. Murphy reports nine cases of ankylosis of the jaw in which he has performed a typical and uniform arthroplasty. The results justify him in advocating this technic for these cases. He has employed the pedicled flap as the interposing material. It consists of fat and the aponeurosis of the temporal muscle, and sometimes includes a few muscle fibres. Summarizing the whole technic, the steps of the operation are: 1. An L shaped incision; 2, division of the ankylosis and removal of a segment of the mandibular neck; 3, raising the flap of the temporal fascia and fat; 4, interposing the flap and fixing it in place; 5, closure of the wound. In all Murphy's arthroplasty work there is no other operation which gives the same satisfaction to the patient.

Intraspinal Injections of Serum With and Without Preservatives.—J. Auer says that, without discussing the necessity for preservatives in therapeutic serums, it is clear that a volatile antiseptic would be ideal, for such a one could easily be removed by warming the serum container before using. During the last few months he has carried out, at the Rockefeller Insitute, a series of experiments on dogs and monkeys to determine what effects are produced when serums containing 0.3 trikresol, 0.3 per cent. chloroform, or 0.3 per cent. ether are injected subdurally. As control injections, horse serum without any preservative, and Ringer's solution were employed. Respiratory failure is the great danger after trikresol injection in the dog, but occurs only rarely in monkeys. The drop of blood pressure was never fatal in the dog or monkey unless the respiration was permitted to fail. This danger was reduced in two ways, by being prepared to give efficient artificial respiration

when necessary, and by replacing the trikresol with a volatile antiseptic like chloroform or ether. It is worthy of note, however, that artificial respiration was apparently necessary in some cases even when serums with no preservative were injected intraspinally

MEDICAL RECORD.

June 6, 1914.

Deficiency of Sodium Chloride in Neurasthenia.—Alexander Haig believes that neurasthenia is sometimes associated with defective circulation in the brain and great nerve centres, caused, among other things, by weakness of the heart muscle. Chronic underfeeding or starvation is the cause of muscular weakness, which eventually affects even the heart. Deficiency of salt in the body may produce effects more or less identical with those caused by underfeeding, because deficiency of salt leads to ever increasing failure in the digestion and absorption of food, till the nutrition of all the muscles, including that of the heart, suffers.

Can Consumption Be Cured?—H. C. Clapp says yes, an answer to be explained to prevent misunderstanding. We must avoid too much pessimism, which paralyzes effort, and too much optimism, leading to carelessness and neglect, which are often fatal. Consumption can be cured; yet cure is not by any means an easy task (with comparatively few exceptions), and generally requires a vigorous fight for many months, and often for years, before victory can be won; in the contest certain moral qualities and strength of character play a very important part.

Economic and Social Study of Feebleminded Women.—M. G. Schlapp has made a statistical study of 281 cases in which every fact is gleaned from actual life. It would be fruitless, he says, to attempt to indicate, item by item, what these defectives have cost the community in hospital expenses, court expenses, funds for foundling asylums, and actual destruction of the life, health, and property of normal citizens. The data reveal that illegitimacy, attempted murder, theft, forgery, arson, prostitution, drunkenness, destitution, and disease are salient features. Almost without exception, there is a history of incorrigibility, misery, and waywardness. It is impossible to estimate what would have been the economic and social saving had all these women been apprehended when they were children and detained in segregation. It is becoming plainer year by year that the solution of the problems of crime and destitution is inextricably bound up with that of the problem of the feebleminded.

Angioneurotic Edema.—C. E. Munger gives the history of two fatal cases, but states that the disease is not ordinarily dangerous unless it attacks the throat. There is no definite knowledge of its etiology. Everything is indefinite except the clinical aspect. If, however, one will recall cases of anaphylaxis after the use of immunizing or secondary injections of antitoxin, and which may come on after the use of serum, one must be struck with the similarity between the clinical picture of anaphylaxis and that of angioneurotic edema. The belief may be stated that in this affection there is inherited passive anaphylaxis, a hereditary anaphylaxis which is the underlying cause of the condition. The treatment is unsatisfactory in the extreme, and seems to be highly empirical.

ANNALS OF SURGERY.

April, 1914.

Bone Transplantation.—C. A. McWilliams lays down the general principles to be observed in bone transplantation. No cavity which is septic should be filled with transplanted bone, as the graft will die and slough out. All wounds should be perfectly healed before transplantation is attempted. Most scrupulous asepsis is an absolute essential. No grafts should be handled by the operator. The graft should be grasped with instruments and thus inserted in its new bed. The living graft should be transplanted always with periosteum on it. This is most important. The graft should be taken living from the same individual who is to receive the transplant. If this be not possible, then it should be taken from as near a relative as possible. Animal bone should not be used, because it will be absorbed owing to the changed serological relations. If taken from another individual, the grafting should not be done until syphilis is ruled out by a Wassermann reaction. When the head of the humerus or femur is fractured and dislocated and the joint is opened, then the head should be replaced and attached to the freshened lower fractured surface, even though the head is dead, provided it is still aseptic. All foreign nonabsorbable material, wires, nails, celluloid, rubber, etc., should be avoided as implants unless under very exceptional conditions. Encircling wires will erode the bone and a fracture may result. Chromic gut should be used to fix the grafts in position. Experience has taught that it is not necessary completely to fill up a defect with a living graft. A much smaller living transplant with its periosteum may be used which will increase to the size necessary. After transplantation absolute immobilization is essential for success. This should be maintained for at least five months. An Esmarch tourniquet should not be employed because of subsequent oozing.

Transvesical Prostatectomy.—Paul M. Pilcher maintains that studies in the living pathology of chronic prostatism lead to the conclusion that obstructive prostatic hypertrophy usually involves the two lateral lobes and the median lobe, and that inasmuch as the obstruction is at the neck of the bladder and the obstructing body projects into the bladder, the natural avenue of approach is the transvesical route. The technic advocated includes a two step transvesical operation in every instance for the relief of benign hypertrophy of the prostate. Preliminary cystostomy is preferred for the reason that, following the suprapubic cystostomy the patient is out of bed in twenty-four hours, the urinary output from the bladder is completely controlled, there is no unpleasantness nor traumatism due to the passage of the catheter through the urethra, and the operation of transvesical prostatectomy is already half completed. Since applying these principles, the writer reports to date twenty-eight successful cases in a series, every case resulting in the control of urine by the patient and in his emp-

tying the bladder without using a catheter. These same rules do not apply in cases where carcinoma of the prostate has been diagnosed, or even where its presence is justifiably suspected.

Perforating Gastric and Duodenal Ulcers.—Frank Martin believes that suture of the perforation with pelvic drainage, and the placing of patient subsequently in the exaggerated Fowler position, give the best results. A gastrojejunostomy at the same time usually is not necessary, if the perforation lies near the duodenum or in the pylorus; it should be sutured transversely to avoid a stricture of the lumen occurring at this point. The chief objection to doing a gastroenterostomy in the height of a peritonitis of this kind is the additional shock, and the fact that the operation is not usually necessary. What is necessary is more or less prompt, speedy operation, without adding undue shock to a condition which is already most precarious. The justification for this gastrojejunostomy in the majority of the cases is very questionable, and only a few cases are reported where the subsequent gastroenterostomy has been called for. The later treatment of these cases varies a little from that of the ordinary case of peritonitis. The Fowler position, continuous normal salt by rectum by the drip method or the Murphy method are immediately begun, and in this way large quantities of salt solution are immediately taken up. Nothing is given by mouth for a certain number of hours, relying on the fluids taken by rectum. The question of posture is one on which surgeons differ, but the writer believes much good comes from the Fowler position.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

April, 1914.

Intranasal Treatment of Lacrymal Disease.—D. R. Paterson quotes Kuhnt that 93.7 per cent. of cases of disturbance of the lacrymal passages are of nasal origin. Rhese is mentioned as stating that his experience confirms the belief that disease of the anterior ethmoid cells plays a very prominent part in suppuration of the lacrymal sac. Whatever the obstruction may be, it leads to stagnation of secretion in the duct and sac, and sometimes to great distention of the latter. With this stagnation, infection of various kinds may occur. Treatment of the stenosis is an intranasal operation after the method of West; an opening is made in the lacrymal sac and drainage established into the nose. The advantages maintained for this operation are: Reestablishment of the physiological function of the tear passage, so that suppurations of the sac rapidly subside and the tears flow into the nose as under normal conditions; the use of probes and stylets, with frequent laceration of the duct lining, is avoided; the tear glands are preserved; and disfigurement as the result of an external operation, is also avoided.

PEDIATRICS.

May, 1914.

Milk in the Poor Home.—G. R. Pisek says that five cardinal points stand out in the campaign of the New York Milk Committee for pure milk, and the reduction of infant mortality: 1. Education of mothers in the care and feeding of their babies through infant centres known as milk stations. 2. Clean milk at a low cost to the poor. 3. Milk standards as to cleanliness and safety. 4. Effective cooperation of all public and private welfare agencies with the milk station work. 5. Reducing the mortality during the first month of life by preventing premature births, securing the propagation of strong and healthy babies, and making maternal nursing possible.

Control of the Milk Supply.—William G. Savage gives the following as the chief points and principles for effective administrative control of the milk supply. Apart from chemical sophistication, the essential sources of milk contamination are at the farm, and it is there that the main control should be exercised. Administrative control must be removed from the hands of the rural and small sanitary authorities, who are financially influenced by the milk trade. The urban population should contribute toward the expense of administration, since the benefits are mainly for the large towns. The cow keeper must be educated, both as regards special care and cleanliness, and the liability of milk to transmit infectious disease. The consumer must be educated as to the value and importance of clean, pure milk. If the increased care in collection and transmission sends up the price of milk, this is not a good reason why these necessary steps should not be taken. The cost of production must be lowered by cooperation, while cooperation must be utilized to transmit milk in a proper condition.

Use of Dried Milk.—A. E. Naish says that we have in dried milk a food which contains the same substances as cow's milk, and in the same proportions, except when humanized, a milk which is digestible to a wider range of infants, which has obvious advantages of storage and distribution, and which appears to have no tendency to promote any of the later nutritional disorders.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE CITY OF NEW YORK.

Stated Meeting, February 16, 1914.

The President, Dr. Reynold Webb Wilcox, in the Chair.

Presidential Addresses.—Dr. Reynold Webb Wilcox said that when, shortly after its organization, he had joined the association, it was with the understanding that it was to be strictly devoted to the advancement of medical science, without admixture of politics or personal interests. This purpose had been absolutely fulfilled. For ten years he had served the association as an elected member of the council and for four years as president. These had been happy years for him. The members of the council he had always found affable and courteous, diligent in business, and working harmoniously as well as arduously for the best interests of the society. In all these years there had never appeared the slightest source of strife or ill feeling, and the same was equally true as regards the association itself. As president he had appreciated the great

responsibilities, and felt grateful for the hearty and helpful support which he had at all times received. The aim had been to present in turn the latest advances in medical and surgical science, and if one looked over the long list of papers of the highest class to be found in the year book of the association, one would see a record of which any society might well be proud. Many other papers also had been offered which, in the prearranged schedule of scientific work, the council had been unable to find a place for. These papers had afterwards been read elsewhere, and the association had thus had an advantageous catalytic effect upon other societies. Doctor Wilcox then with complimentary remarks introduced the president elect, Doctor Southworth.

Dr. THOMAS S. SOUTHWORTH said that Doctor Wilcox had not only maintained the high scientific standard of the association, but had extended its work. It would be his business to follow, as best he might, where his distinguished predecessor had led. It would be his earnest endeavor to continue the good work, but if he was to be at all successful, it would be only by means of the assistance of all the members.

Resolution on the Retirement of Doctor Wilcox.—The following resolution, presented by the recording secretary, Dr. P. BRYNBERG PORTER, and seconded, with eulogistic remarks, by Dr. Thomas DARLINGTON, chairman for the Borough of Manhattan, was unanimously adopted:

The Medical Association of the Greater City of New York desires to record its high appreciation of the services rendered the society during the past four years by Reynold Webb Wilcox, M. D., LL. D., now retiring from the presidency. Doctor Wilcox has, by his self sacrificing and unremitting labors, maintained this association on the very high level of scientific achievement which it had previously attained. He has successfully carried out the plan, inaugurated by his predecessors, of presenting in turn the latest research and practical work in all the various departments of medicine and surgery, and this has been done by the ablest exponents in the profession of the subjects treated. So admirably has the high aim sought been accomplished that the programs of our monthly meetings have continued to attract unusual attention, and have been universally admitted to be of a scientific excellence and value seldom reached. In many other ways also has Doctor Wilcox worked faithfully for the interests of the association, while he has won the affection and esteem of all its members by his geniality and unfailing courtesy and by the very unusual gifts which he has displayed as a presiding officer.

Resolved, That the Medical Association of the Greater City of New York tender to Doctor Wilcox its sincere thanks for all the noble work he has done in its behalf, and express to him its profound regret at his retirement, together with its heartfelt wishes for his future welfare and happiness.

Address by the President Elect, Doctor Southworth—Some Observations on the Child of To-day.—This paper appeared in the JOURNAL for May 9, 1914.

The Value of Cocaine in Disturbances of Metabolism.—This paper, by Dr. WILLIAM H. PORTER, was published in the JOURNAL for April 25, 1914.

Dr. RANSFORD E. VAN GIESON had been accustomed to employ cocaine internally, usually combined with nux vomica, for a considerable time, and had had good results. He gave it in only small doses, a quarter of a grain three times a day, but in ten or twelve years, it had never induced the cocaine habit. He felt assured that the internal administration of the drug was not open to this objection, and believed that Doctor Porter was right in his assertion to that effect.

Dr. EDWARD WALLACE LEE was extremely interested as well as somewhat startled, as he had never thought of using cocaine internally for its effects on metabolism. The only purpose for which he would have given it by the mouth was for its local effect in certain conditions of the esophagus or stomach, and not for its physiological action upon the general system. The unfortunate results which he had observed from the local use of the drug had made him cautious in its employment; so that every time he used it or saw it used, he felt like diminishing the dose. He was not afraid of things as a rule, but he was afraid of cocaine because he had seen so many bad effects. Even novocaine, which was now used to a considerable extent as a substitute, produced profound depression. The internal administration of cocaine seemed to have a medicolegal aspect, and he asked whether a druggist would be permitted to fill a prescription containing a considerable amount of the drug—for instance, one calling for two grains three times a day for sixty days. Personally, if he employed cocaine internally he would administer it himself and under another name. If given in solution he believed it would have a local effect before it entered the stomach.

Doctor PORTER said that there was no more danger from cocaine than from alkaloids like strychnine, while aconitine was far more dangerous. There was reason to believe that many persons had taken ten grains or even larger doses without fatal result, and he was inclined to think that when untoward effects had been observed it was because the preparation was impure. One lady whom he had treated, a nervous wreck when she first came to him, had taken cocaine regularly for six years, and the results had been eminently satisfactory. The beneficial effects of the drug were due principally to the isomeric change after its ingestion to which he had referred in the paper. Almost invariably he administered cocaine in capsules.

Stated Meeting, March 16, 1914.

The President, Dr. THOMAS S. SOUTHWORTH, in the Chair.

The Differential Value of Cyclic Indicanuria in Gastrointestinal Diseases.—This paper, by Dr. GUSTAV BAAR, of Portland, Oregon, and Carlsbad, Austria, was published in this JOURNAL for April 4, 1914.

Dr. WILLIAM H. PORTER said that the subject of indicanuria was one to which he had given much attention. Frequently repeated examinations of the urine for a considerable period of time, that is for days and weeks in steady succession, constituted the only way in which we could arrive at any satisfactory conclusions regarding this condition and its relation to metabolic disturbances. In the case of one patient he had examined a sample of the urine at the end of every twelve hours for eighteen months in succession, and this afforded a wonderful revelation as to the true significance of indicanuria.

There were many other phases of the subject, as he had found by this series and by examining some three or four thousand other specimens during the past two years. One of these was the fact, that all forms of indicanuria have as the chief cause an arrest of the normal flow of the digestive secretory ferments, however that might be brought about, and that there was no other cause. Also, that just so soon as we could reestablish the normal flow of the digestive secretory ferments, the indicanuria would disappear. Hence this was the main thing to accomplish in the management of all these cases. The case referred to in which so many examinations were made was that of a gentleman with an enlarged prostate, in whom the indicanuria was more or less persistent, and it did not yield to any kind of treatment until the pain was relieved, which pain was very promptly brought under control by very minute doses of powdered opium, combined with bromide of potassium and extract of valerian. He feared the opium would still further inhibit the secretion of the digestive ferments, and hesitated to use it. The result, however, was the opposite of what was feared, for with the relief of the bladder pain and spasm there was an augmentation of the digestive ferments and a rapid disappearance of the indicanuria. And its disappearance was more or less permanent for weeks thereafter. Doctor Porter had observed many instances in which troublesome nervous disturbances, associated with indicanuria, had remained just so long as the digestive secretory ferments were not adequately produced, and in which, just so soon as they were, all abnormal symptoms were removed.

Dr. Louis F. Bishop said that Doctor Baar was to be congratulated on the excellent work that he had done, and, personally, he could confirm many of the facts he had brought out. The idea, still retained by many, that indicanuria was often dependent upon constipation should have been exploded long ago. In his own work, which had been directed of late years chiefly to the problem of arteriosclerosis, he had become impressed with the importance of indicanuria of metabolic origin. Thus, indicanuria was a constant accompaniment of advanced arteriosclerosis with high blood pressure, discomfort in the region of the heart, threatened apoplexy, etc. Everyone recognized that the animal protein elements in the food were those most concerned; and the recent work of the Rockefeller Institute, pointing to the comparative simplicity of the processes of digestion pertaining to protein foods in the intestinal tract, and showing that the aminoacids were stored in the tissues, leaving the more elaborate changes for a later period, emphasized the importance of metabolism. This fact that protein foods were quickly broken up and passed into the tissues, from which they were taken up and dealt with by the chemical processes of the body, indicated that the processes within the intestine were of much less importance than was formerly supposed. Arteriosclerosis represented the result of that disturbance of metabolism which was of most importance to the human race. It consisted of the direct damage to the cells of the body by materials, of food and bacterial origin, to which the cells were sensitive. Somehow, during this process indican appeared in the urine, and this indicanuria proved to be of a most intractable type and, from his own point of view, had overbalanced in importance the intestinal indicanuria to which he had formerly paid as much attention as anyone else. Doctor Baar's point, that a lesion in the intestinal mucosa allowed the passage of indican into the circulation, was interesting to him, because, at the same time that the indican passed, it was possible that crude proteins, leading to sensitization of cells, might also gain entrance to the circulation.

Doctor Baar said that while Doctor Porter had attributed the presence of indicanuria to arrest of the normal secretory function, he himself had propounded no theories. Doctor Bishop's contention that indicanuria was due to metabolic disturbances, however plausible it might appear, was certainly not yet proved. In the paper he had confined himself strictly to facts in regard to cyclic indicanuria. In gastrointestinal cases where a diagnosis could not be made, twenty-four hour specimens of urine should be examined every other day for six weeks. Between thirty and forty tests were usually required in order to draw satisfactory conclusions, and where symptoms of abdominal or pelvic disturbance continued, the patient ought to be operated on. Cyclic indicanuria associated with vague symptoms of this character constituted a surgical case.

Report of Fifty-four Cases of Lobar Pneumonia Treated by a Special Method.—This paper, by Dr. Edward E. Cornwall, was published in the Journal for May 30, 1914.

Dr. Austin W. Hollis said that for several reasons it was a pleasure to him to discuss the paper. In the first place, Doctor Cornwall and he had lived together while studying medicine at the College of Physicians and Surgeons; so that he felt that he might be very frank if he had any criticisms to make. In the second place, they had listened to the observations of a very skilled and experienced investigator in clinical medicine; and, thirdly, the subject was one which he (Doctor Hollis) had studied very closely during his entire practice. He would first take up the mortality statistics given. Four deaths in fifty-four cases seemed at first glance extraordinary. He was positive that no conjuring had been done in these figures, but he was not so sure that the magic art had not been employed on the patients. He would be quite ashamed to compare his own statistics with these, although they were no worse than the average. The general mortality in pneumonia for large numbers was the same that it had been twenty years ago—between twenty and twenty-five per cent. When they considered the nature of the disease and the subjects most liable to it, the aged and cardiacs, cardionephritics and alcoholics, they had to concede a mortality of ten per cent. as inevitable. Even if they allowed a low mortality for a city of homes and churches, like Brooklyn, and gave credit for the most excellent general care and extreme vigilance while a system of treatment was being carried out, the severity of many of the cases outlined in the paper would not permit them to say that under any

treatment the results would have been as favorable. If they analyzed the main points which Doctor Cornwall taught, they might find good reasons for his arguments. First, as to the diet, "antiputrefactive" sounded well, but he was bound to say that the ordinary diet employed generally in pneumonia, as milk, broths, gruels, and albumin water, had been found by experience through long ages to be about the best for such a disease, and he did not think Doctor Cornwall had made any good points in his dietary. Second, to let the bowels alone and not use cathartics, he was quite agreed, for he believed the initial calomel and continuous purgatives often fatally disturbed digestion. Third, to avoid useless drugs and much alcohol, was most admirable practice. Fourth, as to calcium salts, they could only theorize on the possible effect of calcium salts as a remedy in pneumonia. Dochez had found the coagulation time of the blood prolonged during the acute stage of the disease under their use, while Ewart had found it shortened. Again, Rudolph and Cole had found that calcium administered by the mouth, had no effect on the coagulation time of the blood. Janusckhe had shown that pleural effusions might be checked by subcutaneous injections of calcium chloride, and several observers had shown that the permeability of the vessels was lessened by the use of the calcium salts. Lauder Brunton had suggested the use of calcium salts in pneumonia to neutralize the toxins of albumoses and peptones, and to counterbalance the sodium chloride retention, and because of their direct stimulation to the heart. They might assume that in pneumonia the calcium salts diminished pulmonary exudations and improved capillary tone, but it would take a very large experience to prove that the mortality from the disease was lessened by their use. They had to admit that Doctor Cornwall had made a very valuable contribution to the treatment of pneumonia, and now, the speaker said, he would like to take up other considerations in its treatment.

The mortality in pneumonia might not have materially decreased in the last twenty years, but many advance steps had been taken in its management which might pave the way for much better results. A few years ago cold fresh air had been heralded as a wonderful reducer of the mortality, and it bade fair to delay our therapeutic resources in the same manner as tub bathing had done in typhoid fever. Cold air was of value in most cases, and fresh air in every case; but, after all, these were only hygienic necessities. Preparations of creosote were still employed for making the lungs a less agreeable breeding place for the pneumococcus, and now camphor, for the same purpose, plus a supposed stimulating action on the heart muscle, had taken a greater hold on their imagination; but in watching individual cases, he had never witnessed an appreciable response to their employment. Chemical bactericides such as ethylhydrocuprein, as experimentally tried on animals by Morgenroth, did not seem a promising discovery, and were more liable to do harm than good to the host. Those drugs which affected the heart or bloodvessels had always been given a prominent place in the treatment of pneumonia, and definite knowledge concerning their value had accumulated. Aconite, nitroglycerin, and other vasodilators, once so much used, had been abandoned as harmful. Preparations of digitalis were equally harmful, save in exceptional instances. Strychnine and caffeine were still regarded as excellent transitory cardiac and vascular stimulants. Adrenaline, subcutaneously or intravenously, had proved its value as a heart stimulant and reducer of pulmonary congestion by dilatation of the coronary and bronchial arterioles. The greatest triumph by drugs that he had ever seen had been in those most helpless cases of bronchopneumonia in infancy with edematous lungs, fixed diaphragm, retracting air spaces, and pale purplish eyeballs. Two minims of adrenaline, hot mustard baths, and cool fresh air had, in his experience, pulled two such cases from the grave. Drugs which eased pain and cough and caused sleep must often be used, and the best of these was codeine. Next came dionin or morphine. Paraldehyde intravenously was excellent in the case of alcoholics, but the ordinary sleeping drugs of the veronal type were all pernicious, except in very small doses. Bacterial vaccines, in doses of from ten to one hundred millions, had been well tried. N. Raw, reporting 207 cases with a mortality of sixteen per cent., had seen no bad effects and believed that the vaccines were of positive value, especially when used early. His own experience coincided with Raw's, but in such a rapid disease he thought their effect could hardly be striking. Antipneumococcus serum had been employed by Roberts in lobar pneumonia and by Freeman in bronchopneumonia, and from their reports, and judging by his own experience, he did not think it had any value. If such had been the case its recognition would have been speedy. Inasmuch as the pneumococcus produced no specific toxin, theoretically we would not expect an antipneumococcus serum to be found; 153 cases of pneumonia had been treated with pneumococcus phylacogen, with a mortality of twenty per cent., and the preparation was widely advertised and highly recommended in circulars. Personally, he had made an extensive and prolonged study of phylacogens. These substances were possessed of remarkable qualities, and their effects were dramatic and fascinating. When they were injected into the blood stream in sufficient dose a prolonged reaction, beginning with a chill and followed by a fever of some hours' duration, took place. The immediate strain on the heart was very great, although prompt recovery was almost invariably seen. This reaction was due to the action of the blood produced to destroy or digest this foreign substance which was the protein of the bouillon plus bacterial proteins. The ferment formed in the blood was, at the same time, capable of destroying the living infective bacteria which had invaded the body. Pneumococcus phylacogen was a double edged sword, perhaps capable of killing the enemy, but a dangerous weapon to employ. They were not yet in possession of sufficient knowledge to recommend its use during the acute stage of lobar pneumonia, but nevertheless he could assert that one of the greatest advances in the treatment of some phases of pneumonia was with phylacogen. Delayed resolution, abscess of

the lung, necrosis, and subacute or chronic pneumococcus infections of the bronchial or bronchopneumonia type would clear up in a marvelous manner under its use. He always advised minimum initial doses for intravenous administration, never more than one twentieth of a c. c.

Doctor CORNWALL said that while, as he had emphasized in the paper, no reliance ought to be placed on the statistics of such a small number of cases as that reported, it certainly seemed a significant fact that in the last forty hospital cases he had had previous to adopting the plan of treatment just described, the mortality had amounted to twenty per cent. The good result in the present series of cases he attributed largely, first, to the system of diet employed, and, second, to the nondisturbance of the bowels. Clinically, he had obtained better results than under any previous treatment. The whole idea was to make the metabolic burden—the burden of nutrition—as light as possible for the patient. He had laid stress upon exactness in prescribing the kind of diet and the times for giving the food. He had also emphasized the importance of the salts in the diet, particularly the calcium salts. He could not agree with Doctor Hollis that there was no advantage in the dietary scheme which he had adopted over the diet usually employed in pneumonia, and too often given in a careless, haphazard way. As to chemotherapy, he had no faith whatever in its specific effect. In the whole range of medicine there was only one instance of a bacterial disease in which a chemical agent appeared to have any such effect, namely, syphilis; and here the result was apparently due to the fact that the diseased process was of such long duration.

Letters to the Editors.

FATAL ACCIDENTS FOLLOWING THE INJECTION OF ANTIMENINGITIS SERUM.

NEW YORK, *June 6, 1914.*

To the Editors:

Referring to Doctor Kramer's article under this title published in today's issue of your esteemed JOURNAL I beg to quote from my paper, The Continuous Warm Water Bath the Rational Remedy in Phymatiasis and Infectious Diseases in General:

"The power of the continuous bath of eliminating products of infection can further be demonstrated by its application in cases of cerebrospinal meningitis. The literature concerning serum treatment in this disease has assumed formidable dimensions, and the enthusiasm over this new method is so great that it appears to be a bold undertaking to speak of another remedy in place of the antimeningitic serum, as it is called. However, the enthusiasm may subside and the rational and safe remedy, which we have in the continuous bath, may be considered."

Strange to say, this carefully prepared paper, in which I gave the physiological explanation of the action of the continuous bath, and which was published in *International Clinics*, II, 23, none of our American medical journals, with one exception, has noticed, while a German translation was reviewed in German medical periodicals. Having mailed ten thousand copies of the original English version, I received many letters of acknowledgment and approval from distinguished colleagues, but remarks of mine on the still much advertised Flexner serum were not accepted for publication.

A. ROSE, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Lehrbuch der klinischen Diagnostik innerer Krankheiten. Mit besonderer Berücksichtigung der Untersuchungsmethoden. Bearbeitet von Prof. Dr. J. ESSER, Prof. Dr. R. FINKELNBURG, Prof. Dr. D. GERHARDT, et al. Herausgegeben von Prof. Dr. PAUL KRAUSE, Direktor der Medizinischen Poliklinik in Bonn. Zweite Auflage. Mit 3 Tafeln und 440 grossenteils farbigen Figuren im Text. Jena: Gustav Fischer, 1913. Pp. xxiv-1050.

This comprehensive and altogether excellent work on diagnosis combines the advantage of moderate bulk with that of joint authorship, the various sections of the subject being written by separate observers fully qualified in special lines. Not only is there considered the diagnosis of infectious diseases and of disorders of the upper and lower respiratory tract, circulation, genitourinary tract, metabolism, blood and alimentary canal, but there are included large sections on nervous diseases, clinical bacteriology, Röntgen ray diagnosis, the diagnosis of the diseases of infancy, and that of emergency cases in general. Professor Krause himself contributes the section on clinical bacteriology and Röntgen ray diagnosis, Professor Ortner that on circulatory diseases, Professor Finkelnburg a portion of that on nervous diseases, and Professor Mohr that on disorders of the alimentary tract. Of special originality as well as convenience is the chapter on disturbances of metabolism by Professor Staehelin, in which, in addition to the customary discussion of obesity, gout, diabetes, pentosuria, etc., information is systematically given on the clinical investigation of the condition of metabolism in general, the nitrogenous interchanges, the degree of food utilization, the metabolism of the nucleins, etc.

In the present second edition, beside the addition of the section of emergency cases, extensive modifications have been made in nearly every chapter in the interests both of completeness and of brevity. A decided novelty is the introduction in the index of authors of brief biographical sketches of various pioneers in medical science, e. g., Addison, Auenbrugger, Basedow, Bechterew, Bright, Charcot, Corvisart, Corrigan, etc. As Professor Krause remarks in the preface, students as well as practitioners too often remain in nearly complete ignorance of even the most salient features in the biography of the great medical men of the past. Yet these pioneers deserve biographical study as well as do the great poets, painters, and musicians of the past, and since there is no time for systematic presentation of medical biography in the existing overcrowded state of the curriculum, some indirect way of imparting this sort of information, such as the plan ingeniously conceived by Professor Krause, may with advantage be resorted to.

Rochester and the Mayo Clinic. A Fair and Unbiased Story Calculated to Aid Physicians to Greater Cures and Larger Incomes. By GEORGE WILEY BROOME, M. D. New York: The Shakespeare Press, 1914. Pp. 152. (Price, $1.10.)

This little book of one hundred and fifty ill printed pages deserves far more attention than would appear on superficial reading. It is most certainly not "a fair, unbiased story," but an ill tempered, sneering attempt to decry the scientific value, as well as the clinical results, of a surgical clinic which, to say the least for it, has done more to compel European attention to American skill than any other single agency. Our opinions are based chiefly upon those of several surgeons to whom the book was referred, some of whom had had previous experiences at Rochester. The one commendable purpose of the author is to pay a handsome tribute to that splendid pioneer in American, and indeed, international surgery, the late Nicholas Senn, a man whom it is a privilege to honor. Whether the Mayos directly or indirectly belittle the work of Senn is not demonstrated. The author, Doctor Broome, exhibits a malice and insincerity greatly to be deplored—which does only

harm to the cause of American surgery and to the author of the book.

Though ostensibly an unbiased account of the passage of events at the Mayo clinic, the author loses no opportunity to insert some adverse statement as to the ethics, and even the surgical conduct of the clinical staff. His description of the personality of the various figures is undignified and in certain passages little short of slanderous. The implications as to the business standards of the Mayo firm are sufficiently clear to exhibit an indefensible pettiness of spirit. The criticisms of the surgical technic are filled with evidences of ignorance of modern surgical methods; for examples, see pp. 40, 41, 42, 44, 46, 47, 54, 65, 66, 121, 122. As to the author's slurs on the complete and admirable business methods of the clinic, we must realize that, however unusual such a system may be, it stands as an excellent exemplar to others who can deliver similar results, which are well worth all they cost.

Chronic Colitis. Its Causation, Diagnosis, and Treatment. By GEORGE HERSCHELL, M. D., London, Late Senior Physician to the Kensington General Hospital and the National Hospital for Diseases of the Heart; Late Physician to the West End Hospital for Diseases of the Nervous System and to the Farrington General Dispensary, and, ADOLPHE ABRAHAMS, M. D., Cantab., Medical Registrar to the London Temperance Hospital. London, New York, Bombay, and Calcutta: Longmans, Green & Co., 1914. All rights reserved. Pp. vii-273. (Price, $2.)

The two authors have furnished a valuable addition to medical literature in this discussion of a condition that is becoming so frequent and of such real importance. In the case of chronic colitis they believe that, although an absolute increase is, if not certain, at least highly probable, the apparently greatly increased incidence is partly due to an improved capability of recognition. Of the three views as to the origin of chronic colitis, they believe that it is entirely and invariably anatomical. They do not hold that it is partly of nervous and partly of anatomical origin, nor that it is entirely and invariably a nervous hypersecretion of mucus in the intestine. Concerning the recognition of the disease, an important factor in erroneous diagnosis may be found in the opinion, still held by many of the older members of the profession, that colitis must always be accompanied by looseness of the bowels. Such, however, is not the case, as constipation is not uncommon. The first part of the book is devoted to a thorough discussion of the causation and diagnosis of the disease, while the latter half takes up in great detail the treatment. This book should be of much value to physicians.

Interclinical Notes.

Under the heading, McClure's Mistake, in the issue for June 13th, an admiring reader of the *Journal A. M. A.*, compliments that publication on the "promptness" with which it commented on the article, Painless Childbirth, in *McClure's Magazine* for June. We may be excused, perhaps, for drawing attention to the fact that we commented editorially on that very subject in our issue for May 23d, two weeks before the official organ got around to it. One unmistakable advantage which our readers enjoy is the utmost promptness consistent with accuracy with which topics concerning physicians and their welfare are handled by the NEW YORK MEDICAL JOURNAL. When deemed advisable, wire and cable have been called upon to present important news to our subscribers.

* * *

To our mind one of the best things in the *Dial* for June 1st is the review of a book by that clever journalist, H. Addington Bruce, Adventurings in the Psychical (Little, Brown & Co.). "It is difficult to understand," says the *Dial*, "why further volumes repeating the familiar accounts of ghosts and telepathy and clairvoyance and mediums and singular cases of personally puzzling incidents continue to attract readers. Books of this kind are made on the basis of a dramatic interest which is well enough for a journalistic pen, but which seems quite out of place in book form. Mr. Bruce's mind is of that extremely tolerant kind that can entertain antagonistic explanations at the same time. If the familiar saying of Voltaire that incantations together with a sufficient amount of arsenic will undoubtedly kill your neighbor's sheep could be applied to the present volume, it would be indicated by saying that Mr. Bruce believes in both arsenic and incantations. When the one applies the other is unnecessary, and vice versa. On the whole, books of this type do considerable harm in spreading the notion that the chief business of psychology is to investigate happenings of this order; and they do further harm in spreading the belief that many men of science are seriously concerned with this type of matter as evidence of the scientific principles that control thought."

* * *

Papers of interest to physicians in the *Popular Science Monthly* for June, beside the article by Professor Vogt, referred to last week, are The General Physicochemical Conditions of Stimulation in Living Organisms, by Professor Ralph S. Lillie; The Psychology of Relaxation, by Professor G. T. W. Patrick; Is the Montessori Method a Fad? by Professor Frank Pierrepont Graves; and Facts and Factors of Development, by Professor Edwin Grant Conklin. There are other kinds of articles, too, the perusal of which will do the physician no harm.

Meetings of Local Medical Societies.

TUESDAY, *June 23d.*—New York Psychoanalytic Society; Onondaga Medical Society, New York; Valentine Mott Medical Society, New York (annual); Washington Heights Medical Society, New York.

WEDNESDAY, *June 24th.*—New York Academy of Medicine (Section in Laryngology and Rhinology).

THURSDAY, *June 25th.*—New York Academy of Medicine (Section in Obstetrics and Gynecology); Ex-Intern Society of Seney Hospital, Brooklyn; Medical Union, Buffalo; New York Physicians' Association.

FRIDAY, *June 26th.*—Italian Medical Society of New York; Audubon Medical Society, New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending June 10, 1914:

Anderson, John F., Surgeon. Directed to proceed to Wilmington, N. C., and Savannah, Ga., for inspection of service operations in field investigations of the public health. **Billings,** W. C., Surgeon. Granted three days' leave of absence from June 5, 1914, under paragraph 193, Service Regulations. **Brown,** B. W., Surgeon. Directed to proceed to Boston, Mass., and assume charge of the Marine Hospital at that port. **Carrington,** P. M., Surgeon. Granted twelve days' leave of absence from June 8, 1914. **Clark,** T., Surgeon. Directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for the purpose of familiarizing himself with methods followed in making examinations for mental disorders. **Creel,** R. H., Passed Assistant Surgeon. Directed at the request of the Efficiency and Economy Committee of Illinois, to proceed to Springfield and other points in the State to make an investigation of sanitary administration and the laws under which it is conducted. **Ebersole,** R. E., Passed Assistant Surgeon. Granted seven days' leave of absence from June 3, 1914, under paragraph 195, Service Regulations. **Foster,** A. D., Passed Assistant Surgeon. Upon completion of sanitary inspections in South Carolina, relieved from duty at the Marine Hospital, New Orleans, La., and directed to proceed to Washington, D. C., and report to the bureau for temporary duty. **Goldberger,** J., Surgeon. Relieved from duty as member of board on new Nomenclature of Diseases. **Hommon,** H. B., Sanitary Chemist. Directed to proceed to Indianapolis, Ind., in connection with special field studies of sanitary wastes, to select suitable location for intensive studies and formulate plans for making these studies of the disposal of waste liquors resulting from manufacture of straw board. **Kerr,** J. W., Assistant Surgeon General. Detailed to attend the meeting of the Massachusetts Medical Society at Bos-

ton, Mass., June 9 and 10, 1914, for the purpose of presenting an address on the relation of physicians to public Health organization and administration. **Lumsden,** L. L., Surgeon. Upon completion of preliminary sanitary survey in Lawrence County, Indiana, directed to proceed to Mississippi with the force under his charge, for the purpose of making a similar survey of Union and another county of that State. **Marshall,** E. R., Passed Assistant Surgeon. Relieved from duty at Honolulu, Hawaii, and directed to proceed to Providence, R. I., and assume charge of the service at that port. **Roberts,** N., Passed Assistant Surgeon. Directed to proceed to Philadelphia, and report to Senior Surgeon Fairfax Irwin for temporary duty in the fumigation of vessels at that port. **Safford,** M. V., Assistant Surgeon. Granted twenty-six days' leave of absence from July 6, 1914. **Schereschewsky,** J. W., Surgeon. Relieved from duty as recorder of board on new Nomenclature of Diseases. **Wheeler,** George A., Acting Assistant Surgeon. Detailed to attend the meeting of the North Carolina State Medical Society at Raleigh, N. C., June 16 to 18, 1914. **Young,** G. B., Surgeon. Granted one year's leave of absence, without pay, from July 1, 1914.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending June 13, 1914:

Cade, William T., Captain, Medical Corps. Relieved from temporary duty in the Southern Department and further duty at the Presidio of San Francisco, Cal., and ordered to take the transport to sail from San Francisco, Cal., on or about July 5th for the Philippine Islands, for duty. **Chamberlain,** W. P., Major, Medical Corps. Detailed for duty with Company B, Fifth Infantry, Lakeville, Mass., July 5th to 9th, inclusive. **Christie,** A. C., Captain, Medical Corps. Granted one month's leave of absence. **Crabtree,** George M., Major, Medical Corps. Ordered to Fort Riley, Kansas. **Fletcher,** Harry Q., First Lieutenant, Medical Reserve Corps. Ordered to active duty in the service, and to station Fort Oglethorpe, Ga. **Gilchrist,** H. L., Major, Medical Corps. Granted one month and ten days' leave of absence, effective about July 27, 1914. **Harwood,** Thomas E., Jr., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Caswell, N. C., and will report to the commanding officer, Port of Embarkation, Galveston, Texas, for duty in the Transport Service. **LeConte,** Ralph M., First Lieutenant, Medical Reserve Corps. Relieved from duty at the Army Medical School, Washington, D. C., and ordered to proceed to his home for relief from active duty in the Medical Reserve Corps. **Loewy,** Ignata, First Lieutenant, Medical Reserve Corps. Relieved from active duty in the Medical Reserve Corps. **Shaw,** H. A., Major, Medical Corps. Assigned as inspector instructor with the organized militia of New Hampshire, at Manchester, June 15th to 20th, inclusive. **Turnbull,** S. J., First Lieutenant, Medical Corps. Relieved from temporary duty at Fort Preble, Me., and ordered to return to his proper station, Fort H. G. Wright, N. Y.

The following named officers of the medical corps are relieved from duty in the Philippine Islands, in time to take the transport sailing from Manila, about September 1st, and will proceed to the United States for assignment to station: Major William E. Vose, Captain Joseph Casper, Captain Taylor E. Darby, Captain, James S. Fox, Captain Ralph C. De Voe.

The following named officers of the medical corps are relieved from duty at the stations named and will take the transport to sail from San Francisco, Cal., about July 5, 1914, for the Philippine Islands: Major Elmer A. Dean, Presidio of Monterey, Cal.; Captain William L. Sheep, Letterman General Hospital, Presidio of San Francisco, Cal.; Captain William Denton, Fort Sam Houston, Texas; Captain John R. McKnight, Fort Andrews, Mass.

The preceding paragraph is amended and Captain William L. Sheep has been granted one month's leave of absence, and will sail on the transport leaving San Francisco on or about August 5, 1914, for the Philippine Islands; Major Elmer A. Dean has also been granted one month's leave of absence and will take the August 5th transport instead of the July 5th transport.

Births, Marriages, and Deaths.

Married.

Diehl—Taylor.—In Arlington Heights, Mass., on Wednesday, June 3d, Dr. Harold Edgar Diehl and Miss Helene Mortimer Taylor. **Dunn—Polhemus.**—In Franklin Park, N. Y., on Thursday, June 4th, Dr. James Conger Dunn, of West Union, Pa., and Miss Margaret Nevins Polhemus. **English—Johnson.**—In Red Bank, N. J., on Friday, June 5th, Dr. John T. English, of Newark, N. J., and Miss Cora Johnson. **Garlitz—Sureth.**—In Chicago, Ill., on Tuesday, June 2d, Dr. Arnold Garlitz, of St. Louis, Mo., and Miss Elsie Sureth. **McQueeney—Cunningham.**—In Bridgeport, Conn., on Monday, June 8th, Dr. Andrew McQueeney and Miss Mabel Gertrude Cunningham. **Mallon—Zane.**—In Philadelphia, on Tuesday, June 2d, Dr. Edward A. Mallon and Miss Anna Marie Zane. **Pollock—Percy.**—In Chicago, Ill., on Saturday, June 6th, Dr. Lewis J. Pollock and Miss Katherine Percy. **Proudfoot—McKay.**—In Boston, Mass., on Wednesday, June 10th, Dr. James A. Proudfoot and Miss Harriet McKay. **Stancil—Gilbert.**—In Lolo, Mont., on Wednesday, June 3d, Dr. W. W. Stancil and Miss Frederica Gilbert. **Wilson—Trewhella.**—In Meriden, Conn., on Thursday, June 18th, Dr. Leslie Adams Wilson and Miss Julia Elizabeth Trewhella. **Wright—Haldeman.**—In Harrisburg, Pa., on Thursday, June 4th, Dr. William Edward Wright and Miss Eliza Ewing Haldeman.

Died.

Armstrong.—In Athens, Pa., on Wednesday, June 10th, Dr. A. A. Armstrong, aged fifty-five years. **Beebe.**—In Cincinnati, Ohio, on Friday, May 29th, Dr. Brooks Ford Beebe, aged sixty-four years. **Blake.**—In Brooklyn, N. Y., on Tuesday, June 9th, Dr. James A. Blake, aged seventy-one years. **Dinges.**—In Red Bud, Ill., on Saturday, May 30th, Dr. H. A. Dinges, aged fifty-nine years. **Dugan.**—In Philadelphia, on Wednesday, May 27th, Dr. William J. Dugan. **Dunn.**—In Duquoin, Ill., on Saturday, June 6th, Dr. D. Winton Dunn, aged sixty-two years. **Gardiner.**—In Brooklyn, N. Y., on Thursday, June 11th, Dr. Sidney H. Gardiner, aged fifty-two years. **Gentsch.**—In New Philadelphia, Ohio, on Saturday, May 30th, Dr. D. C. Gentsch. **Grant.**—In Grafton, W. Va., on Monday, June 1st, Dr. William L. Grant, aged ninety-two years. **Harrington.**—In Brookline, Mass., on Monday, June 8th, Dr. Francis Bishop Harrington, aged sixty years. **Hughes.**—In Little Rock, Ark., on Monday, June 1st, Dr. S. D. Hughes, aged forty-three years. **Jeffries.**—In St. Louis, Mo., on Tuesday, May 26th, Dr. John A. Jeffries, aged eighty years. **Lee.**—In Birmingham, Ala., on Friday, May 29th, Dr. John Andrew Lee, aged sixty-one years. **Levan.**—In Dayton, Ohio, on Monday, June 1st, Dr. Benjamin H. Levan, of Columbus. **Merrill.**—In Chicago, Ill., on Monday, May 18th, Dr. Julia Dyer Merrill. **Mohn.**—In Lewisburg, Pa., on Thursday, June 4th, Dr. G. C. Mohn, aged fifty-six years. **New.**—In Dublin, Ga., on Thursday, June 4th, Dr. Ezra New, aged fifty-four years. **O'Brien.**—In West Baden, Ind., on Friday, June 5th, Dr. Edward J. O'Brien, aged thirty-five years. **Pipkin.**—In Tillar, Ark., on Saturday, May 30th, Dr. John W. Pipkin, aged forty-five years. **Pomeroy.**—In Springfield, Mass., on Wednesday, June 10th, Dr. William Henry Pomeroy, aged fifty-six years. **Reinhardt.**—In Berkeley, Cal., on Sunday, June 7th, Dr. George F. Reinhardt, aged forty-five years. **Riley.**—In Atlantic City, N. J., on Tuesday, June 9th, Dr. Edward B. Riley, aged fifty-seven years. **Roark.**—In Spokane, Wash., on Saturday, May 30th, Dr. Burchard H. Roark, aged thirty-seven years. **Robeson.**—In Pittsburgh, Pa., on Wednesday, June 3d, Dr. William F. Robeson, aged fifty years. **Shimer.**—In Baltimore, Md., on Thursday, May 21st, Dr. Jacob C. Shimer, aged seventy-five years. **Stoncipher.**—In Baltimore, Md., on Saturday, May 31st, Dr. Claude A. Stoncipher. **Waller.**—In Hanson, Ky., on Friday, May 29th, Dr. J. S. Waller, aged seventy years. **Webster.**—In Pasadena, Cal., on Sunday, May 24th, Dr. John P. Webster.

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Lectures and Addresses.

THE SERVICE OF MEDICINE TO CIVILIZATION.

BY VICTOR C. VAUGHAN, M. D.,

Ann Arbor, Mich.,

President of the American Medical Association.

Fellow members of the American Medical Association: I wish to express my appreciation of the honor conferred on me in being called to officiate as your president at this time. I had been content to serve in the ranks, and I have regarded this position as too honorable to be sought, or to be lightly regarded when spontaneously bestowed. During my term of office I will give you my most devoted service.

In ancient times, civilization was born, grew for a few generations, and fell into decay. In all instances it was local and covered only small areas. Its habitations were oases in the worldwide desert of ignorance and superstition, and after an ephemeral existence all were buried in the sand. Relatively small bodies of men occupying salubrious regions developed the elements of science and for a few centuries flourished. Their superior knowledge gave them dominion over their less fortunate neighbors, who were converted into slaves. Conquest brought disease and the local civilizations were obliterated by contagion. History is replete with instances in which triumphant heroes have brought to their rejoicing countries with their prisoners of war invisible and intangible agents of death, which have ultimately vanquished the victors.

The Egyptians of the Pharaohs drained the land, built aqueducts, disposed of their dead hygienically, reared temples and cities, maintained law and order, developed the elements of literature and science, and devised and employed simple machinery. In speaking of the ancient Egyptians, Diodorus says: "The whole manner of life was so evenly ordered that it would appear as though it had been arranged by a learned physician, rather than by a lawgiver." Herodotus declared ancient Egypt the healthiest of countries, but filled with physicians of whom "one treats only the diseases of the eye, another those of the head, the teeth, the abdomen or the internal organs." Writing of a later time, Gibbon said: "Ethiopia and Egypt have been stigmatized in all ages as the original source and seminary of the plague." It is evident that in the time of its great civilization Egypt was salubrious; coincident with the decline in the learning and wisdom of its people, it was visited and desolated by pestilence. That Egypt had lost its salubrity as early as the period of the exodus of the Israelites is shown by many passages in the Bible in which the chosen people are threatened with the diseases of Egypt if they neglect or violate the laws. Moses, "learned in all the wisdom of the Egyptians," codified his sanitary rules and regulations in the form of religious rites and ceremonies and thus secured their observance among the faithful even down to the present time.[1]

The Greek evolved the most glorious civilization of antiquity because he was the most ardent student of science, but he was unable to cope with malaria and bubonic plague, and his descendants have been in bondage to malaria for nearly twenty-four centuries. The medicine of Hippocrates, the wisdom of Socrates, the philosophy of Plato, the plays of Aristophanes, the laws of Pericles, and the science of Aristotle, could not save the Greek from the degrading effects of disease, and under its withering influence, the civilization of this great people slowly but surely decayed. Its matchless marbles were thrown into the waste, its magnificent temples were allowed to crumble, its altars were deserted, its literature became insipid, its philosophy lost its virility, its science was forgotten, and the children of this blighted civilization were sold in the slave markets of Rome and in later generations paid tribute to the Slav and the Turk. There certainly were eminent Greek scientists and physicians for centuries after Hippocrates, but they were not products of Greek soil. They arose in Asia Minor, Egypt, Italy, and elsewhere. It is of interest to note that malaria, according to Jones, was introduced into Greece in the fifth century, B. C., and the fourth century showed the decline of Hippocratic medicine. Neuburger says: "The sons and grandsons of Hippocrates, as well as his immediate disciples, Apollonios and Dexippos, were at the head of that series of physicians who laid emphasis upon theoretical conjecture and gave to medicine in the fourth century B. C. its speculative coloring." Taken with the fact that other departments of learning showed similar retrogression at the same time, this sequence between the introduction of malaria and the trend of medicine toward speculation is worthy of record. That pestilence aided the

*President's address before the American Medical Association, Sixty-fifth Annual Session, Atlantic City, June, 1914.

[1] None of the papyri of Ebers [illegible] throws any light on the problems discussed in this article. Indeed, the value of both these papyri was at first overestimated. They are now regarded as compilations and consist largely of lists of remedies and furnish no information concerning epidemics or their effects upon the people, except to indicate that hookworm or bilharzia infection, one or both, at that time [illegible]

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barbarians in the final desolation of Greece is indicated by the following quotation from Thumb:

At a time when the German tribes began moving, that is to say, at the end of the third century A. D., a gradual immigration of Slavonic tribes into the Balkans began; their invasions became more and more frequent, since the Goths chose Western Europe as the goal of their conquering expeditions and left to the Slavs an open passage into the Balkan countries. But a real Slavonization of some Greek territories took place only in the eighth century, and attained its highest point when a horrible plague in 746 depopulated the Greek territories.

I am aware of the fact that some have objected to considering the present inhabitants of Greece as descendants of ancient Greeks. The former have been designated as "so called Greeks," "a bastard people," "a mosaic of Vlacks, Arnauts, and Slavs." Some years ago Fallmerayer made the very positive statement that "no drop of ancient Greek blood flows in the veins of the modern Greek." Thumb has shown the absurdity of these statements and declares that cranial measurements, local names, customs, and religion show that while some admixture with the Slav has taken place, the modern Greek is a lineal, and on the whole a fairly pure descendant of those who established the greatest civilization of antiquity. Modern Greek Christianity is only a modification of ancient Greek paganism, in which gods have been supplanted by saints. "Charon the old ferryman in the underworld is today the god of death: he conducts the souls in a dreary procession to his realm. As in antiquity, a copper coin is put into the mouth of a dead person as a fee for the ferry into the other world. The ancient Moirai or fates (today Mires) still determine the fate of the newborn child, spin and cut the thread of life. The bride is conducted into her new home, the dead are buried with ceremonies which the Greeks used two thousand years ago. A sick person seeks recovery by lying down to sleep in the church of a saint, like those persons who once made a pilgrimage to the temple of Asklepios in Epidaurus. The Greeks of today are descendants of the ancient Hellenes, not in the sense in which every modern Greek could trace his origin back to an ancient Athenian or Spartan, but in the sense that in the modern people ancient blood flows largely and in some districts almost purely, and still more in the higher sense that the modern race shows a development of the Greek population of the ancient world."

The broken remnants of older civilizations found refuge and asylum in the salubrious climate of the Italian peninsula, and soon its hillsides were covered with vines and olives, while its plains and valleys bore abundant harvests. Rome was built and her empire promised to extend to the remotest parts of the world, but the ancient Roman contributed but little to science, and we are told by the historian that "a pestilence raged for fifteen years (251-265) and carried off one half of the inhabitants of the Empire." The seat of civilization was moved to the shore of the Bosphorus, but the lamp of science was well nigh extinguished and the clouds of the middle ages enveloped the world and shrouded its inhabitants for more than a thousand years. "A fabulous and formless darkness overcame the fairest things of earth."

If one reads the history of the decline of the Roman Empire, he can hardly fail to see that disease was an important factor in that retrograde movement, which involved the greater part of the then known world. Jones and Ross find the earliest reference to malaria among the Romans in the comic poet Plautus, who died 184 B. C., and they quote Terence, who died 159 B. C., and whose language is explicit in showing, not only the prevalence of malaria, but also the recognition of the different forms. From that time on, reference to the wide prevalence of malarial diseases, not only in the open country, but also in the city, is frequent and definite. Jones says:

There is then, every reason for supposing that malaria was unknown in Italy in early times, was well known at the beginning of the second century B. C., and that it gradually became more common during the next two hundred years. If this be so, it is at least a plausible conjecture that it was introduced by Hannibal's Carthaginian mercenaries. Africa seems to have been the original home of disease, and it is probable that some of his troops were infected. The constantly repeated devastation of Italy in the second Punic war would be sure to turn a large part of it into marshy land, thus affording a convenient breeding place to the mosquitoes which were infected by the malarial patients among the Carthaginians. The similar condition of Attica during the closing years of the fifth century B. C. offers a striking parallel. This opinion does not rest on mere conjecture. We are told by Livy that in the year 208 B. C. a severe epidemic attacked Italy. It did not cause many deaths, but resulted in much lingering disease, that is, most probably, chronic malaria.

Malaria, however, was not the only disease which contributed to the degeneration of the Roman people. I have already referred to the pestilence of the third century, which is said to have destroyed half the inhabitants of the vast empire within fifteen years. This certainly was not malaria. Moreover, this was not the first great pestilence which afflicted the Roman Empire. Neuburger says:

The "plague," so called by Galen or Antonine, was first introduced from Syria by the Roman army. . . . The extraordinary contagiousness of the epidemic is emphasized in all contemporary reports. There appear to have been a variety of simultaneous manifestations, the descriptions indicating afflictions chiefly resembling smallpox, or dysentery, but adequate criteria on which to express an opinion are wanting. The "plague" commenced 165 A. D., claimed innumerable victims, and lasted at least fifteen years.

Jerome observes of the Roman state:

With peace, order and good government a curious lethargy fell on the warrior state, deepening into a coma in which it died so quietly that neither the contemporaries nor we moderns can fix the date of the decease. The fact, however, finally became apparent when the phenomena of decay were indubitable, and the world, deprived of the master, fell back helplessly into a condition hardly more advanced than in the ages before its subjection, save that it had the imperishable memory of Rome to give it hope, direction, and courage.

In the fourth century the seat of government was removed to Byzantium. It is probable that this change was, in part at least, determined by the insalubrity of Italy. Early in the fifth century Rome was pillaged, but the real conquerors of Rome were not the Goths and Vandals, but malaria and the plague. Disease continued to devastate Italy. Creighton says:

About the year 668 the English archbishop elect, Vighard, having come to Rome to get his election confirmed by the pope, Vitalanius, was soon after his arrival cut off by the pestilence with almost all who had gone with him.

Twelve years after, in 680, there was another severe pestilence in the months of July, August, and September, causing a great mortality at Rome and such a panic at Pavia that the inhabitants fled to the mountains. In 746 a pestilence is said to have advanced from Sicily and Calabria and to have made such devastation in Rome that there were houses without a single inhabitant left.

From that time on the plague periodically spread over Italy until the seventeenth century, while malaria has been in continuous possession down to our own time. We are told that the epidemic of 1348 reduced the inhabitants of the Eternal City to 20,000.

We are familiar with the graphic description of the plague in Florence by Boccaccio, who wrote:

Such was the cruelty of Heaven, and perhaps of men, that between March and July following, it is supposed, and made pretty certain, that upward of a hundred thousand souls perished in the city only, whereas, before that calamity, it was not supposed to have contained so many inhabitants. What magnificent dwellings, what noble palaces were then depopulated to the last person, what families extinct, what riches and vast possessions left, and no known heir to inherit, what numbers of both sexes in the prime and vigor of youth—whom in the morning neither Galen, Hippocrates, nor Æsculapius himself, but would have declared in perfect health—after dining heartily with their friends here, have supped with their departed friends in the other world.

There are but few passages in literature so tragic as the short record of the plague of the fourteenth century begun by the friar of Kilkenny, but soon interrupted by his death:

I friar, John Clyn, of the order of Friars Minor and of the convent of Kilkenny, wrote in this book those notable things which happened in my times, which I saw with my eyes, or which I learned from persons worthy of credit. And lest these things worthy of remembrance should perish with time and fall away from the memory of those who are to come after us, I, seeing these many evils, and the whole world lying, as it were in the wicked one, *among the dead, awaiting death*—as I have truly heard and examined, so have I reduced these things to writing; and lest the writing should perish with the writer, and the work fail altogether with the workman, I leave parchment for continuing the work, if haply, any man survive, and any of the race of Adam escape this pestilence and continue the work I have begun.

That the period of the Byzantine Empire (395-1453) was one of general degeneracy is shown on every page of the historian. It produced no literature of merit, and "the study of Nature was regarded as the surest symptom of an unbelieving mind." Neuburger says:

The Byzantines merely followed the downward path. Surfeited with tradition, which made modes of thought appear inevitable, because customary, filled as a nation with overweening self conceit, fed by the glories of the Græco-Roman past, they neither could nor would destroy the historic bridge nor replace the crumbling ruin with a new edifice. It lay outside the sphere of their interests to enter into that conscious emulation of antiquity which, emphasizing the growing contrast between past and present, and eliminating the obsolete and the inert, is the essence of mental cultivation. Forgetting that it was the free development of the national spirit which constituted the greatness of the past, they went so far as to smother its liveliest expression by denying, in their rigid adherence to Attic speech, all part in literature to the language of the people. The more incapable did the Byzantines become of grasping the spirit, the more tenaciously did they cling to the letter—a reflection of the mania for titles and ceremonies in political life—and thus they dragged the inanimate mechanism, the dry bones of antiquity through a thousand years, instead of erecting a new edifice on the foundations of antiquity.

The physician and historian, Procopius, in his account of the great pestilence in the reign of Justinian "emulated the skill and diligence of Thucydides in the description of the plague at Athens." Of this epidemic Gibbon says:

In time its first malignancy was abated and dispersed; the disease alternately languished and revived; but it was not till the end of a calamitous period of fifty-two years that mankind recovered their health, and the air resumed its pure and salubrious quality. No facts have been preserved to sustain an account, or even a conjecture, of the numbers that perished in this extraordinary mortality. I only find that during three months, four and at length ten thousand persons died each day at Constantinople, that many cities in the east were left vacant, and that in several districts of Italy, the harvest and the vintage withered on the ground. The triple scourge of war, pestilence, and famine afflicted the subjects of Justinian, and his reign is disgraced by a visible decrease of the human species, which has never been replaced in some of the fairest countries of the globe.

This epidemic spread over the whole of Europe and it took more than a century to reach England, where "it fabled long after in prose and verse as the great plague of Cadwallader's time." Then for quite a thousand years it reaped its periodical harvests as often as immunity was lost in new generations.

The historian, as a rule, confines his descriptions to martial and political events and consequently gives a wholly erroneous idea of true conditions. Gibbon says: "If a man were called upon to fix the period in the history of the world, during which the condition of the human race was most happy and prosperous, he would without hesitation, name that which elapsed from the death of Domitian to the accession of Commodus" (from 96 to 180 A. D.). Noah Webster, in his work on epidemics and pestilence, quotes the preceding with the following just comment:

It is certain that, at this time, the Roman Empire was in its glory, and governed by a series of able and virtuous princes, who made the happiness of their subjects their principal object. But the coloring given to the happiness of this period is far too brilliant. The success of armies and the extent of empire do not constitute exclusively the happiness of nations; and no historian has a title to the character of fidelity, who does not comprehend, in his general description of the state of mankind, moral and physical, as well as political evils.

Let us make brief inquiry into the diseases of this "most happy and prosperous" period. It was preceded by, it began in, continued in, and closed in pestilence. That the plague was endemic in Italy at that time and that it developed in epidemic form with each increase in susceptible material there can be no doubt. Of the epidemic of 68 A. D. Tacitus says:

Houses were filled with dead bodies and the streets with funerals; [illegible] plebeians were suddenly taken off, amidst the lamentations of their wives and children, who, while they assisted the sick, or mourned the dead, were seized with the disease, and perishing, were burned on the same funeral pyre. To the knights and senators the disease was less mortal, though these also suffered in the common calamity.

About this time the plague appears to have spread over the whole of Asia, northern Africa, and Europe. According to Short, the deaths from this disease in Scotland between 88 and 92 A. D. amounted to not less than 150,000. This was prob-

ably not less than one fourth, possibly one half, the population of Scotland at that time.

In the year 80 A. D. the deaths from the plague in Rome at the height of the epidemic numbered 10,000 a day. It is estimated that the population of Rome at that time was somewhat more than one million. Exacerbations of the disease in Rome are recorded for the years 102, 107 and 117 A. D. According to Short, 45,000 died of the plague in Wales in 114 A. D. The year 167 A. D. is noted for an unusually severe outbreak of the plague at Rome, where it continued for many years. In the year 173 A. D., the Roman army was threatened with extinction by disease, and special epidemics, or rather exacerbations of the epidemic, prevailed in Rome in 175 and 178 A. D. That the "happy and prosperous" period was followed by a continuation of the plague is shown by the following quotation from Herodian:

A great pestilence raged throughout Italy at that time (about 187 A. D.), but with most violence in the city, by reason of the great concourse of people assembled from all parts of the earth. The mortality among men and cattle was great. The Emperor, by advice of physicians, retired to Laurentium, on account of the coolness of the place, which was shaded with laurels. It was supposed that the fragrance of the laurels acted as an antidote against the contagion. The people in the city also, by the advice of physicians, filled their noses and ears with sweet ointments and used perfumes, etc.

Under the spell of the historian we have been inclined to regard the period when the greater philosopher, Marcus Aurelius Antoninus, sat on the throne of the world, as the golden age. Let us therefore listen to a few words from his personal attendant, courtier and historian, who writes:

Unless he, M. Antoninus, had been born at this juncture, the affairs of the empire would have fallen into speedy ruin; for there was no respite from military operations. War raged in the east, in Illyricum, in Italy, and in Gaul. Earthquakes with the destruction of cities, inundations of rivers, frequent plagues, a species of locusts ravaging the fields; in short every calamity that can be conceived to afflict and torment man scourged the human race during his administration.

It is estimated that during the dark ages the average of human life was less than twenty years. A high birth rate was necessary to keep the race alive, but notwithstanding this, Europe was sparsely inhabited. At the time of the Norman Conquest the inhabitants of England numbered between two and two and one half million, probably near the former, for they had not reached the greater number a hundred years later. Creighton says: "It would be within the mark to say that less than one tenth of the population was urban in any distinctive sense of the term. After London, Norwick, York, and Lincoln, there were probably no towns with five thousand inhabitants." Indeed, urban life, as we now know it, was quite impossible in this age of pestilence and would soon become so again were the functions of preventive medicine relaxed.

Most of the great epidemics of the middle ages were designated as *pestilentia* or *magna mortalitas*. In the most deadly visitations, the bubonic plague is so accurately described that there can be no doubt about its identity, but it must not be supposed that the people enjoyed any high degree of health even in those periods when this contagion languished on account of exhaustion of susceptible victims. Ergotism, under the name of Saint Anthony's fire, was endemic in France and adjacent territories; Normandy was filled with lepers, but Christ's poor were not confined to that country. England was regarded as the special home of hunger, but abundance was a stranger to the masses in every land. The mysterious sweating sickness, apparently brought to England with Henry Tudor in 1485, developed in five distinct epidemics which were characterized by the fact that the mortality was greater among the rich than among the poor. Typhus, known as *morbus pauperum*, prevailed largely in the jails, on ships, and among the squalid inhabitants of the cities. Even the discovery of America carried to Europe the scourge of syphilis, which was spread over Italy by the soldiers of Charles VIII, and within a few years reached the most distant parts of Europe. Smallpox appeared in England in the sixteenth century, having journeyed, according to the most reliable authority, all the way from the Orient. That tuberculosis, diphtheria, dysentery, and other diseases, still with us, prevailed during the middle ages is shown by the records, but they were overshadowed by the higher mortality of those mentioned above. Improved agriculture has extinguished the fire of St. Anthony, except in the most benighted provinces of Russia. The great fire in London in 1666 destroyed the infected rats and relieved England of the bubonic plague, which had been endemic in that country since 1349. Something more than one hundred years later the discovery of Jenner robbed smallpox of its horrors, wherever vaccination is properly enforced. The investigations of Howard improved the sanitation of jails and workhouses, and did much to eradicate typhus.

The assertion has been made that the infectious diseases have benefited the race by the destruction of the unfit. This idea I have combated most vigorously since our study of typhoid fever in the army in 1898. My colleagues and I found that out of 9,481 soldiers who had previously been on the sick report and could not be regarded as possessing standard health, 648, or 6.8 per cent., contracted typhoid fever; whereas, out of 46,384 men who had no preceding illness, 7,197, or 15.3 per cent., developed typhoid fever. More than ninety per cent. of the men who developed typhoid had no preceding intestinal disorder. Under ordinary conditions the strong, busy man, especially the one whose activities demand wide excursions from his home, is more likely to become infected than the one whose sphere of action is more limited on account of infirmity. The reason for this is too obvious to need statement, and it follows that more men than women and more adults than children have typhoid fever. Moreover, the case mortality is greater among the strong, because death in the infectious diseases is often due to the rapidity with which the invading organism is broken up by the secretions of the body cells and the protein poison made effective. From this I have concluded that contagion, like war, destroys the very flower of the race. This view is sustained by the historians of the pestilences of former times.

Thucydides, in his description of the plague at

Athens, says: "Moreover, no constitution, whether in respect of strength or weakness, was found able to cope with it; nay, it swept away all alike, even those attended to with the most careful management." Procopius, in his account of the Justinian epidemic, states that youth was the most perilous season, and females were less susceptible than males. Cogan, in describing the outbreak of typhus at Oxford in 1577, writes: "The same kind of ague raged in a manner over all England, and took away very many of the strongest sort, and in their lustiest age, and for the most part, men and not women and children, culling them out here and there, even as you would choose the best sheep out of a flock." In his account of the plague of 1665 in London, Boghurst makes the following statement: "Of all the common hackney prostitutes of Luteners-lane, dog-yard, cross-lane, Baldwins-gardens, Hatton-gardens and other places, the common criers of oranges, oysters, fruits, etc., all the impudent drunken, drubbing bayles and fellows and many others of the *rouge route*, there is but few missing —verifying the testimony of Diemerbroech that the plague left the rotten bodies and took the sound." Like testimony comes from an account of the plague at Moscow: "Drunkards and persons of feeble temperament were less subject to attack." Davidson observed that typhus fever was more frequent among the robust than the weak. He states that out of 429 cases the spare and unhealthy taken together made only about seventeen per cent. He adds that the death rate among the poor was one in twenty-three, while among the well to do, it was one in four. The greater mortality of typhus among the higher classes has been noted by Barber and Cheyne and by Braken. Hurty, nearly a century ago, wrote: "A fever which consigns thousands to the grave, consigns tens of thousands to a worse fate—to hopeless poverty, for fever spares the children and cuts off the parents, leaving the wretched offspring to fill the future ranks of prostitution, mendicancy and crime." Creighton says:

> The best illustrations of the greater severity and fatality of typhus among the well to do come from Ireland in times of famine, and will be found in another chapter. But it may be said here, so that this point in the natural history of typhus may not be suspected of exaggeration, that the enormously greater fatality of typhus (of course, in a smaller number of cases) among the richer classes of the Irish families, who had exposed themselves in the work of administration, of justice, or of charity, rests on the unimpeachable authority of such men as Graves, and on the concurrent evidence of many.

A surgeon in the British navy at the time of William III and Anne tells how he was led to practice bleeding in fever as follows:

> I had observed on a ship of war, whose complement was near 500, in a Mediterranean voyage in the year 1694, when we lost about ninety or 100 men, mostly by fever, that those who died were commonly the young, but almost always the strongest, lustiest, handsomest persons, and that two or three escaped by such natural hemorrhages, which were five or six pounds of blood.

The middle ages were indeed dark physically, intellectually, and morally. Here and there, now and then, some man of genius towered above the general low level of his contemporaries and not infrequently he paid dearly for his audacity. For some centuries the Arab, especially in Spain, stood out alone as the torch-bearer of science, and he, when driven back into the insalubrity of Northern Africa, lapsed into barbarism. Neuburger writes:

> Fortunately the fate of medieval medicine was not dependent on Byzantium alone. An admirable illustration of the doctrine of conservation of energy is afforded by the fact that, with the decline of intellectual energy at home, a contemporaneous development of Greek medicine took place abroad, which, if at times misguided, was yet full of vitality, whilst the medical art of the newly arisen world of Islam reached a height unsurpassed during the middle ages.

In the greater part of Europe, ignorance and disease held full sway. In the midst of great calamities "the will-o-the-wisp of superstition is an irresistible attraction and offers the only ray of hope." Strong men, neglectful of their earthly duties, betook themselves to secluded places and lost themselves in dreams of a heavenly paradise. Mysticism, fanaticism, and superstition dominated all conditions of men. Rulers, illiterate, immoral, and even incestuous, occupied palaces while the masses died of starvation. The history of the time is a record of diseased, degenerated, demented man. There can be no doubt that disease has overthrown civilization in the past, and there is no surety that it may not do so again. The recent outbreak of the plague in Manchuria and its more recent appearance in Cuba are not without their warnings. It remains to be seen if those who control our government have the intelligence necessary to protect our country against the invasion of pestilence. The failure to provide for camp sanitation in 1898, the behavior of California officials on the finding of plague in San Francisco, and the general indifference of National and State authorities toward the eradication of disease, discourage the hope that intelligent patriotism is widely distributed among us. As a contemporary of Mr. Dowie and Mrs. Eddy, and as a citizen of a country in which the osteopath and chiropractic flourish, I feel some embarrassment in speaking of the fanaticism and ignorance of the dark ages.

The history of medicine is that of mankind. Born in naked ignorance, bound in the swaddling clothes of credulity and nursed on superstition, medicine has had its savants and its fakers, its triumphs and its failures, its honors and its disgraces. It has attracted and still attracts to its ranks men of the purest motives and those who are impelled by the basest desires. It can be said without fear of contradiction that medicine has done more for the growth of science than any other profession, and its best representatives in all ages have been among the leaders in the advancement of knowledge, but the average medical man conforms in intellect and character to the community in which he lives. The food of the faker is ignorance and he thrives where this commodity is most abundant. The uncontrolled fool moves to his own destruction. This is the only way in which Nature can eliminate him. A wise government protects its incompetents from medical and other fakers, but such government can exist only where wisdom predominates.

A study of epidemics shows that in the presence of widespread contagion mankind in the mass tends to revert to the barbarous state. This is the unvarying testimony of all authorities, medical and lay,

secular and religious, who have made the records. The historian Niebuhr, in discussing the report on the plague in Athens by Thucydides, says: "Almost all great epochs of moral degradation are connected with great epidemics." F. A. Gasquet, abbot president of the English Benedictines, in his history of the black death, writes: "The immediate effect on the people was a religious paralysis. Instead of turning men to God, the scourge turned them to despair, and this not only in England, but in all parts of Europe. Writers of every nation describe the same dissoluteness of manners consequent upon the epidemic." A Venetian historian notes the general dissoluteness which followed the disease and its effects in lowering the standard of probity and morals. Covino of Montpellier bears testimony to the baneful effects of the scourge on the morals of those who escaped, and concludes that such visitations exercise the most harmful influence on the general virtue of the world. William of Nangis, in his history of the plague in France in 1348, concludes with the following:

> But alas! the world by this renovation is not changed for the better. For people were afterwards more avaricious and grasping, even when they possessed more of this world's goods than before. They were more covetous, vexing themselves by contradictions, quarrels, strifes, and lawsuits.

Many similar references could be given, but these suffice to show that disease breeds ignorance, immorality, and strife. Our inquiries into the influence of disease on civilization, however, have brought out the fact that people living in comparative health have within a few generations made beginnings, some, at least, highly creditable, in government, literature, and science. The Hellenic tribes of Greece built up their wondrous civilization within a few centuries. It is true that Rome was not built in a day, but the seven hills were covered with houses and temples, the great aqueducts brought abundant supplies of pure water from the mountains, and the wonderful sewers remain as evidence of sanitary skill, and all this was accomplished in a relatively short period measured in the history of the race. The world moved forward at a rapid pace with the dawn of science in the last century. It is not extravagant to prophesy that with ten centuries of freedom from disease, both inherited and acquired, the world would be regenerated and the superman be born.

It is not necessary to turn to history for examples of the degrading effects of disease on man. We see it today in the physical inferiority, intellectual weakness, and moral irresponsibility of those peoples who are still under the dominion of malaria and kindred diseases. My illustrious predecessor in this office, Doctor Gorgas, has demonstrated what scientific medicine may accomplish in those pestilential regions, and it is within reason to look forward to the time when the tropics may supply choice locations for civilized man. In like manner the valleys of the Tigris and Euphrates are being reclaimed and Babylon and Nineveh may again become seats of learning and culture. The modern sanitarian is quite competent to rebuild the home in which the cradle of civilization was rocked.

After the last epidemic of the plague in London in 1665, the death rate, so far as it can be ascertained, fell to between seventy and eighty per 1,000. During the next century it fell as low as fifty, but fluctuated greatly with recurring epidemics of typhus and smallpox. In the nineteenth, it gradually and quite constantly decreased and is now about fourteen. In 1879-80, the first year in which the mortality statistics of the United States possess sufficient accuracy to be of any value, the death rate in the registered area was 19.8; in 1912 it was 13.9—a decrease of thirty per cent. During the same time the mortality from typhoid fever has decreased fifty per cent.; that from scarlet fever eighty-nine per cent.; that from diphtheria eighty-four per cent.; that from tuberculosis fifty-four per cent. Hoffman states that had the death rate for tuberculosis in 1901 continued, there would have been 200,000 more deaths from this cause from that date to 1911 than actually did occur, or the actual saving of lives from death by tuberculosis accomplished in that decennium averaged 20,000 a year. A battle in which 20,000 are slain stirs the world at the time and fills pages of history later. Preventive medicine measures its successes by the number of lives saved, and 20,000 a year preserved from death from one disease is no small triumph. In the last century the average of human life has been increased fifteen years and this increase could be duplicated in the next twenty years if the facts we now possess were effectively employed. Hoffman further states that the addition to the material wealth of this country secured by the reduction of deaths from tuberculosis within ten years amounts approximately to 6,200,000 years of human life, covering its most productive period. Medicine discovered the facts which have made this great work possible and has directed their application. With evidence of this kind before them, will our lawmakers listen to those who demand recognition as practitioners of medicine without proper qualification?

The further developments of medicine, both curative and preventive, depend on scientific investigations. The public is the beneficiary and should in every way encourage medical research. By the application of discoveries already made, the burden of disease has been lightened, sickness has become less frequent and less prolonged, a greater degree of health has been secured, the efficiency of the individual and of the nation has been increased, and life has been prolonged and made more enjoyable. The Federal government and the States should sustain and promote scientific research. That government is the best which secures for its citizens the greatest freedom from disease, the highest degree of health and the longest life, and that people which most fully secures the enjoyment of these blessings will dominate the world.

Medicine consists of the application of scientific discovery to the prevention and cure of disease. All else which may go under the name of medicine is sham and fraud. Without advancement in the physical, chemical, and biological sciences, there can be no progressive movement in medicine. Scientific knowledge is gained only by observation and experiment. Before the time of Jenner, we are

told by the historian, it was unusual to meet in London one whose face was not marked by smallpox. There was a popular belief that one who had cowpox was immune to smallpox. Jenner put this belief to a scientific test and the result was the discovery of vaccination, and this secured the abolition of this disfigurement and a marked reduction in mortality. In 1849, a village doctor, with a crude microscope, studied the blood of animals sick with anthrax and compared it with that of healthy ones. He discovered the anthrax bacillus. The work was extended by Davaine, Pasteur, Koch, and others, and from this, the science of bacteriology has been developed. The particular causes of many infectious diseases have been recognized, isolated, and their effects on animals demonstrated. Many of the mysteries of contagion have been revealed and the conditions of the transmission of disease made known. The fundamental principles of preventive medicine have been developed into a science which is today the most potent factor in the progress of civilization. Finlay suspected a certain mosquito to be the carrier of the virus of yellow fever. Reed and his coworkers demonstrated the truth of this theory, the work of Gorgas has freed Havana from the pestilence, and the construction of the Panama Canal is an accomplished fact.

We are sorry for the Greek, whose bodily health, mental strength, and moral sense were depressed by the invisible and insidious organisms of malaria, and truly his memory deserves our sympathy. He had no microscope, and how could he detect or even suspect that the mosquitoes which had annoyed his ancestors for generations had armed their lancets with deadly poison brought from Africa? The Greek had never heard of quinine and the other cinchona alkaloids. He did not know the land whose forests were even then elaborating those products, which, centuries later, were of greater value than gold to man, and proved to be an essential help in the uplift of mankind. Laveran discovered *Plasmodium malariæ*. Ross studied its life history, and the fetters of a disease that has so long retarded the progress of man, have been broken. Mitchell and Reichert investigated the poisonous properties of snake venom. Sewall immunized animals with it. Ehrlich studied the similar bodies, abrin, ricin and diphtheria toxin, and von Behring and Roux gave the world antitoxin, the magical curative value of which has greatly reduced the mortality from diphtheria. The experiments of Villemin demonstrated the contagious nature of tuberculosis, long suspected and frequently denied. The diligent research of Koch resulted in the recognition and isolation of the causative agent, and since this discovery the mortality of the Great White Plague in Europe and the United States has been diminished more than half, and it is within the range of sanity to look forward to the time, when the former "Captain of the hosts of death" will be known only by the fearful records he once made in the history of man's struggle to be relieved from the heavy tribute paid to infection.

We boast of a great civilization, but this is justified only within limits. Science more nearly dominates the world than at any time in the past. Learning permeates the masses more deeply, but credulity and ignorance are widely prevalent. In this country of nearly one hundred millions, there are thousands whose greed impedes the progress of the whole, tens of thousands whose ignorance retards their own growth, and other thousands who live by crime and procreate their kind to feed on generations to come. We have our schools, colleges, and universities, while our almshouses, insane asylums, and penal institutions are full. In our cities we see the palatial homes of the very rich, the splendid temples of trade and commerce, the slums of want and poverty, and the homes, both rich and squalid, of vice and crime. No nation in this condition can be given a clean bill of health. Our hilltops are illuminated by the light of knowledge, but our valleys are covered by the clouds of ignorance. We have not emerged from the shadows of the dark ages. The historian of the future will have no difficulty in convincing his readers that those who lived at the beginning of the twentieth century were but slightly removed from barbarism, as he will tell that the school, saloon, and house of prostitution flourished in close proximity; that the capitalist worked his employees under conditions which precluded soundness of body; that the labor union man dynamited buildings; that while we sent missionaries to convert the Moslem and the Buddhist, ten thousand murders were committed annually in the midst of us, and that a large percentage of our mortality was due to preventable disease.

Evidently there is much to be done before we pass out from the shadows of ignorance into the full light of knowledge. In this great work for the betterment of the race the medical profession has important duties to perform. I do not mean to imply that the uplift of mankind devolves wholly on the medical man. The burdens are too many and too diversified, the ascent is too steep and the pathways are too rough for one profession to hope to reach unaided the high plateau we seek. Moreover, other callings have no right, and should have no desire to shirk the moral responsibilities, which rest alike on all. But in past ages, medical men have been the chief torch bearers of science, the only light in which man can safely walk, and we must keep and transmit to our ancestors this trust and honor. I know of no scientific discovery, from the ignition of wood by friction to the demonstration of the causes of infection and the restriction of disease, which has not sooner or later assisted in the betterment of the race. It may be added that nothing else has so aided man in his slow and halting progress from the pestilential marshes of ignorance to the open uplands of intelligence.

In so great a work as the eradication of preventable disease, all intelligent people must cooperate. The law must support us by proper enactments, and these must be enforced with justice and intelligence; it must recognize that the right to enjoy health is quite as sacred as that to possess property; that to poison men in factories and mines, to pollute drinking water supplies, to adulterate foods, and to drug with nostrums, is manslaughter. Religion must teach the sanctity of the body as well as that of the soul, that ignorance is sin and

edge virtue, that parenthood is the holiest function performed by man, and that to transmit disease is an unpardonable sin. The teacher must know hygiene as well as mathematics. The capitalist must recognize that improvement in health and growth in intelligence increase the efficiency of labor. There never has been a time when scientific medicine has had so many and such efficient and appreciative helpers as it has today. Our sanitary laws are for the most part good, but their administration is weak, on account of ignorance. The pulpits of the land are open, for the most part, to the sanitarian. The respectable newspapers are most effective in the crusade against quackery and disease. The philanthropist has learned that the advancement of science confers the greatest and most lasting benefits on man.

There is a moral obligation to be intelligent. Ignorance is a vice and when it results in injury to any one, it becomes a crime, a moral, if not a statutory one. To infect another with disease, either directly or indirectly, as a result of ignorance, is an immoral act. The purpose of government is to protect its citizens, and a government which fails to shelter its citizens against infection is neither intelligent nor moral. To transmit disease of body or mind to offspring is an unpardonable sin. In a reasonable sense it is worse than murder, because it projects suffering into the future indefinitely.

That medicine has become a fundamental social service must be evident. To return one incapacitated by illness or injury to the condition of self support, benefits not only the individual, but the community, inasmuch as it increases its productive capacity. Infirmity is a direct burden on the individual and scarcely less direct on the community. Weakness in any part diminishes the strength of the whole. It is a fully established principle in social economy that widespread intelligence and growth in knowledge are beneficial to the State. It was in full recognition of this that the framers of the Ordinance of 1787 wrote into that immortal document: "Religion, morality, and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged." The Territory of the Northwest, the government of which was created in this ordinance, was at that time a vast waste of forest and prairie, furnishing a scant and precarious subsistence for savage tribes and attracting to its borders a few of the most hardy sons of civilization. The knowledge, for whose growth and diffusion the wise provision was made, has drained the malarial marshes, converted wild prairie and tangled wood into fruitful orchards and fertile fields, dotted the whole area with neat villages, reared great cities, linked all parts with steam and electric roads, and provided comfortable homes and abundant food for millions. The men who wrote the Ordinance of 1787 left a great inheritance which is temporarily in our possession. Let us write into this great document: "Every ill which can be relieved shall be removed, and every preventable disease shall be prevented." The wisdom of our fathers has secured for us a greater measure of health and a longer term of life; let us do as well for those who are to possess this fair land in the next generation. Let us live not only for ourselves and the present, but for the greater and more intelligent life of the future.

> Not myself, but the truth that in life I have spoken
> Not myself, but the seed that in life I have sown
> Shall pass into ages—all about me forgotten,
> Save the truth I have spoken, the things I have done.

All things are relative and health is no exception. With a greater degree of health among all, religion will become more effective for good, morality will have a deeper signification and a wider application, and knowledge will multiply and distribute its blessings more widely.

In the further improvement of the physical, mental, and moral conditions of the race, medicine should continue to be a leader. There is no other calling so essential to this movement, and in order more thoroughly to fit itself for this important task, the profession should first of all look to its own betterment. The medical man should possess intelligence of high order, manifest industry without stint, and show the highest integrity in all he does. That it is the aim of this association to attract to its colors men possessing these qualifications and to deny admission to others is shown by the advance in the standard of medical education, the enforcement of medical registration laws, and the denunciation of every form of medical charlatanism. In all these directions the profession has the support of the more intelligent men in other callings. The improvement in medical training secured within recent years in this country is without a parallel in the history of education. The requirements for admission to the medical schools have been rapidly advanced and standardized; the number of medical schools has been reduced from 166 to 104 by obliteration and combination, much to the improvement of all, and a far better class of matriculates has been secured. The courses of instruction have been lengthened and made more scientific. Each good medical school is doing more or less of research which is not confined to laboratory investigators, but is fast finding its way into hospitals. Indeed, some of our clinical men are now making most valuable contributions. Every medical man should have much of the spirit of research. It is the pabulum on which medicine feeds and without it the profession atrophies and starves. It is the glory and strength of the profession that it is not bound by dogma and pays no heed to the *ipse dixit*. I have no sympathy with the idea that medical research should be largely relegated to special non-teaching institutions. These have their function and we rejoice in their foundation and support and hope that they may multiply, but the man who is devoid of the spirit of scientific investigation has no place in medicine as student, practitioner, or teacher, and the most elaborate medical training without opportunity for scientific observation is barren. Besides, opportunities for medical discovery should be widely distributed. Science makes no provision for an aristocracy. There can be no papal bulls issued in the domain of medicine. The workers must be many, all must be free to pursue knowledge in their own way, and all must be com-

pelled to prove their assertions, for "life is short, art is long, opportunity is fleeting, experiment fallacious, and judgment difficult."

In this work of self improvement the profession has had the aid of the more intelligent law makers and administrators. In carrying out these progressive changes there has been much sacrifice of money and personal pride by many members of the profession. Large schools have willingly submitted to marked reduction in the numbers of their students and consequently in financial support. A medical education costs more in time and money than that demanded by any other profession, and the emoluments of the average practitioner have decreased as preventive medicine has become more effective. No other profession pays so heavily the great cost of eradicating the infectious diseases, but this is the function of medicine and no sacrifice should be regarded as too great. While intelligent medical men have been leading the crusade against greed, ignorance, and disease, our legislative halls have been crowded with the representatives of sects, cults, and charlatans demanding legal recognition. If I mistake not, herculean efforts will be made in the near future to lower the standards demanded of the medical practitioner. These endeavors have been promised aid from those who have heavy financial backing, but if we are worthy of the trust which we bear, we will not yield. We must appeal to the good sense of the people for whose welfare we labor. We must show what scientific medicine has done for the public good and point out the greater things it may do with increased opportunity. It must be admitted that in the crusade for the restriction of tuberculosis many physicians have manifested but little interest. This is shown by their slowness to employ methods of early diagnosis and consequently by their failure to recognize the disease in its curable stage, also by their unwillingness to comply with the laws of notification. It is an undeniable fact that there are many medical men who know less about hygienic measures than the more intelligent of the laity. With advancing knowledge among the masses these professional fossils will be correctly labeled and properly shelved in the local museums of antiquities.

I believe that medicine is now attracting excellent young men. It should appeal to this class. It does not point the way to great financial reward, but it offers a service unsurpassed by any other calling. The historian tells us: "For the Roman patriot the only worthy stage was the forum or the battlefield; every other pursuit was left in the hands of slaves and could not free itself from the taint of servitude." Modern medicine offers a field in which the advancement of knowledge, the improvement of health conditions, and the saving of lives are the measures of success.

Preventive medicine, still in its youth, has accomplished great things. As I have stated, within the past thirty years in this country the mortality from tuberculosis has been reduced more than half, and with scarlet fever and diphtheria, the results have been more striking. Within the past ten years, the average life has been increased four years. Great epidemics which once devastated continents are no longer known in the more intelligent parts of the world. In fact, it may be said that the death rate is now an excellent measure of intelligence. In 1911 the death rate in London was fifteen per mille, while that of Moscow was 27.3. Preventive medicine is the keystone of the triumphal arch of modern civilization, and its displacement would precipitate mankind into relative barbarism. Should the health administrators of any great commercial centre fail, for even a few months, to exercise the function of restricting disease, the history of the epidemics of the middle ages might be repeated. Great things have been done, but greater tasks lie before us, and their accomplishment depends on the scientific wisdom of our profession and the intelligence of the people. Without the harmonious adjustment of these forces, the greatest efficiency cannot be secured. While the mortality from tuberculosis has been reduced half in the past thirty years, we must not assume that the total eradication of this disease will be accomplished in the same number of years. Only the more progressive members of the profession have taken the initiative, and only the more intelligent members of the community have responded. Intelligence and the sense of moral responsibility must grow as the work proceeds. It remains for all who have the welfare of the race at heart to plan wisely and carry forward courageously the campaign against greed, ignorance, and disease.

The sanitarians of this country seem to be in harmony in regard to the general procedures to be followed. These are embodied in bills recently introduced in the legislative assemblies of a number of States. In New York an excellent bill was passed and its operation is now being inaugurated under the directorship of Doctor Biggs, whose long and effective service in the city of New York demonstrates the wisdom of his selection. I regard it as highly fortunate that the operation of this new and important law is to be directed by one so well qualified.

My own ideas are embodied in the Amberson bill of the Michigan legislature of 1913. Among the provisions of this bill the following may be mentioned: The State is to be divided into health districts. In each such district a health commissioner is to be appointed for a term of four years. The fitness of the commissioner is to be determined by the State board of health after examination. The salary of the commissioner varies with the population of the district, but in most instances would run from three to six thousand dollars. There is to be an additional appropriation for laboratory expenses and for carrying out the purposes of the act.

[illegible] shall [illegible] the [illegible] commissioner [illegible] [illegible] [illegible]

which appointed, or by resolution of the board of supervisors of each county. They are hereby authorized and invested with the power to enter on and inspect private property at proper times in regard to the possible presence, sources, or cause of disease, to establish quarantine and in connection therewith to order whatever is reasonable and necessary for the prevention and suppression of diseases; to close schools, churches, theatres, or any place of public assemblage, to forbid public gatherings in order to prevent or stay epidemics; to collect statistics concerning insanity, feeble mindedness, tuberculosis, and other infectious diseases; to inspect slaughter houses and markets of all kinds where food is sold. They shall inspect at least once each six months and make a sanitary survey of the publicly owned buildings and institutions within their respective jurisdiction and shall keep a report thereon as part of the records of their office. They may inspect any school buildings or grounds within their jurisdiction as to sanitary conditions and shall have power to close any school when the sanitary conditions are such as to endanger or imperil the health or life of the pupils attending the same. They shall include all such sanitary inspections in their monthly reports to the State board of health. They shall at all times be subject to the orders of the State board of health in the execution of the health laws of this State and may perform any duty where required by the State board of health, or any member of said board acting for the entire board, which might be performed by said board of health or an officer thereof.

Further duties of the health commissioners are defined in the bill, and I have given only enough to show the purpose and scope of its provisions.

The successful operation of such a law would require the highest class of sanitarians. They must possess intelligence, industry, and integrity. They must be devoted to their work, remembering that the Father of Medicine said: "Where love of mankind is, there also is love of art." With these qualifications I believe that such a law might be operated with great benefit to the people. Is the medical profession of this country prepared to do this work? I believe that many of the recent graduates of our best schools are fitted for this highly important function. They may need special training in the courses in public health now being inaugurated. If I mistake not, our profession will soon have wide opportunity to demonstrate its usefulness in this direction. If the public makes this demand, preventive medicine will have the opportunity to do a patriotic service which has never come to any profession at any time. With proper facilities and helpers, such commissioners might within a few years become acquainted with the conditions surrounding every permanent resident within their jurisdiction, and with properly qualified administrators of the law much might be done to abate disease, improve health, increase efficiency, eradicate the venereal diseases, stamp out vagrancy, pauperism, prostitution, alcoholism, and crime. Crime is a disease due to heredity or environment, one or both. We now permit it to breed and multiply in the midst of us. Its causes must be determined and eliminated and its habitations must be discovered, disinfected, or destroyed. We have heard too much about the rights of the individual; let us know more about his duties. Too much stress has been laid on the sacredness of private property and too little on the duty of all to contribute to the welfare of the whole. Preventive medicine has demonstrated in a practical way the force of the biblical statements that no man liveth to himself alone, and that every man is his brother's keeper. Preventive medicine is the most potent factor in the socialistic movement of the day with which every good man feels himself more or less in sympathy; besides it is at the same time the most powerful weapon against the anarchy with which some would threaten us.

If preventive medicine is to bestow on man its richest service, the time must come when every citizen will submit himself to a thorough medical examination once a year or oftener. The benefits which would result from such a service are so evident to medical men that detail is not desirable. When recognized in their early stages most of the diseases which now prevail are amenable to treatment. The early recognition of tuberculosis, cancer, diabetes, nephritis, heart disease, etc., with the elimination of the more acute infectious diseases would add something like fifteen years to the average life, beside saving much in invalidism and suffering. The ultimate goal of science is the domination of the forces of Nature and their utilization in promoting the welfare of mankind. Science must discover the facts and medicine must make the application for either cure or prevention.

The local health authorities for which the bills referred to make provision must be supervised by State boards of health or State commissioners. Many of our State boards of health are already doing much, but this is little compared with what they might do. They should be absolutely free from party dictation, should be made up of men both qualified and interested, and their executive officers should be distinguished for their knowledge of sanitation. Their appropriations should be greatly increased, for health is a purchasable commodity. Pure water, pure food, and even pure air cost money, but they lead to health, which is worth more than gold to both the individual and the State.

Our present National health service is doing most excellent work. It demonstrated its strength in eradicating the plague in California and suppressing yellow fever in New Orleans. It has charge of the administration of the laws affecting the admission of immigrants, so far as their health is concerned, and it performs this service well. The Public Health Service is now investigating the pollution of certain rivers, studying trachoma in the mountains of Kentucky, pellagra in South Carolina, and the spread of typhoid fever in certain districts. The Hygienic Laboratory at Washington has made valuable researches in addition to the routine work of the examinations of vaccines and serums. This bureau should be developed into a department with a member in the cabinet. The study of contagion is quite as important as anything within the range of the activities of the Departments of the Interior, Agriculture, and Commerce and Labor. Our health relations with other nations concern us quite as much as our trade relations. The one thing above all others against which our doors should be shut is disease, whether it be of plant, animal, or man, whether it be of body, mind, or morals. The highest function of the State is not to make millionaires out of a few importers or to find profitable investments for its surplus wealth in foreign lands, but to advance to the highest degree the health, intelligence, and morality of its citizens.

In each State there should be a hygienic laboratory equipped with able men supplied with facilities

for the study of sanitary conditions and for the prosecution of scientific research. The Hygienic Laboratory at Washington should be developed into a great institution for research which would improve the conditions of life. The greatest asset of any nation is the health of its citizens and the people who secure this in the highest degree will dominate the earth, for the dominion of the superman, when he comes, will extend from pole to pole, not by force of arms, but by example and education.

Younger members of the profession: One who is soon to be mustered out of service, on account of disability and old age, salutes you. An old soldier who has served in the ranks nearly forty years, steps from his decimated regiment, lifts his cap, and cheers you, as you pass by in your new dress and armed with weapons of greater efficiency than was known when he enlisted. The cause is the liberation of the race from the bonds of superstition and ignorance and it is a glorious one. The contest began before the genus *homo sapiens* came into existence. Countless generations have served their time, some well, some ill, and have passed into oblivion, but their partial victories have made you stronger and placed on you a greater responsibility. Your intelligence is greater, your judgment is sounder, and your effectiveness has been increased. Where the past has failed or only partially succeeded, your success will be greater. But the battlements of ignorance still bristle with heavy fire guns. Only a few of the outposts of the enemy have been captured. It is for you to do, and then like all your predecessors, to die. You stand today within the firing line. Go on courageously and when eons of the future have become the past, the superman, born out of the struggles of his predecessors, will demolish the last citadel of ignorance and vice, and firmly plant on the highest peak of the mountain of knowledge the flag of human progress. And when the silken banner shall unfold, there shall appear on it this legend:

Pro gloria omnium nationum et hominum honore.

Department of Medicine, University of Michigan.

Original Communications.

THE CEREBROSPINAL FLUID AND ITS RELATION TO BRAIN TUMORS.[1]

By Charles H. Frazier, M.D.,
Philadelphia.

The part played by the cerebrospinal fluid as a factor in the clinical and pathological syndrome of brain tumors, is by no means an inconsiderable one, and the larger and more varied one's experience with the conditions found on the operating table, the bigger does this factor loom up as among the most important of the problems to be dealt with.

Increased intracranial tension. Vomiting, headache, and papilloedema, the clinical expressions of intracranial tension, are usually attributed to the increase in the intracranial contents. To be sure, there are many conditions such as abscess, hemorrhage, meningitis, hydrocephalus, and others, which represent addition to the normal contents of the cranial cavity, and cause an increase in intracranial contents. But when a tumor is suspected, the tumor as such is usually regarded as the cause of the increased tension. While in some cases this may be true, I maintain it is the exception rather than the rule, and in the course of this communication, examples will be cited to illustrate this point. In the case of Mr. A. C. E., the symptoms pointed to a tumor of the left parietal region. There were in this case no symptoms of increased intracranial tension, there were no changes in the eyegrounds, no vomiting, and no headaches. At the operation, a glioma of considerable dimensions, in bulk as large as a peach, was removed; but there were none of the physiological signs of pressure, such as tension of the dura, absence of pulsation, or bulging of the brain when the dural flap was reflected. In other words, we were dealing with a tumor of considerable dimensions, but without any of the symptoms which could be attributed to a tumor and without any evidences of increased pressure. The absence of intracranial tension in such a case may be attributed to the fact that the tumor, a glioma, was infiltrating in character and had destroyed in its growth the brain tissue so that the sum total of intracranial contents had not been increased. This criticism at once suggests itself and might be regarded as a valid explanation of the phenomenon under consideration, but it may be as readily refuted by citing cases of endothelioma in which the tumor as it grew, displaced rather than destroyed the adjacent brain tissue. Such, for example, was true in Case II, in which, upon uncovering the parietal and part of the frontal lobe, an endothelioma as large as a hen's egg was revealed. The margins of the tumor were sharply defined and the tumor was removed intact. Despite the size of the tumor, there had been no evidence of headache, vomiting, or papilloedema, and at the time of the operation no evidence of hypertension, as the brain did not bulge at all after the dural flap had been reflected. These two cases are not exceptions by any means; they were selected as representing the two commonest varieties of brain tumor—the infiltrating glioma and the more or less sharply defined, sometimes encapsulated endothelioma, and they bear out the fact that a tumor, though of considerable dimensions without secondary internal hydrocephalus, may exist without signs of increased intracranial pressure. Or, to put it more directly, increased tension is the result of secondary hydrocephalus rather than of the mere presence of a tumor.

The impression prevails, I think, that in tumors of the posterior fossa, change in the eyegrounds, such as papilloedema, is a comparatively early manifestation of the disease. This impression is, I believe, well founded, but here again the increased pressure, which in our belief is the most important factor in the etiology of papilloedema, is the result of the pressure caused by excessive accumulation of cerebrospinal fluid rather than the tumor. I happened only a few weeks ago to operate in a case in which the symptoms pointed unmistakably to a cerebellar lesion (Case III). The patient, Mrs. A., had suffered from constant occipital headache for

[1] Read before the Philadelphia Neurological Society, April 24, 1914.



Fig. 1.—Tapping the lateral ventricles in a case of hydrocephalus secondary to brain tumor. The cerebrospinal pressure in this case was measured with a manometer in order to determine the effect of ligation of the common carotid arteries upon the degree of cerebrospinal pressure.

eight months, but no vertigo. There was the usual tendency to fall to one side (right in this case), and her gait was uncertain; the reflexes were exaggerated, but no ankle clonus nor Babinski was present. Reaction to light was somewhat sluggish, but otherwise the cranial nerves were not involved, and there were absolutely no changes in the eyegrounds. The posterior fossa was explored and an endothelioma found of unusual dimensions. It occupied practically the entire fossa of the right cerebellar hemisphere, of which there were no traces save a thin layer one half cm. thick, spread out over the posterior surface of the tumor. The tumor, though of unusual dimensions, presumably had not interfered with the drainage of the lateral ventricles, otherwise there would have been ventricular distention and the usual phenomena of increased pressure, including papilloedema.

Enough has been said to make it clear that tumors of any dimensions, irrespective of their size, character, or seat, may exist without signs of increased intracranial tension. Per contra, the encroachment upon the intracranial space, sufficient to give rise to the clinical picture of increased tension in cases of brain tumors (or to such physical evidences of increased pressure as may be demonstrable upon the operating table), is almost invariably the result of excessive accumulation of cerebrospinal fluid. In many instances this will be found in the lateral ventricles, in many in the large basal cisternæ, and less frequently in the subarachnoid space over the cortex. Take, for example:

Case IV. Young man, A. F. (File No. 23,740), aged twenty-five years, was referred to my service in the University Hospital by Dr. W. P. Long, of Weatherly, Pa., May 21, 1913. The symptoms suggested a tumor of the left motor cortex. At the operation a large osteoplastic flap was reflected, uncovering the suspected area. The tension of the dura was extreme and the dural veins were tremendously distended, quite as large in diameter as a lead pencil. Realizing that it would have been unwise to open the dura, unless there were some means of relieving tension, lumbar puncture was resorted to, and fluid spurted from the needle as though under extreme tension. Fifty c. c. of cerebrospinal fluid were withdrawn, and the tension at the site of the exposed area entirely disappeared. Further exploration was abandoned at the time, and as a temporary expedient the brain was decompressed in the temporal region on the opposite side. One week later, the osteoplastic flap was reflected, together with the dura and a large, infiltrating growth, covering an area almost six cm. square, presented itself. The tumor was of a soft, infiltrating character, and did not of itself increase the intracranial contents. Before the dural flap could be closed, fifty c. c. of cerebrospinal fluid had to be withdrawn by lumbar puncture.

It does not seem to make any difference where the tumor may be situated, whether in the cortex, deeper in the substance of the hemisphere, or at the base, the increase in the amount of cerebrospinal fluid is the factor responsible for all but the focal symptoms. In subtentorial lesions, this phenomenon is even more constant. Seldom does one expose the contents of the posterior fossa in the presence of brain tumors without finding the pressure beneath the dura extreme, so extreme usually, that, once the dura is reflected, the hemisphere is projected through the opening as a grape is expressed from its skin. While a tumor of small dimensions will, in the posterior fossa, more often give rise to pressure symptoms than a tumor of corresponding dimensions in the pretentorial region, this is readily explained by the fact that in the posterior fossa there is less provision for accommodation and displacement. But even in the posterior fossa, one frequently sees the pressure subside, once the excessive amount of fluid is allowed to escape from the cisterna magna. So common is this phenomenon that abundant illustrations might be gathered from the records of any series of operations for subtentorial tumors. Let me cite but a single case:

Case V. The patient presented the typical cerebellar syndrome together with headache, vomiting, and a papilloedema of five diopters. At the operation, upon reflecting the dura, the left cerebellar hemisphere was seen to be under great tension and so crowded through the opening as to make further exploration almost impossible. When, however, a retractor was gently introduced between the hemisphere and the tentorium cerebelli, a relatively large quantity of cerebrospinal fluid escaped, and evidences of extreme tension at once subsided, making it possible at once to displace the hemisphere sufficiently to expose its various surfaces and finally to uncover the tumor.

Hydrocephalic types. I have used the term, hydrocephalus, in a general way merely to indicate the accumulation of cerebrospinal fluid in abnormal quantities. The fluid may be confined chiefly to the lateral ventricles, a true internal hydrocephalus, in which cases the natural outlet of the lateral ventricles is obstructed and tension cannot be relieved by a lumbar puncture, as in Case IX. In exploring the left frontal lobe for



Fig. 2.—An enormously distended lateral ventricle in an inoperable brain tumor forcing up the osteoplastic flap.

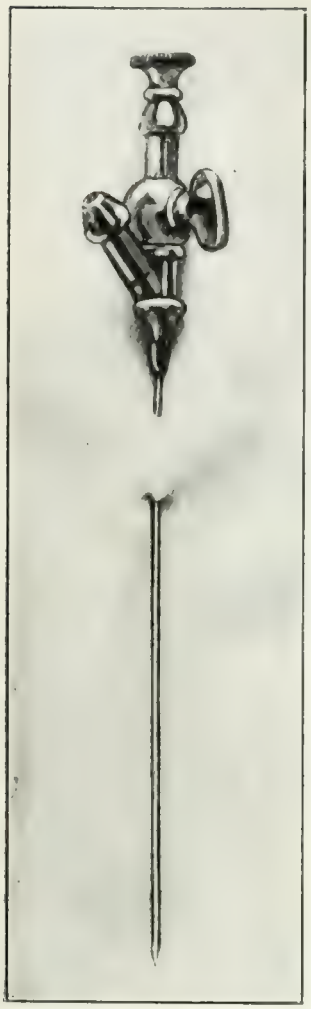


FIG. 3. Author's special cannula for lumbar puncture. The outlet at the side is for connection with the manometer.

tumor, the brain was found to be under great tension; a needle was introduced into the dural sac between the third and fourth lumbar vertebræ, and the fluid escaped only at a normal rate, and the tension was not relieved. I then introduced my exploring cannula in the direction of the anterior horn of the left lateral ventricle, the cerebrospinal fluid spurted from the cannula, the cortex collapsed, and the tension disappeared. This was an example of a typical internal hydrocephalus; but this is by no means the common type. In the majority of cases, there is no obstruction to the outlet of the lateral ventricles and the excess of fluid is readily evacuated by lumbar puncture. Thus in two cases of hydrocephalus consecutive to pituitary lesions, one of intrasellar (Case XI), the other of extrasellar, origin (Case XII), there was marked dilatation of the ventricles. Upon the withdrawal of fifteen c. c. of cerebrospinal fluid in one case, and thirty-two in the other, the tension immediately subsided. It is interesting to observe that, although the tumor in the latter instance was as large as a peach, probably an endothelioma at the base of the skull, there was no evidence of tension once the ventricles were emptied.

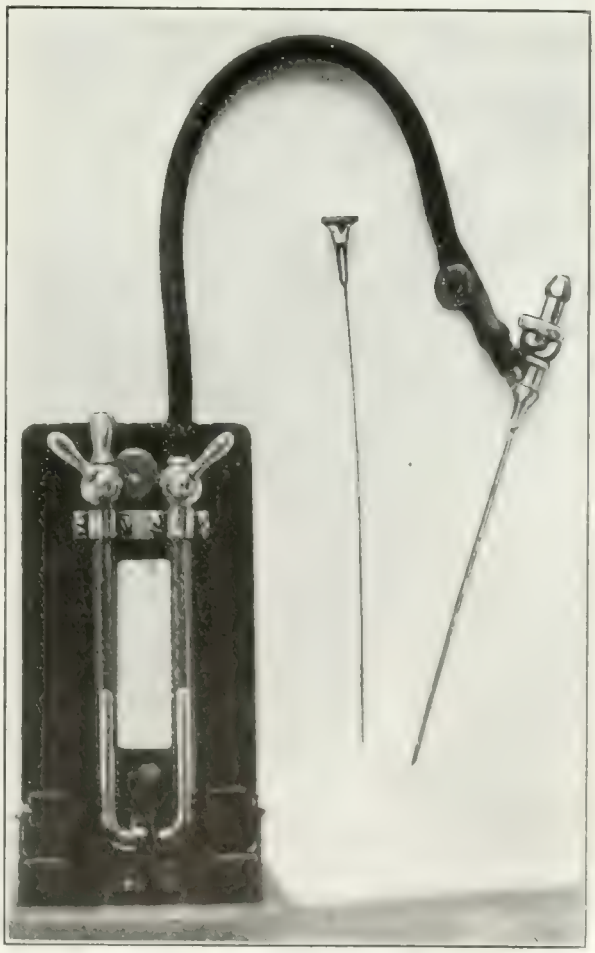
One finds only exceptionally the cerebrospinal fluid in the subarachnoid space on the cortex in sufficient quantities to influence materially the degree of tension. I find a record of one case (Case XIII), in which the diagnosis of brain tumor was suspected, but not confirmed, when upon opening the dura in a subtemporal decompression, the brain herniated through the opening, indicating increased pressure. A considerable amount of fluid in the course of a few minutes drained from the subarachnoid and subdural spaces, and the hernia subsided.

Not infrequently, however, the larger collection is to be found in the posterior fossa, and this is true especially of tumors in this region. One example of many is found in the case of a tumor near the right cerebellopontile angle (Case XIV). At the operation the right hemisphere was exposed, and upon puncturing the dura, the fluid spurted out some distance from the wound. Upon enlarging the dural opening, two fluid ounces or sixty c.c. of cerebrospinal fluid escaped, and the cause of the pressure disturbances was removed. The tumor was a small fibrosarcoma, not larger than an English walnut.

These cases illustrate the various types of hydrocephalus and may be offered as further evidence of the hypothesis already advanced, that the disturbances arising from an increased intracranial pressure have nothing to do with the size, situation, or character of the tumor, but rather are to be attributed to some perversion in the normal balance between the secretion and absorption of cerebrospinal fluid.

Some information as to the etiology of papilloedema may be derived from our observations of cases of brain tumors and of coexisting hydrocephalus. By a number of observers, papilloedema is attributed to the effect of increased intracranial pressure upon the sheaths of the optic nerve, that is to say, the increased pressure causes a disturbance of the vascular and lymph circulation. This mechanical theory has been strongly supported in the recent work of von Hippel (1). On the other hand, there are those, including Deutschmann (2) and Elschnig (3), who maintain that in addition to the mechanical effect of intracranial tension, certain toxins play a part.

Omitting further elaboration of these two theories, let us turn to the records of cases in which



papilloedema has and has not been found, and compare the findings of the operating table. The result of such an investigation, speaking now only of cases in my clinic, is largely in support of the mechanical theory. By that, I mean to say that when intracranial pressure was increased to any considerable degree, one finds a papilloedema, and vice versa, when in the presence of a tumor large or small, tension was not increased, there were no changes in the eyegrounds. (See Cases I, II, and III.) Attention has already been given to the fact that the increased tension of brain tumors is the result commonly of an associated increase in the amount of cerebrospinal fluid. We may now inquire whether there exists in the cerebrospinal fluid in cases of brain tumors any substance of a toxic nature, but this has never been demonstrated. We do know that the composition of the fluid may be, and is, altered in certain cases. For example Henkel (4), in eleven cases, and Apelt and Nonne, in

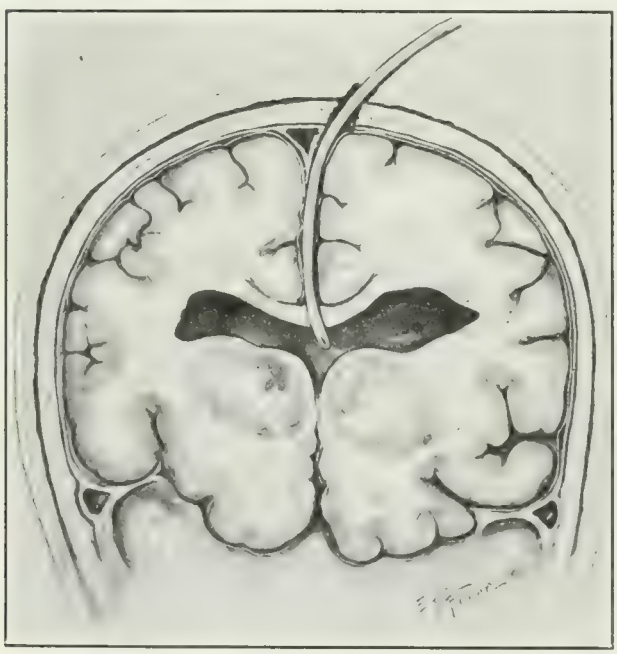


FIG. 5.—Horizontal section of brain with dilated ventricles secondary to brain tumor. The illustration depicts the introduction of the author's cannula through the corpus callosum into the lateral ventricle. (Anton's *Balkenstich*.)

sixty-five per cent., found an increase in the cell content in cases of tumor, but there is no evidence at hand to indicate any specific toxic action of a fluid so altered upon the optic nerves. As between the toxic and mechanical theory, our experience and observations are sufficient to substantiate the mechanical theory, whatever may be the contentions of those who take the other view.

The origin and the absorption of the cerebrospinal fluid have always offered a fascinating field for speculation, and this problem becomes one of great practical import in the consideration of the causes of hydrocephalus of whatever origin. There is little doubt that, for the most part, cerebrospinal fluid is a secretory product of the choroid plexus, although a small amount may be formed elsewhere, as in the spinal cord. There is little doubt too that, in a large measure, cerebrospinal fluid is absorbed by the venous channels throughout the subarachnoid space. In brain tumors, we are confronted with two phenomena that have to do with the physiology of the cerebrospinal fluid; first, that there is some disturbance with absorption, and secondly, that there is an apparent increase in the rate of secretion. Inasmuch as the fluid is absorbed chiefly by means of venous circulation rather than by the lymphatics, retardation of absorption might be explained by pressure upon the venous trunks. If this was true, tumors of the base, because of their relation to the large basal venous sinuses, should be, as they are, more frequently attended with a secondary hydrocephalus than tumors of the cortex. While there may be exceptions, I believe this explanation is substantiated by our clinical records. Certain it is that tumors of the base in the posterior fossa are, in the majority of instances, accompanied by an increase in the quantity of cerebrospinal fluid, and their relation to the veins of Galen may in part account for the interference with absorption of the fluid in the ventricles themselves.

The extraordinary rapidity with which the cerebrospinal fluid reaccumulates after evacuation suggests a pathogenic factor in its secretion. The relation of arterial pressure to the function of the choroid plexus has never been determined with any precision. Suffice it to say at this juncture that, inasmuch as the blood pressure is not disturbed in brain tumors to any appreciable degree in any case, and not at all in most cases, to my mind this clearly eliminates the arterial pressure as a factor. I have in a number of cases had an opportunity of observing the reaccumulation of fluid in distended ventricles and elsewhere, and will briefly present one instance in elucidation of this phenomenon:

CASE VI. An exploratory operation was performed June 14, 1911, but the tumor, the existence of which seemed to admit of no dispute, was not found. The patient returned to the hospital, May 28, 1913, almost two years later, and although a subtemporal decompression had been performed previously to relieve tension, the osteoplastic flap had been elevated six to eight cm. above the level of the surrounding scalp, apparently by a distended ventricle. On a number of occasions the ventricle was tapped for the relief of pressure, and within twenty minutes, the tension was as extreme as before. In one instance five fluid ounces, or 150 c. c. of fluid, were withdrawn, and in the specified time, this amount had been replaced.

The total amount of cerebrospinal fluid in normal conditions varies from sixty to 150 c. c. (5), half of which is in the dural sac of the spinal cord, and but twenty to thirty c. c. in the ventricles. So that as much fluid as is normally found in the whole subarachnoid space in conditions of health will be secreted under pathological conditions inside of twenty minutes. Thus it will be seen that while the absorption of fluid is interfered with in brain tumors, it is also true that the secretory flow is measurably increased. To what is this hyperactivity of the choroid plexus due?

If, as we believe, the choroid plexus is analogous to other glands with secretory functions, the vascularity of the gland should influence, to some extent at least, its cellular activity. It is true of the thyroid gland that ligation of one or all of its four vessels has a material influence over the perverted function of the gland in cases of hyperthyroidism. In somewhat similar influences, will the choroid plexus be affected? I had been led to believe, by an observation of my own in a case of congenital

hydrocephalus, and by the work of Stiles, that the secretion of the choroid plexus might be arrested, in part, by interruption of the carotid circulation. This I have applied in an attempt to relieve the symptoms of pressure in two cases of brain tumors with accompanying hydrocephalus. Following an exploratory operation and a subtemporal decompression (Case VI), the tumor was not found, but the ventricles became distended and the flap was elevated some distance above the surrounding scalp, so that ready access was obtained to the ventricle. The ventricle was tapped and the cerebrospinal pressure measured before and after a definite quantity of fluid was withdrawn. The time required for the ventricle to refill was noted. These observations were made before, and repeated after, ligation of both common carotid arteries. The results are graphically portrayed in the accompanying chart. (Chart I.) Generally speaking they were negative, that is to say, there was no appreciable change in the time required for the ventricles to refill after the brain was deprived of some of its blood supply, or at least it was so insignificant that it could not be detected. The outcome was disappointing and surprising. With its dual blood supply, the carotid and the vertebral, for the latter to be sure had been undisturbed, the vertebral arteries might supply adequate nutrition for normal unaccelerated cellular activity, but the *a priori* deduction would have led one to believe that the cells of the choroid plexus, abnormally hyperactive as they appear to be in brain tumors, would have been somewhat restrained, if only temporarily, after their blood supply from the carotid source had been stopped.

Attempts have been made by animal experimentation to determine factors other than the circulatory disturbances which may influence the formation of cerebrospinal fluid. The solution of this problem is pregnant with possibilities, and assumes enormous proportions in the search for remedial measures in inoperable tumors of the brain, more particularly as in many instances the most distressing symptoms are not the result of such focal disturbances as may be caused by the tumor's action upon the tissue directly involved, but the result of intracranial tension from the excessive accumulation of cerebrospinal fluid. That there are conditions under which the flow of cerebrospinal fluid may be increased or decreased has been suggested to me by the periodic fluctuation which one sees occasionally. In the case of J. M. S., aged forty years (Case VII), the symptoms pointed to a tumor of the temporooccipital region: the tumor proved to be inaccessible, but as in other cases, the tension caused by the associated hydrocephalus had established a hernia at the site of the exploration. It was observed that at times the tension of the herniated brain was extreme and at other times the tension almost entirely subsided. Evidently, there were here, as in other cases, conditions still undetermined which affected the flow of cerebrospinal fluid. Experimentally, I have demonstrated that the secretory output of the plexus may be influenced very materially in a number of ways, but as yet I have had no opportunity to apply these methods in clinical cases over a sufficient length of time to prove their effectiveness in the human being.

The response of the vasomotor centre to the obstruction offered the circulation in such conditions as intracranial trauma, abscess, and meningitis, where the intracranial tension is increased, is well known. The compensatory rise in blood pressure, the vagus pulse, the rhythmic breathing, the loss of consciousness, are matters of common knowledge. The extreme degree of intracranial tension that follows the accumulation of cerebrospinal fluid in the ventricles and elsewhere in cases of brain tumors, would lead us to presuppose a corresponding rise in blood pressure. It is difficult, if not impossible, to measure in the human subject, by such exact methods as one would use in the experimental laboratory, the degree of tension, but the existence of extreme tension is readily demonstrable on the operating table, as well as in other ways, and yet from my numerous records, I have been unable to find anywhere that the blood pressure was much higher than it might have been under normal conditions. The following case will serve to illustrate what is indicated by the term extreme intracranial tension:

Case VIII. A woman, aged forty-five years, when admitted to the University Hospital, was in a stuporous condition. The situation was regarded as grave, but after consultation, a decompressive operation was agreed upon as a means of tiding over a critical situation. The brain, first decompressed in the temporal region, herniated with tremendous force through the opening in the skull and dura. Fearing the impact of the brain tissue against the margins of dura and skull would lacerate the cortex, I at once proceeded to decompress on the opposite side, only to find the degree of pressure there was as extreme as it was on the other side. There is nowhere in my records a case where the tension was as extreme, yet the systolic blood pressure in this patient did not register at any time over 130 mm. Hg. In other words, under conditions of tension which seemed almost inevitably fatal, the degree of tension was undisturbed. In Chart II, of ten cases taken at random, the systolic pressure varied only from 120 to 140, and this variation bore absolutely no relation to the pressure of the cerebrospinal fluid.

That obstacles to correct diagnosis and localization of tumors are caused by an associated hydrocephalus is well known to neurologists. Dr. Charles K. Mills will recall a case (Case XV) in which he was led to believe the patient had a tumor of the frontal lobe. The impaired mentality, the failure of memory, and at times the somewhat stuporous condition of the patient, made it difficult to secure accurate or reliable statements, but a provisional diagnosis of frontal tumor was made. This region was explored, and apart from a dilated ventricle, nothing was found. In the course of time, the stupor gradually increased, the patient died, and at the autopsy a small neurofibroma of the auditory nerve was found.

While the masking of symptoms is a matter of not uncommon experience, the mimicry of tumor by hydrocephalic conditions is unusual. By the term mimicry, I mean the presentation of a clinical picture with symptoms of both focal and general character where at the operation a liberal and ample exposure failed to detect anything but a large collection of fluid in the posterior fossa. A rather striking illustration of this was presented in the following case:

Case XVI. Young man with a head of hydrocephalic proportions, who was operated upon March 24, 1910. He had been seen by Dr. G. E. de Schweinitz and Dr. W. G. Spiller, and was thought to have a tumor of the pons. In addition to a marked papilloedema and headache, he had evidences of involvement of the left fifth, seventh, and

eighth cranial nerves. The posterior fossa on the left side was exposed by a suboccipital craniectomy. Several ounces of fluid escaped when the dural sac was opened. As the head was enlarged, the posterior fossa was correspondingly bigger, and as the cerebellar hemisphere occupied only one third of this space, ample opportunity was offered for a thorough inspection of the affected region. The cerebellar hemisphere was unquestionably atrophied from pressure and its various aspects, as well as the pontile angle, were inspected with the greatest facility. But there was no vestige of a tumor. The improvement which followed the decompressive procedure was extraordinary, and when the patient was last heard from several years later there had been no recurrence. Of this case Doctor de Schweinitz wrote in reference to the effect upon the papilloedema: "that it was the most essentially good result he had ever seen."

Intracranial tumors in many instances grow at an amazingly slow pace. This is true particularly of endotheliomas, but may be true also of gliomas. Only the other day, I operated for the second time on a patient (Case I) from whom I had removed a glioma six years ago. The recurrent growth existed at least five years before it gave rise to any symptoms. It is interesting to note that in this case, at the original operation, the walls of the pressure, this patient of cheerful, happy disposition, could have led a life of usefulness and satisfaction to herself and family for many years to come.

It becomes evident, therefore, that if the continued and increasing pressure of the associated hydrocephalus was effectively controlled, the prognosis of brain tumors would be less grave and the expectation of life prolonged. We have attempted in the past to meet this situation by decompression. This has been effective, however, only to a limited degree, both as to degree and the duration of relief, and decompression will be more or less effective and more or less lasting in its effect if there is with the tumor an associated hydrocephalus of mild or severe grade. If the latter is the case, decompression will be less effective and less enduring. Palliation in brain tumors becomes a problem of dealing with the excessive accumulation of cerebrospinal fluid. At present, we have no means of controlling secretion or hypersecretion of the choroid plexus. Devascularization I have proved to be of no avail; atropine and adrenaline have only a transi-

CHART I, SHOWING THE PRACTICALLY NEGATIVE INFLUENCE OF DEVASCULARIZATION (CLOSURE OF BOTH COMMON CAROTID ARTERIES) ON THE ACTION OF THE CHOROID PLEXUS.

	9 days before ligation of the external carotid.	14 days before ligation of the external carotid.	14 days after ligation of the external carotid.	5 days after ligation of left common carotid.
Cerebrospinal pressure...		6 mm.	6 mm. before tapping, 4 mm. after withdrawal of 100 c. c.	12 mm. before tapping, 3 mm. after withdrawal of 122 c. c.
Systolic blood pressure..			168	142 to 143
Amount of fluid withdrawn from left lateral ventricle	150 c. c.	55 c. c.	100 c. c.	122 c. c.
Time required for ventricle to refill	4 hours	2 hours	2 hours	2 hours

CHART II, BLOOD PRESSURE IN BRAIN TUMORS; ILLUSTRATIVE CASES.

No.	File No.	Character	Seat.	Size.	Degree of tension.	Systolic blood pressure.
1	3090	Glioma	Left motor area	7 × 6 × 3.5 cm.	Dura tense	112
2	512	Neurofibroma	Acoustic nerve		Extreme tension; test tube of fluid withdrawn	95 to 100
3	25319	?	Extrasellar tumor of the pituitary body	Large	Very great tension	120 to 90
4	25686	Sarcoma	Pituitary body	Filled sella turcica	Brain under great tension	110 to 70
5	9406	Cyst	Left cerebellum	7 × 2 cm. × 2 mm.	Unusual degree of tension	110
6	3116	?	Frontal region	?	Marked intracranial tension	120 to 90
7	6482	Cyst	Cerebellum	?	Great tension, hydrocephalus	150 to 120
8	23353	?	Posterior fossa	?	Tension in left hemisphere extreme	150 to 90
9	1782	?	Cerebellopontile angle	Size of horse chestnut	Cerebellum under great tension	145 to 120
10	4391	?	Right temporal region	?	Great tension	140 to 120

cavity, remaining after the removal of the growth, were swabbed with ten per cent. solution of formaldehyde solution. Did the formaldehyde exert any inhibitory influence over the activity of the recurrent growth?

In 1906, I operated upon a woman with a large tumor of the posterior fossa (Case XVIII). The tumor was so fixed in the pontile angle that its removal would have been attended with great risk. This patient has remained well enough to mind her household duties, she has none of the subjective disturbances of tumors and her eyesight is preserved. Within the past year, a young woman was referred to me by Dr. M. C. Leed, of Seattle, Washington (Case XI). The röntgenogram showed unusual widening of the sella turcica. While there was almost complete optic atrophy, the patient exhibited no symptoms peculiar to dyspituitarism. At the operation, I found an extrasellar growth, encapsulated, as large as a peach, probably of dural origin, in the middle fossa. This tumor must have been present a number of years, although the onset of symptoms dated back only six months. Had her eyesight been preserved by an early sellar decompressory influence. Is there any way of promoting absorption or caring for the excess of fluid?

The lymphatics play so unimportant a part in the absorption of cerebrospinal fluid, that we must rely wholly upon the venous system. This may be accomplished by establishing a direct communication with a venous channel of suitable dimensions, a procedure which I employed in 1911 and which was recently recommended by Payr (6) in the treatment of idiopathic hydrocephalus, or by establishing an outlet from the ventricles to the cortex as in the procedure recommended by Anton. In May, 1911, Dr. Sherman Voorhees, of Elmira, New York, referred to me a patient with an inoperable tumor of the pontile angle (Case XIX). I found after decompression that the posterior fossa rapidly filled with cerebrospinal fluid. On several occasions the fluid was removed with an aspirating needle, with immediate relief of headache, but in the course of an hour the fluid reaccumulated with signs of recurring pressure. Through the medium of an artery, hardened in formaldehyde solution, I established a direct communication between the posterior fossa and the facial vein, to which the artery was

anastomosed by suture. While this system of drainage was not free enough to keep the posterior fossa empty, it took care of the excess of fluid so that the tension at the site of decompression was not as great as it had been before.

If the output of cerebrospinal fluid cannot be controlled, can its absorption be promoted? In the so called puncture of the corpus callosum, as proposed by Anton, we have, I believe, such a method. The rationale of the procedure has not as yet been worked out, but from certain observations which I have made on the lower animals, I believe the improvement after puncture of the ventricle through the corpus callosum is due to the fact that the cortex of one or both cerebral hemispheres is thrown open as a new absorptive area. There is reason to believe that when increase in intracranial tension is once established, the communication between the posterior fossa and anterior fossa is cut off, so that the fluid is confined to the posterior fossa, where its absorption is interfered with by pressure on the veins of Galen. Puncture of the ventricle through the corpus callosum at once provides a new outlet for the fluid pent up in the ventricles, and I am inclined to believe from theoretical, experimental, and practical considerations that it may supplant decompressive operations. At all events, it should be given a fair trial and the results compared with the earlier results of decompression.

The technic of the operation calls for little comment. Suffice it to say that I prefer to do it, other things being equal, under local anesthesia, and to replace the bone, which has been removed, so that the defect is repaired. If after a fair comparison of the results, both as to the degree of relief and as to the duration, I find that puncture of the corpus callosum proves itself even of no greater effectiveness, I should still give it precedence over decompression because it is a less formidable operation, can be done without a general anesthetic, and, what is more important, strikes at once at the root of the trouble in providing an outlet for the cerebrospinal fluid.

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1724 SPRUCE STREET.

A VISIT TO LOURDES.*

BY HENRY L. SHIVELY, M. D.,
New York

The ancient town of Lourdes, picturesquely situated in the foothills of the Pyrenees, is famous for the reputation of its modern miracles in healing the sick. There are many similar wonder working shrines in Europe, but Lourdes probably surpasses them all in the celebrity of its cures and number of its visitors, of whom it has from 300,000 to half a million every year.

The town owes its peculiar fame to the legend of Bernadette. In 1858, a little peasant girl, fourteen years old, was collecting driftwood from the mountain stream which rushes through the valley at the foot of the mediæval castle, which towers above the town. Before a deep cleft in the rocky mountain side, overgrown with ivy and underbrush, she declared to her two companions that she was blinded by a brilliant light, felt a roaring noise in her ears, and had "seen something." When urged by her parents and friends, she reluctantly described what she had seen as a shining female figure draped in white, with a blue girdle about the waist and a golden rose on each bare foot. The apparition smiled and told her to return, and another time requested Bernadette to have a chapel erected at a place where a spring would be found. The miraculous fountain appeared as predicted. In a state of ecstasy and kneeling before the grotto, Bernadette beheld the vision in all eighteen times, and although the later manifestations were in the presence of hundreds of interested spectators, no one ever saw the apparition except the little visionary, who like a modern Joan of Arc always told the same story in its simple details, with a candor and an air of truth which carried conviction to the minds of most of her pious neighbors. But the village authorities, the parish priest, and the bishop did not at first credit the tale. She was examined by a medical commission which pronounced her to be hysterical and suffering from a disordered imagination. By the common people, however, the miracles were received with great enthusiasm, crowds began to flock to Lourdes, all kinds of diseases were cured, the lame threw away their crutches and walked, the blind and deaf were restored, old intractable ulcers were healed by drinking and applying the water from the spring, and by offering up prayers at the grotto. After several months of debate and investigation, the church no longer withheld its sanction, the bishop of the neighboring city of Tarbes bought the land about the grotto and three great churches, one above the other, the Rosary, the Crypt, and the Basilica have been built on the hillside over the cavern. The fame of Lourdes has gone on growing from year to year, the authenticated miracles have increased in number, and it is now not unusual for twenty special trains to arrive in a single day bringing as many as eighteen or twenty thousand pilgrims from all parts of France, and from abroad.

I reached Lourdes on the eve of one of these great pilgrimages, on the day dedicated in the calendar to St. Anne, the mother of the Virgin Mary. The scene at the railway station was one never to be forgotten. Numerous trains from Normandy and Brittany, and from Luxembourg, Southern Germany, Spain, and Northern Italy poured their contingents of invalids, worshippers, priests, nuns, tourists, and sightseers into the little station. A remarkable feature is the well organized corps of volunteer helpers, bearers, and attendants who minister to the sick on their arrival, assisting in their removal on litters, mattresses, wheel chairs, and little handcarts. Many who eagerly accept this service are devoted men and women from the upper ranks of society, some of them titled personages, who deem it a privilege and a kind of penance for their sins to care for the poor and suffering among the pilgrims. They wash, clothe, and feed the infirm and helpless,

*Read at a meeting of the West End Medical Society, November, 1913.

dress their diseased limbs, and cheerfully perform all the duties of hospital orderlies and nurses. If the professional eye could occasionally detect the need of special training and some evidence of the lack of surgical and medical care, there was at least everywhere to be seen the greatest zeal, willingness, and kindness. At Lourdes, pathology, the art of diagnosis, and medical treatment are of little account. Most of the unfortunate patients have failed to be relieved by their physicians, and they place their only hope of cure in the unseen. It is as if a dozen homes for incurables had been emptied into this little mountain town. Among the familiar types readily recognized among the ailing crowds, were the hectic cheek and glistening eye of the advanced consumptive; the waterlogged limbs and swollen features of organic affections of the heart and kidneys; the cachexia of malignant disease; the staring eyes of exophthalmic goitre; the contractures and wasted limbs of long standing paralysis; the ankylosed joints of chronic arthritis; torticollis; the gait of locomotor ataxia; the untidy, pus saturated bandages of old leg ulcers; various eruptive skin diseases; the whiff of acetone in the air which reveals the presence of the diabetic; monstrous ovarian cysts; and among children congenital idiocy, the



The Esplanade and Castle.

deformities of poliomyelitis, and numerous examples of tuberculosis of the bones and joints. Among the hot, restless, perspiring crowds of poor people there is also to be observed the noisome, all pervading odor of poverty and unclean bodies, which is always the same whether at Lourdes or in a New York tenement.

A new town of hotels, boarding houses, and shops has sprung up across the river from old Lourdes to take care of the hordes of health seekers and visitors. There is much trafficking in religious articles, picture postcards, and souvenirs. In the windows are displayed images, crucifixes, medals, chaplets of beads, candles, scapulars, photographs of Bernadette, and little colored prints of the Virgin and saints, gaily decorated on embossed paper with gilt and lace work, not unlike the valentines which please American children on the 14th of February. There are displayed along with dubious *articles de Paris*, even pipes and matchboxes and walking sticks adorned with the image of our Lady of Lourdes. Conspicuous also are the painted cans in which the miraculous water is carried to the hotel *table d'hôte* or to the distant homes of the devout believers in its virtues. Every householder at Lourdes rents rooms, but it is often difficult, if one has not engaged in advance, to find lodgings in the town.



The sick on litters.

After getting settled in his hotel one is not long in finding the way to the Avenue de la Grotte, which leads up to the great esplanade, terraces, and hill of Calvary with the stations of the cross, where the processions are held, and on to the grotto itself surmounted by a marble statue of the Virgin, erected in the very niche where she first appeared to Bernadette. The esplanade and the broad inclined lateral ways and stone steps over the massive arches leading to the basilica are crowded day and night by the many thousand pilgrims with their painted and embroidered banners, nuns in the coif and garb of their various orders, priests in their cassocks with perhaps a bishop in his gorgeous vestments accompanying the host, carried on high in a golden monstrance beneath a silk canopy, and preceded by acolytes swinging burning censers. On the outskirts of the throng are the sick carried on stretchers by the bearers with their badges and insignia, flower girls, boys selling newspapers containing reports of the latest miracles, and the venders of wax tapers. A large candle which will burn for more than a month, may be bought for sixty francs, or a little one which will last for three hours for one or two sous. Everywhere is heard the monotonous, singsong refrain of the canticle of



The Grotto.

Bernadette with its haunting melody in a minor key, punctuated by the wailing cadences of the angelic salutation—*Ave, Ave, Ave, Maria!* Services are being constantly held in the three

churches, filled with worshippers and resplendent with the lights of the myriad candles and the glitter of numerous gold and silver wreaths, jewelled hearts, gilded inscriptions, and the other votive offerings of grateful suppliants who have been cured, or believe they have been cured.

The climax of the spectacular scenes enacted at Lourdes is to be found at the grotto itself, where there are hundreds of candles burning day and night before the little altar in its rustic setting. The entrance is stacked high with all manner of orthopedic appliances, crutches, plaster corsets, trusses, and splints which have been discarded as no longer needed by their former owners. Kneeling before the chapel in the open air, are hundreds of men and women, others on cots and mattresses saying their beads and intoning a litany after the earnest exhortations of a voluble and eloquent priest, who occupies a stone pulpit at the right of the grotto. "Dear virgin, heal our sick! Beloved virgin, thou canst do it if thou wilt! Mother of God, we implore you, heal our sick! Holy virgin, you are blessed and the fruit of your womb is blessed! Mary, thou art our only hope! Holy virgin, conceived without sin, heal our sick! Virgin, most powerful, mirror of justice, seat of wisdom, gate of Heaven leading into the Infinite, refuge of sinners, comforter of the afflicted, heal our sick! Pure virgin, make us purer among the pure! Powerful virgin, save our sick! Most chaste mother, thy children are at thy feet! Queen of the angels, say but a word and our sick shall be healed! Holy virgin of virgins, breathe upon our sores and our sores shall heal!" This in a shrill, querulous, imperative tone, sounding more like a command than a supplication, is followed by the everlasting, lulling, recitative melody of the canticle, ending with the thrice repeated *Ave Maria*.

Below, at a short distance from the grotto, are the piscinas or bathing basins, where the too scanty flow of precious water is collected, and where most of the miraculous cures take place as the patient is immersed in the cold spring water at a temperature not often above 50° F. The water is changed only twice a day, as the supply is insufficient and frequently from fifty to a hundred persons with all kinds of diseases are plunged naked in the same bath. To the fastidious this might seem objectionable and unsanitary, but the virtues of the waters which heal are also adequate to protect from infection.

It is stated at the medical verification office that about ten per cent. of cures are effected, which is a remarkable showing when the hopeless character of the diseases seen at Lourdes is considered. Malingerers are sometimes detected among those who allege that they are cured, and there are others who from motives of vanity and love of notoriety unconsciously deceive themselves and exaggerate benefits received, which later often prove to be only temporary. A conscientious effort is made by the authorities to exclude these cases from the authenticated miracles. The waters of the grotto were tried without effect for Bernadette herself, who was a chronic sufferer from asthma and painful hallucinations. She died in 1879, at the early age of thirty-five years, probably of tuberculosis, at the Convent of St. Gildard among the sisters of the order she had entered.

Whatever may be his point of view, the visitor can hardly fail to be impressed by the strong flavor of commercialism and the rather theatrical appeal of much of the pageantry at Lourdes. If one has any religious or artistic sensibilities, they are likely to be shocked at the sight of the painted, polychrome statue of the Virgin in the esplanade, with a halo of blue and yellow electric light bulbs about her head. For the thousands of simple, hardworking peasants, however, the pilgrimage provides a needed holiday and imparts a little of the brightness of romance and spiritual exaltation to the dull drab color of their monotonous lives of toil.

As to the scientific aspect of the cures, there are considerations which should perhaps soften the harshness of our judgment. Outside of their own special field, doctors are very much like other people in their beliefs, quite as credulous perhaps, and quite as fallible in their opinions, believing often what is easy and agreeable rather that what is demonstrably true or even probable. Do we not sometimes lend a too willing ear to the siren voice of the promoter? Did you never hear of physicians owning mining stock which never paid a dividend, or suburban building lots which failed to advance in value as promised? It is said that the medical profession was well represented on the list of customers of a notorious bucket shop which was closed by the police a few years ago. If we may judge from the alluring prospectuses of rubber plantations in Mexico, oil fields in California, and similar opportunities for rapidly acquiring wealth, which we receive almost daily in our mail, the doctor with a little hard earned money to invest is not infrequently regarded as an "easy mark." We should not then be arrogant or too superior in our condemnation of the public's love for patent medicines and cureralls, but should remember that there are forms of quackery and illusions, financial and economic, to which we are ourselves not always immune.

Even in our own field, are there not current today in the regular profession fantastic modes of treatment, insufficiently tested theories, and new drugs only a little less absurd perhaps than the vagaries of the Christian scientist and the osteopath, or the extravagant claims made for the miracle working shrine? Do we not overrate the alleged effects of the soda water baths of Nauheim in pathological conditions of the heart and bloodvessels? We have among our own brethren the disciple of the high frequency current, the prophet of the ultraviolet ray, and the firm believer in the dosimetric granule, first cousin of the homeopathic pellet. Then there are those who place their trust in the Bulgarian lactic acid bacillus, the only good microbe, whose friends would have us believe that he is the sanitary policeman of the intestinal canal zone. There is also much learned talk and exploitation of the effects on diseases of metabolism and cancer of the emanations of radioactive substances. As in the days of the father of medicine, art is long and judgment difficult. There is a note of sincerity and humility, virtues a little

old fashioned in our hustling modern life, in the question of the Roman governor who asked, What is truth? The evangelist did not record the answer, if there was one, and we are still groping in the dark.

303 Amsterdam Avenue.

THE LIVER IN ACQUIRED SYPHILIS.*

By Harlow Brooks, M. D.,
New York,
Visiting Physician, City Hospital and Montefiore Home.

Disease of the liver as a result of syphilis has long been recognized. Paracelsus noted its occurrence and symptoms in 1789. Portal, in 1819, again detailed its symptoms and clinicians generally have ever since realized its frequency, though they have perhaps underestimated its importance. Semmola and Geofreddi (*Twentieth Century Practice*, VIII) state that of the parenchymatous organs, the liver comes directly after the testis and brain in susceptibility to syphilitic infection. None the less even now, probably only pathological anatomists fully appreciate how universally this great gland is affected.

To the clinician familiar with the usual autopsy findings in tertiary lues, the greatest wonder is that so few symptoms arise in the course of the ordinary case of syphilis of a type which can be directly traced to the disordered liver. Yet nearly all observers agree that this organ is practically always more or less involved in every instance of third stage syphilis, a fact first emphasized in America by Einhorn and Stockton.

Bearing in mind from my autopsy experience this almost universal disease of the liver in lues, I have interested myself during the past few years in attempting to draw something definite out of my clinical studies. In order that I might have a certain anatomical basis for my observations, I made an analysis of the liver condition as it occurred in fifty consecutive cases of syphilis which came to autopsy in my service.

At the outset of this analysis it must be emphasized that this brief paper is designed to discuss the role of the liver in syphilis and not, primarily, syphilitic lesions of the liver. I adopt this standpoint since it is obvious, as all clinicians or pathologists know who have long looked into the problem of late syphilis, that in many instances lesions which occur in the organs in lues are not in themselves characteristically luetic so far as their lesions go histologically, though the changes are, at least in most cases, either the direct or indirect results of infection. These cases are all examples of acquired syphilis in adults. Three died during the active stage of the disease, the remaining forty-seven represent the third and inactive stages. Thirty-nine cases occurred in males and eleven in women.

Symptoms of liver disturbance appear quite early in lues. Jaundice not infrequently appears in the early active secondary stage, at about the time that the rash and mucous membrane lesions develop. Most clinicians are inclined to consider this icterus immediately akin to that which appears in so many other acute infections, i. e., that it is substantially catarrhal in nature, as is that which develops in acute catarrhal jaundice; this is the generally accepted theory of Rolleston. Although it cannot be disproved that, at least in some cases, this may be the mechanism, we can offer direct evidence that this is not always nor even usually the case. In two instances of secondary syphilis, one of this series, which have come to autopsy under my observation, histological studies showed an active syphilitic periarteritis with the formation of myriad foci of small round cell infiltration and proliferation which extended out from about the radicles of the hepatic arterioles, thus also involving the walls of the bile ducts. The process also extended into the liver parenchyma, causing areas of extensive parenchymatous degeneration of the gland cells. Changes very similar to those in acute yellow atrophy of the liver have been reported by Kelly, and have also been observed by me in one instance of late though active syphilis, which occurred on my service, but which is not included in this analysis.

Histological studies of the liver in the congenital syphilis of infants dying during the early stage, of skin and mucous membrane involvement, show quite similar lesions, and the histology of the old fibrotic liver lesions in long standing cases of congenital lues shows a connective tissue growth which in all probability has originated from just such a series of changes.

If we are correct in our assumption that interstitial and inflammatory hepatic lesions develop very early in syphilis, why do we find symptoms of liver disease playing an unobtrusive symptomatic role in late syphilis? In but one of the cases comprised in this analysis did hepatic signs and symptoms dominate the clinical picture, and in but three other instances did the liver symptoms become sufficiently important to be extensively discussed in the current routine history of the case. This apparent discrepancy, I believe, may be explained by the statement that, perhaps, of all the large parenchymatous organs of the body, the liver is best adapted to stand injury, particularly as regards deep internal inflammatory lesions.

That liver disease is universal or very nearly so in syphilis of any period after the initial sore, is indicated by the fact that all of the fifty patients whose cases are analyzed in this paper, showed abundant lesions of the liver. No assertion is made, however, that all these lesions were in themselves specifically luetic. None the less, seven of the fifty cases showed either gross or microscopic gumma. Welch found at the Johns Hopkins Hospital in forty-seven cases of hepatic lues from a series of 2,300 autopsies, nineteen instances of liver gumma. In seven of my cases the fibrous lesions took on that type, long spoken of by pathological anatomists as the "syphilitic cirrhosis," that is, the liver cirrhosis was characterized by broad deep bands of fibrous tissue which cut the liver up into sharply defined massive nodules. In Welch's series sixteen cases showed changes of this type.

In fourteen instances the liver was enlarged in volume above the normal, and proportionately much

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more so in weight. In eighteen examples the organ had about the usual proportionate volume, but weighed no more than three and one half pounds and no less than two and one half. In the remaining eighteen cases, weight and size fell far below the normal. It is noteworthy that in lues, as in other types of liver disease characterized by fibrous overgrowth, though the bulk may be considerably decreased, the weight is very likely to remain high; conversely, in certain cases, notably those in which fatty degeneration has caused marked enlargement of the gland, the weight may sometimes fall below the normal.

Although but seven instances of the typical syphilitic cirrhosis were found, diffuse interstitial hepatitis was present in twelve instances, most of which showed microscopical lesions of an unquestioned syphilitic character. This is the type of diffuse cirrhosis described by Gubler, in 1852. In two instances the syphilitic virus had apparently acted chiefly on the arterial walls, causing a very active perivascular cirrhosis. Thus in all, twenty-one of the fifty cases showed interstitial changes of probably luetic origin, doubtless assisted in many instances by such subsidiary factors as alcoholism, malaria, etc., the contributory importance of which Semmola and Geofreddi and others have pointed out.

As to the character of the degenerative alterations in these cases, thirty-six showed fatty degeneration; in seven brown atrophy was marked and in seven others amyloid degeneration appeared as the most pronounced alteration. In ten cases only were extensive degenerative changes of one sort or another wanting. In practically all the instances in which the hepatitis was of evidently progressive character, active inflammatory circulatory changes were also found. In fifteen cases, passive congestion was the dominant circulatory defect.

That the changes in the liver possess a more or less individual and independent type or character, is suggested by the fact that they differed radically in general type from those found in the kidneys taken from the same case in thirty-four instances and they were of a similar character in but sixteen.

Perihepatitis, which has been long mentioned as a frequent lesion in hepatic syphilis, was found more or less marked in several instances, and in three presented the extreme grade of a diffuse hyaloserositis.

From a study of the histories of these post mortem cases and from an extensive clinical experience with internal syphilis, I am convinced that the symptoms of liver involvement in late lues are extremely uncertain. Usually symptoms of liver disease are wholly wanting or are so obscured by more dominant indications of involvement of other viscera that they entirely escape observation, even in some cases where they are particularly sought. The symptoms may even remain entirely in abeyance until the lesions have become so advanced as to preclude hopeful treatment.

Tumor of the liver, either a diffuse enlargement or a palpable gumma indicated by the usual signs and symptoms, is a frequent finding. Ascites without other explanation is also quite frequent, though it does not appear as a rule until quite late in the process. Irregular fever, apparently chiefly accounted for by the liver disease, is sometimes present and in my observation is most common with extensive amyloid degeneration.

As will be noted, except where jaundice or evidences of vascular obstruction develop, the symptoms are only such signs as would appear on physical examination and are often of such nature as readily to escape observation or be judged as unimportant in the absence of symptoms of more insistent nature.

My clinical and pathological studies have convinced me that only in very exceptional instances do liver signs and symptoms arise in lues which are of considerable differential diagnostic value so far as determining the character of the infection is concerned. Even the deeply scarred, hard, nodular and adherent liver taught us as characteristic of hepatic syphilis, may be absolutely simulated by a type occasionally developing for example in alcoholism and, conversely, the large hyperplastic diffuse cirrhosis, which is seen so very frequently as an end result of chronic alcoholism, is frequently caused by syphilitic infection as first pointed out by Gubler, in 1852.

Tyson truly says that syphilitic disease of the liver is often first discovered at autopsy, and indeed the true origin of the lesions may not be suspected until a microscopic examination is made. In none of the seven cases of gummatous hepatitis included in this analysis, was the clinical diagnosis of the liver lesion made, nor did lesions cause definite symptoms of hepatic derangement of any serious moment. Where, however, palpable gummata are present and when a positive history or Wassermann reaction has been obtained and the mass disappears under specific treatment, diagnosis is of course quite possible. In the nodular, deeply scarred type of cirrhosis, when this type of lesion can be surmised from physical examination, the fact that no change follows vigorous specific treatment is by no means an indication that the cirrhosis is not of luetic origin. In my experience the Wassermann reaction is very rarely absent in untreated cases of lues of any stage when the liver is seriously diseased, but, for the reasons mentioned above, the therapeutic test is diagnostically very unsatisfactory, except in early or gummatous instances.

During the secondary period of the infection, correct antisyphilitic treatment is, as every clinician knows, promptly followed by relief of the hepatic disturbances if they are evident, that is, jaundice will promptly clear up and tenderness and swelling of the liver will subside. Gumma will resolve in late syphilis, but I have found little if any anatomical alteration detectable on physical examination, either in the nodular or diffuse variety of cirrhosis, even where most vigorously treated. On the contrary, even in certain instances which have been correctly treated and which even attain a negative Wassermann, the cirrhosis usually progresses, though perhaps less actively than before treatment.

Microscopic examination of liver tissue taken from tertiary cases after vigorous specific treatment, has in two cases showed complete resolution so far as round cell infiltration, gummatous nodules, and other characteristic luetic lesions are concerned, but with fibrous hyperplasia still progressing as in ordinary hepatic fibrosis. I have, therefore, arrived at the conclusion that treatment in long standing cases

of hepatic disease in syphilis is followed by less favorable results than in most other forms of deep visceral lues.

44 West Ninth Street.

DIAGNOSTIC PITFALLS IN THE MENTAL EXAMINATION OF NEGROES.

By John E. Lind, M. D.,
Washington, D. C.

It happens now and then that the general practitioner finds himself called on to pass an opinion in a case of alleged mental disorder. In those patients whose means permit, the family physician customarily consults with alienists, who corroborate or modify his opinion, and the case presents, ordinarily, no complexities. But where patients are less fortunately situated, the cost of such expert opinion is prohibitive and the physician is obliged to rely upon what he has remembered of psychiatry from his student days, of five, ten, or twenty years ago, fortified by the occasional observance of a case since graduation. The general practitioners who hold such positions as physician to the poor in large cities, attending physician to almshouses, workhouses, and other public institutions, are often required to estimate the mental status of some dependent person and, not being able to secure the services of an alienist, must rely on their own judgment. As this often means that they decide whether or not the suspected person becomes an inmate of an institution for the mentally abnormal or comes before a court of judicial inquiry, it is obvious that, without dealing here with refinements of diagnosis, the question whether or not he is sane (using the legal conception of this term) should be decided accurately to avoid both the stigma, which might otherwise attach itself, and the publicity which is necessarily given, to wrong diagnoses in such cases.

It is to the credit of the profession generally that comparatively few mentally normal persons are sent to institutions, in fact, roughly speaking, ten mentally abnormal persons are allowed to be at large after being tested as to their mental condition, where one mentally normal person is pronounced insane. The latter class of mistakes occur in white patients, undoubtedly, although in my experience I recall only a few such cases compared with the rather large number of such instances in negroes. It is the purpose of this paper to call attention to some difficulties which beset the uninitiated in the mental examination of negroes.

We must remember that we have in dealing with the negro, especially the negro with little or no white admixture, a somewhat primitive psychological type whose cultural levels overlook but slightly those of the savage. Superstition still hovers with batlike wings over his emotions and casts shadows of fear about all incidents differing from his daily routine. "Haunts," spirits, conjurers, spells and hoodoos people his world. His theology centres about a personal Deity Who speaks to him at times, even as of old He called Samuel in the night. His psychology is that of a child, but of a child who lives in contact with a world moulded to suit the requirements of more highly developed types. It is not surprising that when an isolated individual is observed by one not familiar with the psychology and prejudices of his race, characteristics normal to the individual are sometimes mistaken for symptoms of a psychosis. Let us review a typical mental examination, and chart out some of these diagnostic rocks. We will take for that purpose the minimum examination in White's *Outlines of Psychiatry*, fourth edition, chapter xx. This is certainly as comprehensive as the average in such cases, and probably more so.

We will begin with the mental examination proper. The orientation is the first field into which inquiry is made. It will often be found that a negro is very poorly informed about the day of the month and the year; sometimes especially toward the end or the beginning of a month, he will give the following or the previous month instead of the correct one. The season, too, is a rather indefinite division of time in his mind; he is very apt to base his answer on the state of the weather prevailing, e. g., if it is a bright, balmy day in January or February, he will say it is spring; if the snow is falling in November, he will call it winter. Orientation for place and people is not so apt to be at variance, but a negro often spends from several days to several weeks in a hospital without bothering to ascertain its nomenclature accurately. A frequent question asked, "Who is President of the United States?" often brings forth the name of the last President instead of the present one, especially if the last President has chanced to have a picturesque personality. These replies to the questions concerning orientation must not then be confounded with pathological clouding of consciousness. In the fields of general memory apparently gross defects appear in nonpsychotic negroes. I have seen them, for instance, unable to recall accurately the number of their children. One negro told me he did not remember the date of his marriage, but it was "on a Tuesday."

These memory defects seem at first sight pathological, and a word or two of explanation may not be amiss. The institution of common law marriage is much more prevalent among the negroes than among the whites, sexual relations are more promiscuous, and family ties are looser. I am speaking only very generally, and do not wish this to be understood as an arraignment of the morals of the negro race as a whole. Many factors undoubtedly enter into this condition of affairs, the frequent involuntary dissolution of families in slavery times, the tendency to license of all kinds immediately succeeding abolition, the crowding together of the poorer negroes in large cities, etc.

In the emotional status, it should be noted, a negro is often described as being elated, hypomaniacal, etc., when he is exhibiting the racial freedom from worry. The negro is a child of nature, he is easily amused, easily led, and a confirmed traveller in the path of least resistance. I have frequently observed that negroes placed in an institution seem relieved that the problem of bed and board was thus happily solved; they were highly entertained by the grotesque appearance and strange conversation of the mentally afflicted in-

mates and remained during the course of their stay in the hospital in a state of high good humor, laughing, singing, and playing jokes continually, although mental examination failed to reveal any evidences whatsoever of a psychosis.

It is, however, in the examination for hallucinations and delusions that the most frequent mistakes are made, as this is the most patent symptom of mental disorder to the lay mind, and even to the practitioner who does not specialize in psychiatry. We find in negroes the frequent statement that they have seen spirits, angels, ghosts, and other supernatural manifestations. We should remember here that literature abounds with stories of the supernatural, that of even highly educated persons, at least one half believe in ghosts, if not openly and avowedly, then *hinter den Bergen*. It is not surprising that the negro, stocked as he is with the rich supply of traditions pertaining to haunts, night doctors, hags, and hoodoo men, which every old negro uncle has at his command, should mistake things in dark and mysterious places for beings from another world, or that he should attribute persistent bad luck or ill health to evil influences of diabolical origin.

The most common error of all, perhaps, in dealing with the negro, is to accept at its face value the statement that he has seen and talked with the Lord. Strict investigation should be made of this statement before it is accepted as an hallucinatory experience and usually the subject of inquiry will qualify it later by saying he meant "with the eye of faith," or "the ear of faith." The tendency is found oftener in old negroes who are of a pious turn of mind, and, having done with the follies of this world, begin to anticipate the glories of another, although it will be often found, too, in the younger negroes. In the search for delusions, we must also bear strictly in mind the definition of a delusion (see White's *Outlines of Psychiatry*, fourth edition, p. 53 *et sequentia*), and if the statements of the negro under examination seem at first sight to be delusional, let us see whether or not they harmonize with his racial makeup, his education, and environment. Bear in mind, then, his credulity, his primitive reasoning powers, his superstitions, and his untrained observations.

It sometimes happens here, in Washington, D. C., that negroes arrive from country districts and almost immediately fall into the meshes of the police net through some absurd inquiry, or the statement that they have come to see the President to get some job. It develops then that the whole episode was the result of a practical joke by some town wag who told the negro that all he had to do was to apply to the President in person and he would be accommodated. Negroes have frequently been sent to the Government Hospital for the Insane, with some such statement as this: "He thinks people are against him. Thinks people are putting a spell on him and trying to hoodoo him. Says some man burned some powder and this causes pain in his limbs."

I recall one case in particular, the supposed delusional field of which was expressed in this way: This negro, a boy about twenty years old, had got into trouble with a family in his neighborhood and some of his friends told him to look out, that they would put a spell on him. Later, these friends, whether in a joke or not was never ascertained, probably not, told him that his enemies had gone to a hoodoo man, who had burned a powder which would cause him to sicken and die. It is not surprising that the first pain of any kind this boy had, he should attribute to the diabolical machinations of his enemies. The absurdity of this was explained to him at the hospital, and he was intelligent enough to appreciate it and was discharged. In passing, it might be well to say that in every community where negroes abound, certain of their race set up in business as professional conjurer men, and make a good living from the credulity and ignorance of their fellows. For a consideration, they will sell love potions, charms, and lucky pieces of all kinds, and will also throw spells upon any one whom the client wishes to injure. One of their bits of stage business is to throw a handful of lycopodium powder into the air and apply a light to it as it falls. The powder burns with a crackling noise and little spurts of flame; the conjurer pronounces certain abracadabral incantations, pockets his fee, and the spell is duly supposed to be in operation.

In all the memory and intelligence tests of the mental examination, it is probably superfluous to say that it must be considered that the negro is, as a rule, less highly educated than the white, and his memory is not trained.

To sum up, then, it might be said that there are two things to be kept in mind especially, in the mental examination of the negro, one is, not to jump to conclusions, the other is, not to take what he says at its face value. Examine each statement carefully to see whether he actually means it as he says it or not. Remember that his vocabulary is limited, that he does not speak your language. After you have decided that he actually does mean the statement as it is given, consider whether or not it is in accord with his psychology, his superstition, his prejudices, and his theology, in short, if it is what you would expect of a person whose great grandfather was perhaps a cannibal; and finally remember that, if after you have made a careful mental examination of a negro, and there is a doubt in your mind as to whether he is crazy or not, he probably is not.

Government Hospital for the Insane.

TREATMENT OF WHITLOW (PARONYCHIA, FELON.

By Beverley Robinson, M. D.,
New York.

We all know how troublesome and painful these affections are. Whitlow is ordinarily the slighter, less serious disease, but at times, starting as whitlow, it becomes felon. This is when the periosteum, the bone, and perhaps, the tendon sheath become involved. When the usual applications, such as tincture of iodine, alcohol, or spirit of camphor, witch hazel, and repeated poulticing with flax seed, fail to relieve the pain and tension, a deep or sufficient incision should be made. As a rule, pus is found and will appear very soon. Occasionally, nothing but

blood comes to the surface from the wound, at first, or subsequently.

In view of a late experience with a very obstinate case, I would recommend strongly the use, morning and evening, of equal parts of glycerin and saturated solution of epsom salts. Aseptic gauze should be saturated with this mixture, then covered with thin rubber tissue and a little absorbent cotton, and held in place on the finger with a narrow gauze bandage and safety pin. During the day this application may be removed advantageously for a while, and the finger soaked in hot water and borax (half an ounce of borax to one pint of hot water), at least during fifteen to twenty minutes, two or three times in twenty-four hours. Without doubt, the borated solution is very useful in reducing local pain and redness, and probably limits the spread of disease. Prior to its employment, I had used a half saturated solution of boric acid in water, with very poor results.

When the felon is well on toward recovery, after several weeks of wet dressing and soaking, oxide of zinc ointment applied at bedtime or during the day also, was notably beneficial in curing what still remained, although slight, of pain, redness, and swelling. Shortly after the initial stages of the felon and during its middle course, fleshy granulations sprouted over the base of the nail. Finally they hardened and became new nail, and the old nail was pushed off or separated itself gradually, until at last it came away entirely.

I am confident that the treatment in this case was very valuable in effecting recovery, and, further, saved the affected finger from necrosis of the terminal phalanx, and, perhaps, necessary amputation. Probing the wound and introducing a gauze drain, after the incision, gave issue only to blood. The cause of the felon was undetermined; possibly it was due to the entrance of infectious microbes through a small accidental tear or wound.

The general condition showed signs of evident impairment, and while iron in the form of Blaud's pill seemed to increase the local pain and inflammation, the compound tincture of gentian, given in one dram doses before meals, seemed to be helpful.

I have not hitherto seen any other treatment of felon so successful as the one just described. To Dr. E. M. Freese, of North Dakota, I am indebted for the treatment by means of glycerin and epsom salts, when other means failed me, and when I felt somewhat discouraged.

To any one who has to do hereafter with felons or, indeed, with any infections of finger, hand, or forearm, I would advise strongly the reading of his admirable and convincing article in the NEW YORK MEDICAL JOURNAL for February 14, 1914, entitled Magnesium Sulphate and Glycerin in the Treatment of Infections.

I am confident that my own addition to Doctor Freese's treatment, of the solution of borax and hot water, was also very valuable. I presume it had a beneficial action, in part, at least, as an antiseptic application. Goulard's cerate and sterilized petrolatum, used locally, prior to the zinc ointment, were not beneficial.

It is in the report of just such a case as mine, which carries an instructive lesson, that more is really acquired by other practitioners than by following already beaten roads. Finally, after the recognition of being misled, their search is made after something better. As in my own case, they may chance upon a treatment which really cures or they may not. If they do, they owe it to other physicians to publish it.

42 WEST THIRTY SEVENTH STREET.

AUSCULTATORY INFLATION OF THE COLON.

A New Method of Outlining the Position of the Colon.

BY JOHN H. MUSSER, JR., B. S., M. D.,

Philadelphia,

Physician, Philadelphia General Hospital, Physician, Medical Dispensary, University of Pennsylvania and Presbyterian Hospital.

The importance and necessity of outlining and determining the position of the colon in abdominal disorders is frequently brought to the physician's attention. This need, particularly important from a diagnostic standpoint, is readily apparent to those interested in gastroenterology as well as in general practice. Especially is this so since the much discussed colonic stasis has so frequently been considered the etiological factor in a myriad of vague disorders. If anatomical or pathological alterations in the colon can be definitely shown, there is at once evident a possible seat of present or future trouble.

The great difficulty in the past, however, has been to find a method by which the position of the colon could be definitely outlined. Two procedures have been employed, 1, the Röntgen ray, and 2, inflation of the colon with air. The objections to the first method are primarily the expense, and, secondarily, the time consuming and often annoying preparation for examination. These objections in many cases are invalid; some patients have the money and the time to give to this examination, while others, patients in the public wards, have the time, and the expense falls only upon the hospital. In many patients, however, these are very real objections, and they apply particularly to the class of patients upon whom x ray has been done, namely, the patients in the medical dispensary. Unless these patients are willing to go into the ward for one or two days, this type of examination must be foregone. When the wards are full, or when the patients cannot afford to give the time, even if they are willing to do so, a satisfactory Röntgen ray examination is out of the question. The same remarks apply to the great body of moderately well to do patients, who are able to pay reasonable fees, but cannot afford larger outlays, unless absolutely necessary. In these types of patients, resource must be had to inflation of the colon with air, a most unsatisfactory procedure in any case. Unless the patient has thin abdominal walls it is impossible accurately to see or percuss the position of the colon. To obviate this difficulty, I have been employing a method the past year and a half which, as far as I know, has never been used before. It is an adaptation of the well known and extensively employed auscultatory inflation of the

stomach and has, I believe, the same relative value up to a certain point.

The method I employ is as follows: The patient is instructed to have the bowels well emptied before coming to the dispensary. Usually a simple cathartic the night preceding the examination is sufficient, though at times I have advised them to take cleansing enemas immediately before coming to the dispensary. When ready for the examination, a thick, rather stiff rectal tube is put, by the patient or the nurse, as high into the rectum as possible with comfort to the patient. I use a tube that will project from the rectum about twenty to twenty-four inches so that it can be manipulated easily from any position and may be brought out from beneath a sheet or the clothes without exposure of the patient. A strong air bulb is then placed on the distal end of the tube. With the patient in the prone position and the abdomen uncovered, the stethoscope bell is placed upon the lowest portion of the abdomen. The bulb is then squeezed and after each squeeze the stethoscope bell is moved upward an inch or two. When the transverse colon is reached, the character of the inflation sound is distinctly changed, and from a rather muffled distant sound, becomes a much clearer, louder sound with a rather metallic tone, while the passage of the air can be distinctly heard. The same procedure is repeated in every direction and the first change of tone is marked on the skin with a dermographic pencil. In this way the entire outline of the colon is marked off on the abdomen. The patient can now be made to stand and the outline in the standing position may be obtained. There is usually no difficulty in securing a noticeable change in the inflation tone over the sigmoid flexure, the descending and transverse colon. The tone is not always clear, however, in the region of the hepatic flexure and the ascending colon, but becomes very distinct and unmistakable, as a rule, over the cecum. With this method abnormal variations in the large intestine are readily appreciated. A redundant sigmoid, a ptosed colon, a dilated and movable cecum, and other abnormalities are usually clearly revealed.

I have been able to control seven of these inflations by fluoroscopic examinations, made at the University of Pennsylvania Hospital by Doctor Pancoast and Doctor Graves. Before the Röntgen ray procedure, I would diagram my findings and write down exactly what I found upon auscultatory inflation. I would then compare them with the reports and findings of the radiographers as well as what I saw during the fluoroscopy. In six of these cases the two findings corresponded accurately. In the seventh they did not do so, but on repeating the auscultatory inflation test, my results corresponded with those of the Röntgen ray.

I believe, in view of the foregoing uniformly correct findings by this auscultatory method, that it is a method of diagnosis which often may be substituted for Röntgen ray examinations and which will secure a correct diagnosis in those patients who are unable or unwilling to undergo the bismuth examination of the intestines.

During the course of the rather numerous uncontrolled inflations that I have done, I have had the opportunity of making other observations. For example, I have found Bastedo's sign of appendicitis very trustworthy and present very uniformly in cases diagnosed as chronic appendicitis, though, so far, only two of these have been actually verified by operative procedure. In a very few cases, I have, I believe, been able to diagnose several times partial mechanical obstruction. This is accomplished, not by the auscultatory phenomena, but by the subjective sensations of the patient. After a certain amount of air has been blown into the bowel, the normal patients have a feeling of moderate distress which is promptly relieved, upon removing the bulb, by the passage of the air from the end of the tube. In the presence of a mechanical obstruction, the air is not promptly passed, but is retained for some time. With this there is sharp, colicky, cramplike pains in the region of the suspected obstruction, due no doubt partially to the increased peristalsis, induced by the mechanical effect of the air. These cramplike pains are not relieved until a large part of the air is passed. In these patients it is possible often to obtain a history of mechanical obstruction entirely unsuspected before the inflation of the large bowel.

The information ascertained by inflation of the bowel is of such value that the procedure should be practised extensively. Certainly, knowledge of vague intestinal disturbances can often be gained by inflation that will point to the true cause of the disorder without the necessity of expensive röntgenographic examinations.

1027 Chestnut Street.

PITUITARY EXTRACT IN OBSTETRICS.*

By George L. Brodhead, M.D.,
New York.
Professor of Obstetrics, Post-Graduate Medical School and Hospital; Visiting Obstetrician, Post Graduate and Harlem Hospitals; Associate Surgeon, Women's Hospital.

The use of pituitary extract has long since passed the experimental stage, and we are now in a position to judge more definitely of the results obtained. First, let us consider the action of the extract in labor. Personally we have used the preparation only when the head or breech was low in the pelvis, or at least engaged in the pelvic brim, when the cervix was either fully dilated, or fully dilatable, and when no obstacle to delivery was present.

In our series of cases, probably fifty in all, we have seen no bad results, either for mother or child. The action has been very satisfactory in most of the cases, but there have been instances where there was no appreciable effect. Some of the preparations used may have been inert. Having had a favorable experience, myself, in the use of pituitary extract, and knowing that in the hands of others unfortunate results had been observed, I sent a letter to a number of men who had had considerable experience in the use of the preparation, asking for their opinion. With the reader's permission

*Read before the Medical Association of the Greater City of New York, April 21, 1914.

I will quote from a few of their replies. Oastler states that he has used pituitary extract in fifteen cases with no bad results, and with success in twelve of the fifteen patients. Telfair has seen no bad results following the intelligent use of the extract, but he had seen two cases in which abnormal conditions were aggravated by its use.

Polak says: "We have come to consider pituitrin a very dangerous drug from recent experience. We have used it in something over 200 cases. It will cause rupture of the uterus if there is any disproportion—two ambulance emergency cases have shown this. It will separate the placenta by causing too active uterine contractions, resulting in dead babies; three recent cases have demonstrated this. We use it now, only when there is wide dilatation, no outlet obstruction, and delayed second stage, watching the fetal heart constantly and having forceps ready for immediate delivery if any change in the fetal heart is noted."

Dickinson states: "In answer to your question as to what bad effects I have seen from the use of pituitrin, let me say that I have seen none. This, it seems to me, is owing to the rigid adherence to the following rules. Pituitrin being a swift ergot, should be used only when the patient can be delivered within ten or fifteen minutes—as by forceps. The cervix should be completely dilated or dilatable, and no obstruction should exist. It is invaluable under conditions like these: 1. Cervix as above. Head engaged in brim of sufficient size to allow it to pass and with a need of calling out the last reserves. The upright position, expressio fetus, whiskey and strychnine having failed, by pituitrin the head is brought from high forceps position to low forceps position at the least. 2. The head crowning, patient all in. Here low forceps extraction is often unnecessary, because of the calling forth of the last ounce of strength by pituitrin. 3. To contract the uterus for post partum hemorrhage after delivery of the placenta. In all labors, toward the end of the second stage the front of the thigh is scrubbed with alcohol, a sponge strapped over the spot, and the hypodermic (injection) given with one or two ampoules, according to the strength of the preparation. We are using it freely in the obstetrical service of the Brooklyn Hospital for the foregoing indications, and among twelve private cases recently observed in patients of wealth (and emotionally susceptible, one would think) I find one who had a collapse after delivery in which pituitrin had been used; but I find no relation as to time, and no difference from previous faints in her case."

Careful search of the literature with reference to fatal cases, reveals but few. In the *American Journal of Obstetrics*, and in *Surgery, Gynecology, and Obstetrics* for the last few years, I can find no record of a fatal case. E. Herz (*Zentralblatt für Gynäkologie*, xxxvii, 20, 1913) reports a case of rupture of the uterus from pituitary extract, the woman recovering, however. In summing up, the author enumerates the untoward consequences of the extract, with references, but no fatalities are cited. Esput (*Münchener medizinische Wochenschrift*, August 12, 1913) reports a fatality from pituglandol, death following hysterectomy for ruptured uterus, on the third day, from general peritonitis. R. C. James, of this city, has furnished me with the history of a case which occurred in Flint's service at Bellevue Hospital:

Case. The woman was a 6 para, two children having been extracted with forceps. The vertex was engaged in the brim in right occipital posterior position, the cervix was fully dilated, with plenty of room, but the pains were weak, and progress had ceased, the head showing no tendency to rotate. One ampule of pituitary extract was given by the resident physician, and within a few minutes the pains became strong and the head began to descend. The physician kept his fingers on the head to maintain good flexion, and the vertex was advancing rapidly, when the woman had what seemed to him an unusually strong contraction, and sank back on the pillow, the fetal head at the same time receding from his fingers and passing out of reach. The diagnosis of ruptured uterus was made, and James operated at once, finding an eleven pound baby in the peritoneal cavity, the uterus having been torn across anteriorly and up the left side almost to the fundus. Hysterectomy was performed, but the patient died a short time after leaving the table.

These cases show clearly what may happen after even one dose of pituitary extract, but, on the other hand, the writer has reported two cases of spontaneous rupture of the uterus in patients who had previously experienced no difficulty in their confinements, who were having a perfectly normal labor with vertex presentation, and to whom no pituitary extract or ergot had been given.

In conclusion, therefore, we believe that the extract, when used intelligently, in the absence of disproportion and with good cervical dilatation, is a very valuable and a comparatively safe therapeutic agent. The fetal heart must be carefully watched, and chloroform should be at hand to relieve violent contractions, with forceps ready for instant use. The extract gives satisfactory results, as a rule, and is well worth a trial in properly selected cases. We have usually given one c. c. as the initial dose, repeating every twenty minutes, if necessary, until three doses have been given. If three injections fail, we have discontinued the use of the extract.

In Cæsarean section, we have injected the extract immediately before making the incision, with excellent results. The uterus contracts well and the operation is made easier because of the comparative absence of hemorrhage.

For post partum hemorrhage we have never relied upon the extract alone, always combining it with ergot. We have no reason to doubt, however, that the quick action which is obtained in the use of the extract is of undoubted value in the treatment of this variety of hemorrhage. The use of the extract as a galactagogue has never appealed to me as being practicable, and I have never used it for this purpose. For retention of urine, some observers have praised the extract highly, but in the few cases in which I have tried it, the result has been nil. So strongly am I opposed to the use of the catheter in the puerperium, however, never using it until every other known expedient has failed, that I intend giving the extract a further trial. Whether pituitary extract would possess any advantage over ergot for use under these circumstances, I am unable to state.

144 West Fifty-eighth Street.

THE EFFECT OF THE NEW REGULATION RESTRICTING THE SALE OF BICHLORIDE OF MERCURY.

By Charles F. Pabst, M. D.,
New York,
Associate Dermatologist, Brooklyn Hospital and Dispensary.

The regulation of the sale of bichloride of mercury in the city of New York has been enforced since March 1, 1914, and the statistics from the coroners' offices of the five boroughs from that date to June 1 are extremely satisfactory. This period constitutes the first quarter of the operation of the new act, and the result is especially interesting because New York was the first city to adopt a measure restricting the sale of this poison. Bichloride of mercury has caused ten deaths during the past three months, six of which were suicides and four accidental. Four of the suicides were in Manhattan, one in Brooklyn, and one in Queens. Of the accidental deaths, three occurred in Manhattan and one in Brooklyn. There were no fatalities from this cause in Queens or Richmond during this period

During 1913 there were forty-four deaths from mercury poisoning in greater New York, which would give an average of eleven for each quarter. This, however, does not indicate the real decrease that has taken place, because the number of deaths was rapidly increasing just before the regulation went into effect. The average for the quarter preceding the regulation was much higher than that of the corresponding period last year. I expect, however, a still greater decrease in the current quarter and those succeeding, as many persons had a stock of bichloride in their homes when the regulation went into effect, and when the supply is exhausted the danger will be lessened, because the poison cannot be obtained easily under the new law.

This new regulation, adopted by the board of health of New York city provides that bichloride of mercury tablets cannot be sold at retail without a physician's prescription, and that the tablets must be made in a distinctive shape and color. An exception as to the shape and color is made to tablets of one tenth of a grain or less, as these tablets are often prescribed for internal administration. The restrictions do not apply to the wholesalers, and therefore impose no hardships on the druggists or manufacturers.

It will be noticed that Manhattan leads the other boroughs in the number of fatalities. I attribute this to the fact that people in Manhattan go over to Jersey City and obtain the tablets, as no prohibitory law exists there. To prevent this evasion of the law, I explained the situation to Dr. F. H. Edsall, superintendent of health of Jersey City, who has promised to insert a bichloride regulation similar to that of New York city, in the sanitary code which he is now revising. Now that the regulation has proved satisfactory in New York, many other cities will adopt restrictions along the same lines. This should apply especially to Chicago, as Dr. G. B. Young, commissioner of health, states that the Health Committee of the City Council has been considering for some time an ordinance restricting the sale of bichloride of mercury. Finley F. Bell, secretary of the Legislative Bureau of Illinois, sent to me for a copy of the measure, and intends to have it introduced into the Illinois Legislature.

The good effects of restricting the sale of bichloride of mercury can be demonstrated by the records for the three months since the new regulation went into effect. Not only has the rapidly rising wave of bichloride poisoning been checked, but the actual number of fatalities has decreased.

396 Franklin Avenue, Brooklyn.

Therapeutic Notes

Administration of Antimicrobic Serums by the Mouth.—C. de Bersaques and H. de Waele, in *Bulletin de l'Académie royale de médecine de Belgique* for November 29, 1913, refer to experiments conducted by Solm, which showed that upon administration of antipneumococcic serum by the mouth to rabbits, the antimicrobic properties of the blood are increased more promptly and attain a level three times as high as upon subcutaneous injection. The same observer also obtained good results clinically by giving antipneumococcic serum by the mouth in cases of corneal ulcer. Thus it seemed that, whereas the antitoxic properties of antitoxic serums are impaired upon introduction into the alimentary tract, the immunizing properties of antimicrobic serums are uninfluenced or even enhanced, and the authors undertook to extend Solm's clinical observations to other varieties of cases.

The first patient was, like Solm's patients, one with pneumococcic corneal ulcer. Administration of twenty c. c. of antipneumococcic serum per os on an empty stomach resulted in an improved appearance of the ulcer on the morrow and complete cure in a week. Another similar case, in a man sixty years of age, with obstinate and widely diffused ulceration, exhibited a like favorable result. In a case of pneumonia, administration of forty c. c. of serum in two doses at a thirty-six hour interval caused a marked improvement and a rapid diminution in the number of pneumococci in the sputum, although giving the same serum under the skin in a previous case, had not had any noteworthy effect. In a woman who had had a miscarriage, with placental retention and complicating infection, and in whom it was feared curettage after manual extraction would result in extension of the process, administration of 100 grams of antistreptococcic serum by mouth in two doses separated by a twelve hour interval, caused a prompt drop in the temperature from 40° to 37.2° C., recovery following without further local measures. In a case of rapidly spreading streptococcic dermatitis, due to infection of an operative wound by the patient's fingers, similarly beneficial, though less immediate, results were obtained. Finally, in a child with streptococcic pneumonia, the latter complicating an abscess in front of the cecum, administration of forty c. c. of a polyvalent serum by mouth was followed by complete recovery. Although the number of cases was small, the results seemed to prove to the authors the advantage of the oral route for giving antimicrobic serum. They lay stress on the fact that the serum

should be given undiluted and on an empty stomach, or, at least, at a considerable interval before or after the taking of fluids or solid food.

Management of Cases of Mental Disturbance Prior to Commitment.—G. T. Faris, discussing this question in the *Therapeutic Gazette* for February, 1914, points out that rest in bed is a valuable measure during the time which intervenes between the onset of excitement and the time the patient is taken to a hospital. To procure such rest it is usually advisable to resort to sedatives, one of the best being hyoscine hydrobromide in doses of from 1/100 to 1/50 grain (0.0006 to 0.0012 gram) hypodermically. In extreme cases with intense motor excitement, morphine sulphate in doses of one sixth to one quarter grain (0.01 to 0.015 gram) may be added. This usually quiets the patient during the time required in preparation for a pack.

In most instances, Faris believes, the hot wet pack has a greater sedative effect than the cold pack. In applying the former, a dry blanket is spread on the bed and the patient placed thereon. A sheet wrung out of hot water so that it does not drip is then quickly wrapped around one leg, up to the pelvis; a second sheet encloses the other leg, and a third surrounds the trunk; a blanket is wrapped snugly about, and reinforced by a second and third, if necessary. This form of pack has the advantage of permitting quick access to the rectum when an enema is deemed necessary or the rectal temperature is to be taken, without unduly exposing the patient. An ice cap or Turkish towel wrung out in ice water should be applied to the head and frequently changed. The patient is usually glad to take several glasses of cold water, and this is an advisable measure.

The pulse and temperature should be watched, and if no untoward symptoms develop, the patient may be left in the pack from one to six hours. Upon its removal, care to avoid rapid cooling is necessary; the patient should be wrapped in warm, dry blankets. The pack may be repeated as often as required.

It is of the utmost importance that a large quantity of easily digested food be administered to these patients. Milk, raw eggs, and animal broths, together with plenty of water, should be given beside the regular meals. If the patient refuses to eat, time for hunger to assert itself should be allowed to elapse before artificial feeding is resorted to. Frequently when these patients awake from sleep, they will take several glassfuls of nourishing fluid, though at all other times refusing to do so. Artificial feeding is best accomplished through a nasal tube.

Colloidal Silicon in the Treatment of Simple Goitre.—Suard, in *Presse médicale* for October 18, 1913, reports the case of a girl, eighteen years of age, in whom a marked enlargement of the thyroid gland suddenly developed after she left a ballroom in which she had spent the evening. One week later, the gland was still large and tender, but showed no fluctuation nor throbbing. There were no symptoms suggestive of the exophthalmic form of goitre. Four subcutaneous injections of three c. c. of colloidal silicon were given at four day intervals, and after the third injection the thyroid began to soften, respiratory difficulty disappeared, and the circumference of the neck diminished by three cm. Two weeks later, two more injections brought about a further diminution of two cm. The author is convinced that the colloidal silicon was chiefly, if not wholly, responsible for the regression of the thyroid enlargement, and advises that this remedy be given a trial in cases of simple goitre before operation is resorted to.

Treatment of Alopecia.—Dr. J. Guthrie, in the *Practitioner* for October, 1913, asserts that thorough treatment of the early stage of dry scaliness in this condition will often prevent the onset of baldness, otherwise certain to occur some years later. In male patients the scalp should be washed daily, in the female, less often. Definite directions must be given as to how this is to be carried out. The scalp should be first wet with lukewarm water, then rubbed with a handful of soap spirit, made from equal parts of soap and alcohol, or with the following scented combination:

℞ Tincturæ lavandulæ compositæ,.....3iii (12 c. c.);
Saponis mollis, }
Alcoholis, } .....āā 3iii (90 c. c.).
Misce.

After this the head should be washed in several changes of water and thoroughly dried. Should such frequent use of soap cause the hair to become too dry, the occasional use of the yolk of an egg, beaten up in a glassful of water, will be beneficial.

In addition to the cleansing procedures, prescription of a lotion or pomade is often advisable. Of lotions, the following is recommended by Sabouraud:

℞ Hydrargyri chloridi corrosivi,....gr. x (0.6 gram);
Acidi salicylici, ...gr. xl (2.5 grams);
Alcoholis, ...3iv (120 c. c.).
M. et ft. lotio.

A sulphur lotion is preferred by Brocq:

℞ Sulphuris præcipitati, ...3iv (16 grams);
Spiritus camphoræ, ...3vi (24 c. c.);
Glycerini, ...3ii (8 c. c.);
Aquæ, ...3iv (120 c. c.).
M. et ft. lotio.

Another good lotion, owing its action to resorcinol, is:

℞ Resorcinolis, ...3ii (8 grams);
Alcoholis, ...3iii (12 c. c.);
Glycerini, ...3iv (16 c. c.);
Aquæ rosæ, ...3iv (120 c. c.).
M. et ft. lotio.

In severe cases, especially in male patients, better results may be secured by the use of pomades, e. g.:

I.

℞ Sulphuris præcipitati, ...3ss (2 grams);
Olei theobromatis, ...3i (4 grams);
Olei ricini, ...3v (20 grams);
Tincturæ benzoini compositæ,.....mlv (0.3 c. c.).
M. et ft. unguentum.

II.

℞ Resorcinolis, .. }
Acidi salicylici, } .....āā gr. x (0.6 gram);
Olei cadini, ... }
Adipis lanæ hydrosi, } .....āā 3ii (8 grams).
Petrolati, ... }
M. et ft. unguentum.

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EDITORS

CHARLES E. DE M. SAJOUS, M. D., LL. D.
CLAUDE L. WHEELER, A. B., M. D.

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NEW YORK, SATURDAY, JUNE 27, 1914.

A SUCCESSFUL MEETING.

At noon on Tuesday, June 23d, it was stated that over 2,000 members of the American Medical Association had registered at the Sixty-fifth Annual Meeting at Atlantic City. No more enjoyable or successful meeting has probably ever been held, the weather being ideal, in delightful contrast to the grilling heat experienced two years ago at the same resort, and giving animation to the various sections and to the deliberations of the allied societies which prefer to hold their annual gatherings under the wing of the great parent organization. The Apollo Theatre was packed to hear the address of the president elect, which we have the privilege of presenting in this issue of the JOURNAL; the numerous entertainments in honor of the members and of their wives and families were admirably planned and magnificently carried out; the huge hotels swallowed up the crowds without discomfort and fed them with the abundance and in the superb style for which Atlantic City is becoming famous; and altogether those who had the privilege of attending this meeting are likely to look back upon it with pleasant memories for many years to come. We present in this issue the first instalment of a concise yet complete report of the proceedings of the House of Delegates as well as summaries of the more important papers read in the sections, a report which we expect to complete in our next issue. Yet this first instalment will give our readers a good idea of what was presented at this meeting many months before the majority of the papers themselves can appear in print. This report has entailed an immense amount of labor in plan and execution, but we are glad to be able to render our readers this service and trust that they will reap the benefit we had in mind when undertaking it.

BASELESS CRITICISM OF THE AMERICAN MEDICAL PROFESSION.

Referring to the storm of criticism which arose in the British Medical Association following the publication of a *Family Medical Encyclopedia*, in which the names of many well known English medical men appear, the *Journal of the American Medical Association* for June 20, 1914, rightly takes vigorous exception to the statement of some unknown critic who likened the conduct of the authors of the work to "the fever of self advertisement which characterizes the American profession from tip to toe." Indeed, a more vicious and mendacious reflection on the American profession could hardly be vouchsafed. To those of us who have spent much time abroad and who are able, therefore, unlike our ignorant critic, to express an opinion on the subject, the American medical profession *per se* stands on an ethical plane as to advertising, at least as high as that of any European country, and we could point to latitudes which, freely enjoyed by physicians elsewhere, would, in this country, promptly cause the offender to be ostracized. Behring and Ehrlich, for example, would not have maintained their professional standing in the United States; had Flexner protected his serum for cerebrospinal meningitis by patent, not a medical society would have kept him in its ranks. American physicians have avoided notoriety to such a degree, in fact, that the public, in the opinion of many, is increasingly becoming the prey of charlatans, of cureals, of a multitude of ignorant sects, etc., which take advantage of the silence of the trained medical man to parade their so called cures in the newspapers in order to exploit suffering. Even the lay press is severely criticizing the austere attitude of the American medical profession in this connection. An editorial writer in *World's Work*, of which Mr. Walter H. Page, our ambassador to Great Britain, is editor, remarked in a recent issue, for example: "Physicians in large and reputable practice and even laboratory workers in scientific institutions, have fled from popular writers as from

contamination. In taking this attitude, they have been thinking only of themselves. They have feared endangering their personal standing by doing something which is vaguely looked upon as 'unethical' and 'unprofessional.' That they might be rendering their greatest service to humanity by taking reputable and intelligent agencies of publicity into their confidence and assisting them to inform their readers accurately in matters of public health has apparently not occurred to them. . . . Many enlightened physicians now recognize these facts. Whether or not the American Medical Association removes the bars on publicity, common sense is already doing so."

But the fact *is* being recognized. With due dignity, the public is being familiarized with all that which, in matters medical, will subserve its welfare. It is in keeping with this program that last Sunday, fifty-two pulpits in Philadelphia were occupied by physicians from various parts of the country. Such topics as the Health of Children and Its Influence in Moral, Physical ,and National Development; Save the Babies! A Physician's Duty to the Public, Social Conditions as They Affect Daily Life, a New Health Gospel; the Socialization of Public Health; Mental Hygiene in Relation to Disease; Health as an Asset; Social Responsibilities Arising from Medical Progress; How to Improve the Physical, Mental, and Moral Condition of our School Children, etc., they were selected and treated in such a way as to eliminate all thought or possibility of self advertising, the sole aim being to enhance public welfare. Another laudable step in this direction, to be reviewed in one of our future issues, is being taken by the Philadelphia County Medical Society and the Public Ledger of the same city. It is not by self advertising that the American profession has sinned, if at all; it is by obeying beyond safe limits the requirements of professional dignity.

PROPOSED EXTENSION OF THE FUNCTIONS OF THE PUBLIC HEALTH SERVICE.

On May 18th a bill was introduced in Congress to create two more divisions in the United States Public Health Service, one of Rural Sanitation, and one of Mental Hygiene. As the Public Health Service is already empowered by law to investigate the causes of diseases anywhere within the limits of the United States and its possessions the introduction of this new bill apparently looks rather to the systematization of work already authorized than to an increase in scope. This is especially true in regard to rural sanitation. The work already undertaken by the service in the investigation of pellagra and malaria, as well as in the hookworm disease surveys, is, strictly speaking, a work of rural sanitation. In the matter of mental hygiene, the extension of function is more obvious. So far, the Public Health Service has done comparatively little in this field, except in connection with the examination of immigrants, and there is no field of work in greater need of correlation. The National Committee for Mental Hygiene has given great aid to various State societies and has helped in many ways to procure, in the different States, uniformity of legislation relative to the insane. It has also done much to ameliorate the condition of the inmates of asylums. But this committee has neither Federal nor State support; it depends upon private philanthropy for its very existence. If some permanent body exercised a similar function, carrying with it the authority of the Public Health Service, the field of usefulness could be much extended. Moreover, the creation of a new division which had mental hygiene for its sole work would stimulate the formation of many local organizations having the same object in view. The division could then be a sort of clearing house for the work of the privately supported societies and committees, and mutual cooperation would exist among bodies of this kind, much as it already exists between the United States Public Health Service and State boards of health.

As the proposed new bill calls for no expenditure of money, but serves only to direct the manner in which some of the money already appropriated for public health matters shall be spent, it is not likely that it will meet with any serious opposition.

BERIBERI IN THE UNITED STATES.

That the United States has to contend not only with the diseases of the so called temperate climate, but also with those supposed to be peculiar to the tropics, is being brought before us constantly. Plague is now endemic along certain portions of the Pacific Coast, tropical dysentery in the southern part of the United States, typhus fever in Texas, and Brill's disease in the north, to say nothing of leprosy, yellow fever, and malaria. To this list can be added beriberi, which has been reported in a number of prisoners in the county jail at Elizabeth, New Jersey. H. B. Parker, in the *Public Health Reports,* briefly summarizes the conditions that he was detailed to investigate. He found three cases which on examination proved to be beriberi, and the jail physician informed him that during the past three years he has tabulated twenty-two

cases of jail edema, cases now recognized to be beriberi. On careful inquiry it was found that there is a history of periodical recurrence of the disease during the past ten or fifteen years. It was stated, also, that at least eighty per cent. of all prisoners who serve more than three months acquire the disease.

As most of the cases were probably among native Americans, it seems that the relation of rice to the disease cannot be very close. It appears, likewise, that the causative factor is probably a living entity, as otherwise the acquisition of the disease by newcomers would be difficult to account for. From the foregoing we conclude that here is a splendid opportunity to investigate both the cause of the disease and the method by which it is transmitted.

THE CHILD AND THE CINEMATOGRAPH

The newspaper discussion over the so called white slave films and the legal decision that such pictures were not fitting for public exhibition has cast the limelight on what are popularly called "movies," from the standpoint of morality. But apart from the question as to whether certain films offend against the tenets of decency and are thus a means of moral injury to the young, the point arises in regard to their effect upon the health. In spite of inspection, many of these halls are decidedly ill ventilated and frequently overcrowded to an extreme extent. If a popular entertainment is being given, every seat is occupied and persons are standing four and five deep; space is economized to the greatest extent. It seems obvious that under such conditions, children who are present must suffer considerable injury to health.

In all civilized countries the cinematograph has taken root and flourishes exceedingly and already in Europe due attention is being paid to the possible influence on the morals and the health of its young patrons. In Germany where a paternal government regulates the management of public places and lays down hard and fast rules as to who may have the privilege or right of entry, it is ordained that no one under the age of fifteen years may visit a cinematograph entertainment. In Great Britain, where exhibitions of this kind have made unparalleled progress, steps have been taken recently to discover the effect on the health of school children habitually attending these shows. As a result of an inquiry just made among its head teachers by a Lancashire elementary education subcommittee, it was determined that the exhibitions are physically detrimental to the scholars owing to late hours, loss of sleep, and bad atmosphere; they become less thrifty, acquire an unhealthy thirst for pleasure, and are disinclined for steady work and effort. It is also stated that their eyesight is sometimes injured. In this country and in England, the moving pictures are more largely patronized by the young than in any other countries. There are no restrictions with regard to age, and therefore there can be little doubt that habitual attendance by children, particularly at the cheaper places, results in moral and physical evil effects; it is a matter which may be commended to the consideration of municipal and State authorities. The opinion of the medical profession on the subject might not be out of place. More rigid inspection and certain restrictions with regard to admittance to the nickel cinematograph exhibitions seem to be called for. Now that the great theatrical combinations are taking up the "movies," the children of the well-to-do will be free from danger as far as their physical health is concerned; but the cheaper houses will need more careful inspection than ever. They should be regulated, for their suppression would be a calamity.

VAGINAL CASTS AFTER QUACK TREATMENT.

A physician in one of our local societies recently exhibited a curious looking cast of the vagina obtained from one of his patients who had been using a strong astringent injection given her by an advertising "specialist" in the diseases of women. An editorial comment in the *British Medical Journal* for June 6, 1914, refers to the report of Doctor Le Lorier, of Paris, on several similar cases following exactly similar treatment. One of his patients, about to undergo an operation, had been advised by a quack to use a powder which Doctor Le Lorier found to be alum; this had caused extensive exfoliations of the vaginal mucosa with the rugæ well marked, which were triumphantly exhibited by the woman as fragments of a fibroid tumor. In another case, the injection of alum by a patient suffering from an ovarian cyst had caused the same exfoliation in the form of vaginal casts and these were believed by the patient, who had several big bottles full of them, to be portions of the cyst. It appears that two such casts are preserved in the museum of the Royal College of Surgeons of England. Our contemporary remarks on the apparent lack of discomfort attending the injection of very strong solutions of alum or zinc.

VENEREAL DISEASE IN GREAT BRITAIN.

The *Lancet* for June 6, 1914, reports on the evidence of Sir William Osler, Regius Professor of Medicine at the University of Oxford, before the Royal Commission on Venereal Diseases. Among other things our distinguished colleague observed that the official statistics published by the registrar

general were totally inadequate to represent the actual incidence of venereal diseases; he thought it safe to say that of the killing diseases syphilis came third or fourth. Gonorrhea he regarded as one of the great disabling diseases, causing an enormous amount of ill health and playing a large part in the production of blindness. Every general hospital should provide both outdoor and ward treatment for these diseases; it was here that medical students should be instructed, making a special course of lectures unnecessary. Sir William was in favor of the compulsory notification of venereal disease, also of instruction of the public, but this should be given by a competent medical man, with charts and diagrams, etc., and not by a layman. Such lectures might be given to the senior students of high schools, in universities, and in large institutions with many employees. Sir William was not in favor of teaching sex hygiene or physiology to young children.

News Items.

Change of Address.—Dr. Bernhard A. Fedde to 454 Ninth Street, Brooklyn.

Meetings of Medical Societies to Be Held in Philadelphia during the Month of July.—Tuesday, July 7th, Physicians' Aid Association, directors; Tuesday, July 28th, Medicolegal Society.

American Society for Physicians' Study Travels.—Realizing the magnitude of the proposed trip for 1915, the society has decided to abandon the contemplated tour this year. A meeting of the society was held in Atlantic City on Thursday, June 25th.

Another Gift to Yale Medical School.—Announcement is made of a gift of $400,000 to the Yale Medical School by members of the Lauder family, of Pittsburgh, Pa., and Greenwich, Conn., to be known as the Anna M. R. Lauder Fund, in memory of the late Mrs. George Lauder. It is stipulated that the chair of public health be endowed from the gift; otherwise there are no conditions.

Maine Medical Association.—The following officers were elected at the annual meeting of this association, held in Portland on Wednesday and Thursday, June 11th and 12th: President, Dr. H. L. Bartlett, of Norway; first vice-president, Dr. A. L. Stanwood, of Rumford Falls; second vice-president, Dr. L. A. Dascombe, of Skowhegan; secretary, Dr. J. B. Thompson, of Portland; treasurer, Dr. E. W. Gehring, of Portland.

Health Department to Instruct by Moving Picture Exhibitions.—The Department of Health of the City of New York, assisted by the Committee on the Prevention of Tuberculosis of the Charity Organization Society and the Tuberculosis Committee of the Brooklyn Bureau of Charities, will place before the public an entertaining and instructive program of four motion pictures in a series of twenty exhibitions. Twelve of these exhibitions are to be given in Manhattan and the Bronx, six in Brooklyn, and two in Queens.

American College of Surgeons.—At a meeting held in Philadelphia on Monday, June 22d, attended by eight hundred members of the college, a campaign was started to raise a half million dollar endowment fund for the establishment in Washington, D. C., of a permanent home for the institution. Dr. J. M. T. Finney, of Baltimore, president of the college, at the close of the meeting announced that subscriptions amounting to more than $100,000 had been received inside of an hour, and he believed that the fund would reach at least $1,000,000. One thousand one hundred fellowships were conferred, bringing the total membership up to over three thousand. Dr. Thomas Addis Emmet, of New York, was elected an honorary fellow.

American Climatological Society.—The thirty-first annual meeting of this society was held in the Hotel Chelsea, Atlantic City, on Friday and Saturday, June 19th and 20th, under the presidency of Dr. James M. Anders, of Philadelphia. San Francisco was selected as the place of meeting in 1915 and officers to serve for the ensuing year were elected as follows: President, Dr. Henry Sewall, of Denver; vice-presidents, Dr. A. L. Stone, of Boston, and Dr. James Alexander Miller, of New York; secretary and treasurer, Dr. Guy Hinsdale, of Hot Springs, Va. (re-elected), and the retiring president, Dr. James M. Anders, of Philadelphia, a member of the executive board.

Fund from General Education Board Turned Over to Johns Hopkins Medical School.—Final arrangements have been made to turn over to the Johns Hopkins Medical School the gift of $1,500,000 to establish the William H. Welch Endowment for Clinical Education and Research. It is said that by July 1st Doctor Welch will be ready to begin work. The Johns Hopkins Medical School is the first medical institution in the country to receive money for research work from the General Education Board, but in the last two weeks it has been decided to give $750,000 to the Washington University at St. Louis and $500,000 to Yale University.

A Postgraduate School of Medicine Organized in New Orleans.—The charter of the New Orleans Post-Graduate School of Medicine was filed on Thursday, June 11th. The organization is composed of prominent members of the medical profession of New Orleans not connected with Tulane University, and its object is to offer to graduates in medicine a postgraduate course in medicine, surgery, and the specialties. The first board of directors is composed of Dr. Homer Dupuy, president; Dr. William Kohlman, vice-president; Dr. Joseph A. Danna, secretary; Dr. Oscar Dowling, Dr. O. L. Pothier, Dr. Abe Nelken, Dr. J. M. Elliot, Dr. C. G. Cole, Dr. T. J. Dimitry.

American Urological Association.—At the thirteenth annual meeting of this association, held in Philadelphia on Thursday, Friday, and Saturday, June 18th, 19th, and 20th, under the presidency of Dr. J. Bentley Squier, of New York, the following officers were elected: President, Dr. W. E. Lower, of Cleveland; vice-president, Dr. H. A. Fowler, of Washington, D. C.; secretary, Dr. N. L. Sanford, of Cleveland; treasurer, Dr. J. L. Gardner, of Buffalo. The following were named to serve on the executive committee: Dr. James C. Burt, of Pittsburgh; Dr. U. H. Young, of Baltimore; Dr. John G. Keller, of Toledo; Dr. J. T. Windell, of Louisville, and Dr. Victor Vecki, of San Francisco. It was voted to hold next year's meeting in Baltimore.

American Orthopedic Association.—At the twenty-eighth annual meeting of this association, held in Philadelphia on Friday and Saturday, June 19th and 20th, under the presidency of Dr. Gwilym G. Davis, of Philadelphia, the following officers were elected: President, Dr. G. B. Packard, of Denver; first vice-president, Dr. J. D. Griffith, of Kansas City; second vice-president, Dr. W. S. Baer, of Baltimore; treasurer, Dr. John L. Porter, of Chicago; secretary, Dr. Ralph R. Fitch, of Rochester, N. Y. Dr. Joel E. Goldthwaite, of Boston, was appointed a delegate to the Congress of American Physicians and Surgeons. Dr. H. Augustus Wilson, of Philadelphia, was elected a member of the executive committee which will decide upon the time and place of next year's meeting.

Personal.—Dr. Russell Bellamy, of Wilmington, N. C., has been elected an honorary member of the Italian Physico-Chemical Academy, at Palermo, Italy.

Dr. Godfrey R. Pisek, of New York, received the degree of Sc. D., from the University of Vermont, at the annual commencement exercises held in Burlington on Wednesday, June 24th.

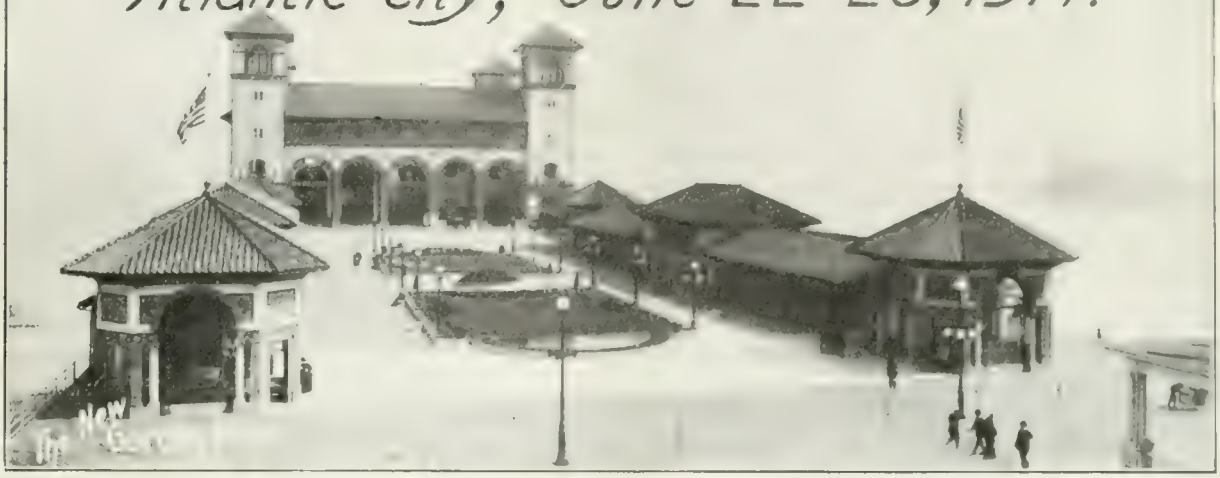
Dr. William L. Dudley, dean of the medical department and director of the chemical laboratories of Vanderbilt University, Nashville, Tenn., had conferred upon him the degree of LL. D., by the University of Cincinnati, at the annual commencement held on Saturday, June 13th.

Dr. Edward A. Spitzka, of Philadelphia, has resigned as professor of anatomy at Jefferson Medical College. It is said that Doctor Spitzka intends coming to New York to take up the practice of his father, the late Dr. Charles Edward Spitzka, who died last January.

The American Medical Association

Sixty-Fifth Annual Meeting

Atlantic City, June 22-26, 1914.



Introduction.

The meeting was the largest in the history of the Association. Members to the number of 3,578 had registered when the opening took place in the Apollo Theatre on the boardwalk.

The members and their wives greeted the retiring president, Dr. John A. Witherspoon, and the president elect, Dr. Victor C. Vaughan. Others were received with applause—the Attorney General of New Jersey, Honorable John Westcott, representing the Governor; the past presidents, among whom were Doctors James B. Murphy, C. A. L. Reed, Henry O. Marcy, Wm. C. Gorgas, and Abraham Jacobi; Honorable William Riddle, Mayor of Atlantic City; and Enoch Hollingshead, President of the Medical Society of New Jersey.

Formal Opening of the Session

Doctor Witherspoon called the meeting to order, and after the invocation by the Rev. Henry Merle Millen, introduced the Mayor, who extended a hearty welcome to the officers and members of the Association and their wives. He said that the success of the city was due to the physicians.

Dr. Enoch Hollingshead, on behalf of the Medical Society of New Jersey (the oldest State medical society in America), greeted the members of the Convention, and extended the hospitalities of the local members.

On behalf of the ladies, Dr. William E. Darnell, Chairman of the Local Committee of Arrangements, invited the gentlemen to the Atlantic City Yacht Club.

The President then introduced the Honorable John Wescott, Attorney General of New Jersey, who welcomed the members of the Association, in the name of the Governor.

Address of the Retiring President. Doctor Witherspoon acknowledged the words of welcome and replied that the American Medical Association stands for fight against everything calculated to destroy the people. As the retiring president, he felt it a great honor to present a gold medal, in behalf of the Association, to Dr. William Crawford Gorgas, sanitarian, whose genius made possible the construction of the Panama Canal; a man who dared to do right for the salvation of the mass of mankind.

Doctor Gorgas, in reply, said he received it in part for those who aided him in the Canal Zone.

The President, in introducing President-elect Dr. Victor C. Vaughan, said that he considered it a great honor to be preceded in office by such a genius as Doctor Jacobi and followed by such a great man as Doctor Vaughan.

President's Address. This address appears in full, through the courtesy of the President, in this issue of the Journal, p. 1265.

The conclusion of the presidential address was greeted by prolonged applause, and the formal opening of the sixty-fifth annual meeting of the American Medical Association was concluded.

The Headquarters and Meeting Places: The various sections had headquarters where all who were interested might congregate.

Practice of Medicine—Hotel Dennis. St. Paul's Church.

Pharmacology and Therapeutics—Hotel Dennis. Grammar School Gymnasium.

Preventive Medicine and Public Health—Hotel Shelburne. St. Paul's Church.

Pathology and Physiology—Hotel Shelburne. Play Room, Hotel Dennis.

Surgery—Hotel Chalfonte. Morris Guards' Hall.

Orthopedic Surgery—Hotel Chalfonte. G. A. R. Hall.

Obstetrics and Gynecology—Haddon Hall. Morris Guards' Hall (Second Floor).

Genito-urinary Surgery—Hotel Alamac. Odd Fellows' Hall.

Stomatology—Craig Hall.

Ophthalmology—Hotel Traymore. Parochial School (Third Floor).

Laryngology, Otology, and Rhinology—Hotel Brighton. Ascension Church (Guild Hall).

Nervous and Mental Diseases—Hotel Brighton. Brighton Casino.

Diseases of Children—Seaside Hotel. Seaside Hotel (Play Room).

Dermatology—Seaside Hotel. Hotel Chalfonte.

Hospitals—Marlborough-Blenheim Hotel. Park Avenue Hall, Marlborough-Blenheim.

The House of Delegates.

Morning Session.

MONDAY, JUNE 22ND.

The members of the House of Delegates assembled in the Solarium of the Traymore.

Dr. JOHN A. WITHERSPOON, the president, called them to order at 10.15 a. m. The report on credentials was read and, by motion, received, and the members were duly accredited.

The members of the House of Delegates were as follows:

STATE DELEGATES.

Alabama—3. E. D. Bondurant, Mobile. H. T. Inge, Mobile. W. H. Sanders,* Montgomery.

Arizona—1. John E. Bacon, Miami.

Arkansas—2. William V. Laws, Hot Springs. Robert Caldwell,* Little Rock.

California—3. George Hare, Fresno. V. G. Vecki, San Francisco. H. Bert Ellis,* Los Angeles.

Colorado—2. W. A. Jayne, Denver. L. H. McKinnie,* Colorado Springs.

Connecticut—2. D. Chester Brown, Danbury E. J. McKnight,* Hartford.

Delaware—1. Henry J. Stubbs, Wilmington.

District of Columbia—1. G. Wythe Cook,* Washington.

Florida—1. John MacDiarmid,* DeLand.

Georgia—3. M. A. Clark, Macon. E. C. Davis,* Atlanta W. C. Lyle,* Augusta.

Hawaii—1.

Idaho—1 John N. Alley, Lapwai.

Illinois—9. A. M. Harvey, Chicago. A. M. Corwin. Chicago. J. A. Koch, Quincy. G. M. Armstrong,* Taylorville. J. W. Hamilton,* Mt. Vernon. F. C. Gale,* Pekin. W. L. Noble,* Chicago. C. P. Caldwell,* Chicago. Henry F. Lewis,* Chicago.

Indiana—4. F. B. Wynn, Indianapolis. C. S. Bond, Richmond. J. Rilus Eastman,* Indianapolis. Edwin Walker,* Evansville.

Iowa—3. J. C. Rockafellow, Des Moines. L. W. Littig,* Davenport. M. N. Boldeng,* Cherokee.

Canal Zone—1. T. W. Earhart,* Ancon.

Kansas—2. George M. Gray, Kansas City. M. F. Jarrett,* Ft. Scott.

Kentucky—4. J. W. Kincaid, Catlettsburg. A. T. McCormack, Bowling Green.

Louisiana—2. Louis Abramson,* Shreveport.

Maine—1.

Maryland—2. Hugh H. Young, Baltimore. G. Lane Taneyhill,* Baltimore.

Massachusetts—5. Hugh Cabot, Boston. C. P. Hooker, Springfield. J. B. Blake,* Boston. H. G. Stetson,* Greenfield. L. F. Woodward,* Worcester.

Michigan—4. C. E. Boys, Kalamazoo. L. J. Hirschman, Detroit. E. T. Abrams,* Dollar Bay F. C. Warnshuis, Grand Rapids.

Minnesota—2. W. A. Coventry, Duluth. J. W. Andrews,* Mankato.

Mississippi—2. S. W. Glass, Lyon. L. C. Feemster,* Tupelo.

Missouri—5. Robert M. Funkhouser, St. Louis. E. J. Goodwin, St. Louis. E. H. Miller,* Liberty. A. W. McAlester, Jr.,* Kansas City. H. L. Reid,* Charleston.

Montana—1. LeRoy Southmayd, Great Falls.

Nebraska—2. A. R. Mitchell, Lincoln. A. L. MacKinnon,* Lincoln.

Nevada—1. B. F. Cunningham, Reno.

New Hampshire—1. Irving A. Watson,* Concord.

New Jersey—3. W. S. Lalor, Trenton. Linn Emerson,* Orange. Edward Guion,* Atlantic City.

New Mexico—1. William R. Tipton,* E. Las Vegas.

New York—11. Henry L. Elsner, Syracuse. Floyd M. Crandall, New York. Edgar A. Vander Veer, Albany. Wesley T. Mulligan, Rochester. John C. Polak, Brooklyn. S. W. S. Toms, Nyack. D. H. Murray,* Syracuse. Wendell C. Phillips,* New York. James W. Fleming,* Brooklyn. J. C. MacEvitt,* Brooklyn. Charles H. Richardson,* New York.

North Carolina—2. J. Howell Way, Waynesville. H. A. Royster, Raleigh.

North Dakota—1. C. S. Crane, Grand Forks.

Ohio—6. B. R. McClellan, Xenia. W. J. Means, Columbus. E. O. Smith, Cincinnati. C. D. Selby,* Toledo. J. C. M. Floyd,* Steubenville.

Oklahoma—2. J. H. White, Muskogee. Claude A. Thompson,* Muskogee.

Oregon—1. Walter T. Williamson,* Portland.

Pennsylvania—9. Thomas D. Davis, Pittsburgh. William T. Hamilton, Philadelphia. John B. McAlister, Harrisburg. W. Rowland Davies, Scranton. Americus R. Allen,* Carlisle. J. Montgomery Baldy,* Philadelphia. Herbert B. Gibby,* Wilkes-Barre. Luther B. Kline,* Catawissa. Adolph Koenig,* Pittsburgh.

Philippine Islands—1.

Rhode Island—1. John W. Keefe,* Providence.

South Carolina—1. Edgar A. Hines, Seneca.

South Dakota—1. E. D. Putnam,* Sioux Falls.

Tennessee—2. Perry Bromberg,* Nashville. E. C. Ellett,* Memphis.

Texas—5. Holman Taylor, Fort Worth. C. A. Smith, Texarkana. Clay Johnson, Fort Worth. C. E. Cantrell,* Greenville. Marvin L. Graves,* Galveston.

Utah—1. Sol G. Kahn,* Salt Lake City.

Vermont—1. C. H. Beecher,* Burlington.

Virginia—3. J. Shelton Horsley, Richmond. W. E. Anderson,* Farmville. Kirkland Ruffin,* Norfolk.

Washington—2. L. L. Love, Tacoma.
West Virginia—1. John L. Dickey, Wheeling.
Wisconsin—3. J. J. McGovern, Milwaukee. Rock Sleyster, Waupun. J. M. Dodd,* Ashland.
Wyoming—1. M. A. Newell, Sheridan.

DELEGATES FROM THE SECTIONS.

Practice of Medicine—
Surgery—Fred Lund, Boston.
Obstetrics, Gynecology, and Abdominal Surgery—R. R. Smith, Grand Rapids, Mich.
Ophthalmology—Melville Black, Denver.
Laryngology, Otology, and Rhinology—Chevalier Jackson, Pittsburgh.
Diseases of Children—J. P. Sedgwick, Minneapolis.
Pharmacology and Therapeutics—Ray L. Wilbur, San Francisco.
Pathology and Physiology—Richard M. Pearce, Philadelphia.
Stomatology—G. V. I. Brown, Milwaukee.
Nervous and Mental Diseases—C. Eugene Riggs, St. Paul.
Dermatology—William A. Pusey, Chicago.
Preventive Medicine and Public Health—Morgan Smith, Little Rock.
Genitourinary Diseases—V. D. Lespinasse, Chicago.
Hospitals—Fred A. Washburn, Boston.
Orthopedic Surgery—John Ridlon, Chicago.

DELEGATES FROM GOVERNMENT SERVICES.

United States Army—Charles Richard.
United States Navy—Robert M. Kennedy.
United States Public Health Service—John W. Kerr.

The minutes of the Sixty-fourth Session were presented in print to the members; the reading was, by motion, dispensed with, and the minutes were approved.

President's Address. President WITHERSPOON said that it had been the greatest pleasure and honor of his life to be allowed to preside over such a fine body of men as those who formed the House of Delegates. He thanked the members of the House for the honor, and excused himself from further remarks on account of his recent illness.

Report of Secretary. Dr. ALEXANDER R. CRAIG stated that the Fellowship of the American Medical Association on May 1, 1913, was 37,013. During the past year, 344 Fellows had died, 1,553 had resigned, 491 had been dropped as not eligible, 457 had been dropped for nonpayment of dues, and 29 had been removed from the rolls on account of being reported "not found," making a total of 2,850 names to be deducted from the Fellowship roll. There had been added 5,990 names to the Fellowship roll, of which 4,416 were transferred from the subscription list. The Fellowship of the American Medical Association on May 1, 1914, was 41,029, a net increase for the year of 3,116. This gain in the number of Fellows was due largely, as in previous years, to circularizing subscribers to the *Journal* who were eligible, urging them to become Fellows.

He also reported that since the last meeting of the House of Delegates, June 10, 1913, appointments had been made by the President as follows:

Committee on Mode of Commemorating the Completion of the Panama Canal, J. H. White, New Orleans, chairman, *vice* Isadore Dyer, New Orleans, resigned. William C. Braisted, U. S. N., *vice* Presley M. Rixey, U. S. N., resigned.

The late Dr. S. Weir Mitchell had been chairman of the Committee on Memorial to Medical Officers who Died in the Civil War. His death left a vacancy on that committee.

By motion, the reading of entire reports was dispensed with. Such parts should be read as the chairman of each committee might deem of special importance, with the addition of matter received since sending in the report.

Report of Board of Trustees. Dr. W. T. COUNCILMAN, Boston, chairman, addressed the delegates as follows: The past year had been distinguished by no unusual events in the association; all of the forms of activity by which it served the medical profession and the public had been marked by successful effort. Of all the activities of the American Medical Association, none had aroused more antagonism than those connected with the work of the Council on Pharmacy and Chemistry. Nevertheless, it was gratifying to note that there was a gradually increasing appreciation of its aims and objects and what it was accomplishing.

The work of the committee on a selected list of drugs had resulted in the publication of the book called Useful Drugs, which had already been adopted as a textbook by a number of our best schools; its adoption had been considered by the State licensing boards, one already having adopted it, and there is every indication that this enterprise will have a most beneficial effect. During the past year the laboratory force had been increased, so that in addition to the director of the laboratory, who was also secretary of the council, there were now employed three chemists, who devote their entire time to the work.

The original purpose for which the Council on Pharmacy and Chemistry was created was to investigate and enlighten the profession concerning the so called ethical proprietary medicines; that is, those sold through or prescribed by physicians. Ther- gradually developed a demand, on the part of the profession, and later, on the part of the public, for information regarding all proprietary medicines. The attempt to meet this had in course of time so broadened out that it had been necessary to create a new department—the Propaganda Department. This had become one of the most important phases of the association's work and it was rapidly increasing in scope and extent. One of the most encouraging features of the work done by the Propaganda Department was the interest it seems to have awakened on the part of the lay magazines and newspapers in censoring the advertisements of a medical or quasimedical nature that appear in their pages. There is a very evident desire on the part of the better class of lay publications to exclude from their pages fraudulent medical advertisements. A number of such publications are constantly referring to the Propaganda Department for information regarding the different preparations or devices whose manufacturers seek ad-

vertising space. Not a few newspapers are submitting medical advertising copy to the Propaganda Department.

This state of affairs contrasts strangely with the attitude of the majority of the so called independent medical journals. It is but rarely that inquiries come from these publications regarding the character of the advertisements of medicinal products they are carrying. It is an unfortunate fact that the effect of the work against frauds in medicine is more evident in lay than in medical journals; the writer of this report had several times had his attention called to this fact by laymen who sought an explanation for this strange condition.

The work of the Propaganda Department had been very greatly assisted by the interesting character of the literature it had published. The story of vice will always have an interest as well for the virtuous as for the vicious; the virtuous find in it the satisfaction which comes from the exposure of vice in others, the vicious in that they may follow or avoid methods according to the degree of success or failure which attends them. The philosopher also reads with interest, for the story tells him much of the ignorance and credulity of man.

On January 1, 1914, the cash capital, including bonds and certificates of deposit, was $140,207. While this might have looked large ten years ago, it is a very small reserve for a business of nearly half a million a year. The American Medical Association should have a reserve fund of at least $300,000 in order safely to meet reverses that may come. In conclusion, the Board of Trustees suggested this thought: No other organization was doing as much altruistic work as the American Medical Association at the present time, for seventy-five per cent. of the expenditure to which they had been referring was absolutely for altruistic purposes. All this work was made possible by the profits from the JOURNAL. And these profits came from the application of business principles in its management and the fact that the association finally owned a splendidly equipped modern plant, making it possible to do its printing and publishing at a much lower cost than would be the case under other conditions.



VICTOR C. VAUGHAN, M.D.,
Of Ann Arbor, Mich., president of the American Medical Association.

Report of Treasurer, Dr. W. A. PUSEY's report was referred without reading. It showed a balance on hand of $140,523.72 in bonds, certificates of deposits, and checking account.

Reference Committees. President WITHERSPOON announced the personnel of the Reference Committees as follows:

1. *Committee on Section and Section Work*—Hugh Cabot, Massachusetts. Melville Black, Denver. W. T. Mulligan, New York. J. A. Koch, Illinois. F. C. Warnshuis, Michigan.

2. *Committee on Rules and Order of Business*—G. Wythe Cook, District of Columbia. C. H. Beecher, Vermont. William R. Tipton, New Mexico. G. Lane Taneyhill, Maryland. G. V. I. Brown, Milwaukee.

3. *Committee on Medical Education*—H. Bert Ellis, California. Fred Lund, Boston. W. A. Sanders, Alabama. Adolph Koenig, Pennsylvania. C. D. Shelby, Ohio.

4. *Committee on Legislature and Political Action*—E. J. Goodwin, Missouri. Edwin Walker, Indiana. Hugh Young, Maryland. E. J. McKnight, Connecticut. Holman Taylor, Texas.

5. *Committee on Hygiene and Public Health*—John W. Kerr, U. S. P. H. Service. W. S. Lalor, New Jersey. Morgan Smith, Little Rock. A. M. Harvey, Illinois. Frank L. Gilbert, Maine.

6. *Committee on Amendment to Constitution and Bylaws*—W. A. Jayne, Colorado. Floyd M. Crandall, New York. Charles Richard, U. S. A. Claude A. Thompson, Oklahoma. Perry Bromberg, Tennessee.

7. *Committee on Reports of Officers*—Thomas D. Davis, Pennsylvania. E. A. Hines, South Carolina. Robert M. Kennedy, U. S. N. A. R. Mitchell, Nebraska. Rock Sylvester, Wisconsin.

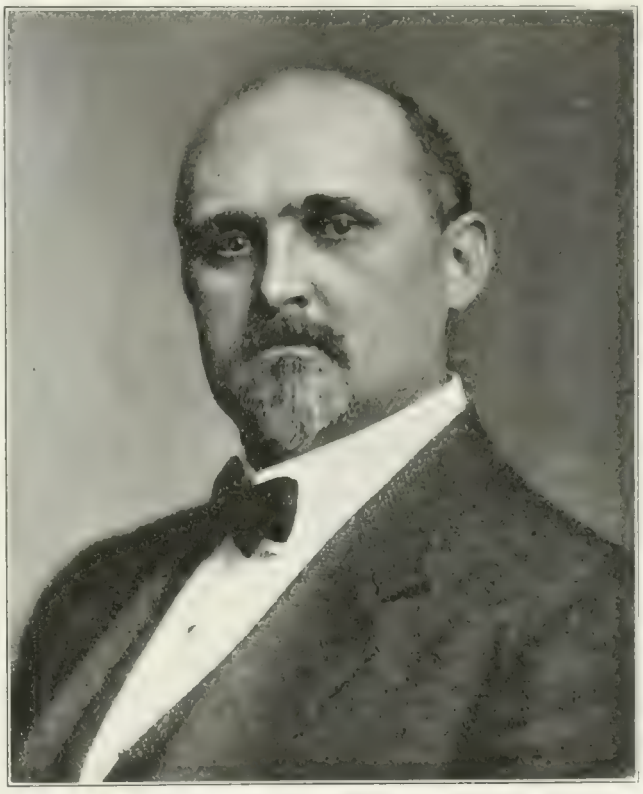
8. *Committee on Credentials*—D. Chester Brown, Connecticut. Henry L. Elsner, New York. H. A. Royster, North Carolina. B. R. McClellan, Ohio C. E. Cantrell, Texas.

9. *Committee on Miscellaneous Business*—A. T. McCormack, Kentucky. W. E. Anderson, Virginia. L. J. Hirschman, Michigan. W. C. Lyle, Georgia. A. W. McAlester, Missouri.

Report of the Judicial Council. Dr. ALEXANDER LAMBERT, addressing the members, said: The Judicial Council had thoroughly considered the

appeal for funds from the Home for Widows and Orphans of Physicians in Baltimore, and felt that this philanthropy should not be undertaken by the American Medical Association. It should be left to the local constituent State associations, or, better, to the local branches.

If it was the desire of the House of Delegates to make the Judicial Council amount in reality to a dignified court to which could be referred disputes between individuals or between associations, there must be some definitely stated conditions under which the appeal to the Judicial Council may be made. At present the Judicial Council had only original jurisdiction in cases in which the American Medical Association or one of its constituent associations was a party. There was no appellate function which it could exercise. Any case which had come to the Council in which a Fellow of the Association had demanded protection from what he considered an unjust decision of his State association, the Judicial Council had been forced to ask, as a favor, the reconsideration of the case in which an appeal would naturally have come to the Council if it had had appellate powers. There is no appeal open to any Fellow in the American Medical Association by which he may protect his Fellowship in the Association if he deems himself unjustly condemned and deprived of that Fellowship. This is not right; it is not reasonable; and such conditions should not be permitted to exist. For this reason the Judicial Council asks of the House of Delegates appellate jurisdiction in the cases mentioned above.



JOHN A. WITHERSPOON, M.D.,
Of Nashville, Tenn., retiring president of the American Medical Association.

The Judicial Council called the attention of the House of Delegates to the subject of advertising in the public press by physicians. The Judicial Council finds that the profession is restive under the flagrant misuse of the public press by certain members of the profession and certain prominent and non-prominent Fellows of the American Medical Association itself.

The Judicial Council recommended the following resolution:

Resolved, That it is the sense of the House of Delegates of the American Medical Association that each county society should constitute a publicity committee whose duties shall be to give to the daily press accurate information on all medical matters of interest to the public, that this shall be freely given without the mentioning of names or from whence the information comes, and that this committee shall further act in an advisory capacity to all physicians of its society in questions relating to publications other than in the medical press. Be it further

Resolved, That the Secretary of the American Medical Association be instructed to forward this resolution, with the reasons calling it forth, to the Secretary of each constituent State association, with the request that it be transmitted to each component society of that constituent association.

TUESDAY, JUNE 22D.

Afternoon Session.

After the roll call, the minutes of the morning session and the supplementary report of the committee on credentials, were read.

Committee on Scientific Exhibits. Dr. FRANK B. WYNN recommended an appropriation of $1,000 for scientific exhibits for the coming year. The exhibits of former years were in the nature of a collection of pathological specimens. They have gradually improved until now, when they are more practical in their nature.

Report of Committee on Nomenclature and Classification of Diseases. Dr. CRESSY L. WILBUR stated A second edition of the Physicians' Pocket Reference to the International List of Causes of Death had been sent by the Bureau of the Census to all physicians in the United States. Copies had also been placed, through their instructors, in the hands of senior medical students. The booklet contained a list of undesirable terms, framed as a result of the conferences of this committee, during Doctor Foster's chairmanship, with committees of other national organizations. Wrong terms are thus brought forcibly to the attention of physicians throughout the country with the recommendation that they be disused. Marked copies of this list were sent to physicians employing such terms in making out certificates of death by the census, State and city registration authorities, and sometimes by other agencies in connection with the request for more definite information. It was apparent, therefore, how readily a standard nomenclature might be made

available for the improvement of medical reports.

Report of Committee on Anesthesia. Dr. James T. Gwathmey, in the absence of the chairman, addressed the members: The Committee on Anesthesia had undertaken the preparation of a comprehensive and critical review of the entire subject of anesthesia. The information therein would be made easily accessible to all physicians either by publication in the *Journal* of the association or in pamphlet form.

Report of Council on Medical Education. Dr. Arthur D. Bevan, chairman, said: The results that have followed the reorganization of the American Medical Association and the steady efforts of this permanent council have more than surpassed the highest hopes of those who urged its organization. Instead of 160 medical colleges, there are now about 100. Instead of only four medical colleges holding to fairly high entrance standards, now there are eighty-two colleges which, after October 1, 1914, will require for admission one or more years of collegiate work. In a number of cities, instead of there being two to seven weak medical colleges, there is now, through mergers, but one college in each instance, which is invariably a stronger, better equipped institution. Instead of only a few medical colleges being provided with expert laboratory teachers, now at least eighty have ten or more such teachers.

The progress of the decade has not been limited, however, to medical colleges. In State medical practice acts and in the State board rulings regulating the practice of medicine there has also been marked improvement. In 1904 the laws of only twenty States made provision for preliminary education and in most of these the requirement was low or of little effect. Now forty-five States have definite standards and of these thirty-seven require a high school or higher education. In 1904 not a single State had adopted more than a high school education for the minimum requirement; now eighteen State boards have adopted at least one year of collegiate work as the minimum preliminary requirement, and of these seven have adopted the requirement of two years of college work.

It is desirable to pay a tribute to the medical colleges of the South for the remarkable manner in which the problems of medical education have been grappled with. Although they have had apparently greater obstacles to work against than were found in other sections of the country, nevertheless it seems these hindrances are rapidly being overcome. They still have to deal with a very large problem, that of preliminary education, but even this is being firmly and admirably met. As to requirements for admission, of the twenty-four colleges in the southern section, eighteen, or seventy-five per cent., are already requiring the one year of college work or have announced the requirement to begin this fall. The most serious problems of medical education are no longer to be found in the South, but rather in some of the large cities of the East and North.

On the whole, medical schools have not been able to secure adequate financial support from private endowments. A comparative study of the medical schools of the world gives no reason to expect adequate support for medicine from private endowment. Nor is it desirable that medicine should depend on private support. There will always remain the great privilege and great opportunity for private endowment to assist medical education, medical research ,and medical charities, but the time has now come when the medical profession should no longer look to private endowment but to the States for the support of medical education and research. In the interest of the people adequate State support for medicine is essential in order that medicine may properly perform its great function to the State and that the people may benefit from the great possibilities offered by preventive medicine, intelligent medical practice, and medical research. In the House of Delegates every State of the Union was represented, and it was hoped that every delegate will carry back to his State this new gospel of American Medicine—"Medicine a Function of the State."

In clinical work the head of a department and his associates must be three things: first, great physicians in their special field; second, trained teachers; and third, research workers. The medical school very properly demands that their clinical teachers be men who are recognized as authorities in their special fields, both by the profession and the community. This problem of clinical teaching had been taken up during the year by the General Education Board and, as a result, an interesting experiment was to be tried at Johns Hopkins and possibly at one or two other places. The General Education Board had given Johns Hopkins $1,500,000 endowment with which to pay salaries to the departments of medicine, surgery, and pediatrics. The position was taken in this experiment that the head of a clinical department should be given a very large salary and should receive no fees from private practice. The sweating of the scientific men who have devoted their lives to teaching and research on miserable salaries was notorious. Advantage had been taken of the fact that their scientific enthusiasm would hold them to their work, and they were often as underpaid comparatively as the workers in a sweat shop.

In the adoption of the hospital year of study, the council urged that it be made compulsory for students entering medical schools in October, 1914, which would make it apply to all graduates of 1918 and thereafter. This gave ample time for complete investigation of the hospital situation of the country; time for each school to put itself in touch with the hospitals within its sphere of influence and to provide opportunities for its graduates.

Report of Committee on Red Cross Medical Work. Dr. George M. Kober, in his report, stated: In February, 1913, a communication was addressed to the secretaries of 1,150 component societies affiliated with the American Medical Association. The circular letter set forth the fact that the American Red Cross desires to enlist the sympathy of the medical profession in general and the active cooperation of representative men of that profession in time of disaster or other emergency which may occur in any section of our country. This communication pointed out that the object could be best attained by creation of committees on Red Cross aid.

Report of Council on Health and Public Instruction. Dr. HENRY B. FAVILL, chairman, stated that the plans of the council had developed to a point where a comprehensive program could be outlined. Three lines of action were proposed:

1. A thorough investigation of present public health conditions in the United States, with a view to securing more accurate information on all phases of the public health problem than is now available.

2. Education of the public by every possible means in order that the people may understand the enormous advances in scientific medical knowledge during the last generation and the possibility of utilizing such knowledge in the prevention of disease, the reduction of the death rate, and the prolongation of human life.

3. The crystallizing of educated public sentiment in necessary public health laws, regulations, and ordinances.

The object of the foregoing efforts of the council is the securing in concise and easily accessible form a comprehensive report showing the exact situation in the public health field, the agencies which are at work, what is being accomplished, how much it is costing, and who is paying for it. Such a survey seems to the council absolutely indispensable.

The activities inaugurated during the last three years have been maintained and developed. These are principally included under the following heads: 1, Press bureau; 2, speakers' bureau; 3, bureau of literature.

The plans for a medicolegal bureau, outlined in the report of last year, have been followed, the principal work at present being the collection of all available material on public health and health legislation. The assistance of secretaries of State boards of health, medical examining boards, officers of medical organizations, editors of medical journals, etc., has been solicited and much interesting and valuable material has been received. Affiliation has also been established with the legislative reference libraries. Pamphlets and other material have been exchanged with these and relations established.

The council conceives one of its most important functions to be the cultivation, as the official representative of the association, of friendly relations with other professional organizations and influential bodies. The problem before the association is exactly that which confronts the individual; namely, the necessity of convincing those whom they would influence of our sincerity and good faith. In a word, the association and the medical profession, like the individual, must acquire and maintain a reputation for breadth of mind and charity of spirit, as well as for ability and authority in its special field.

One of the most effective means of putting the association in a favorable light before the people had been the plan of furnishing speakers for the churches on the Sunday preceding the annual meeting of the association. This plan, inaugurated at Los Angeles in 1911, was particularly successful last year in Minneapolis and St. Paul. This year the small number of churches in Atlantic City and the close proximity of Philadelphia led the council to propose to the Philadelphia County Medical Society that speakers be furnished for the churches of Philadelphia on Sunday, June 21. This plan being endorsed by the officers of the Philadelphia County Medical Society, arrangements were made for furnishing a member of the association to deliver an address on a suitable public health topic for every church in Philadelphia desiring to avail itself of this opportunity. Speakers were provided for fifty churches, including organizations for all denominations and sects. In addition, through the courtesy and effective cooperation of the Right Reverand Edmond F. Prendergast, Archbishop of Philadelphia, suitable printed matter was placed in the hands of the 104 parish priests of the Roman Catholic churches in the diocese of Philadelphia. The educational influence of such work cannot be overestimated.

Report of Subcommittee on Uniform Regulation of Membership. Dr. THOMAS MCDAVITT, chairman, remarked that if the County, State, and American Medical Associations all adopted the calendar as the fiscal year, membership throughout the organization would expire simultaneously, and there would be no overlapping. This primary and fundamental provision has been generally adopted. The committee begged to be continued and given further time to evolve practical and effective uniformity.

The House of Delegates.

TUESDAY, JUNE 23D.

Afternoon Session.

The session was opened by Dr. Victor C. Vaughan, the newly inducted President of the association, who said that he considered it the highest honor of his life to preside over the House of Delegates, and that he hoped to give it his best service.

The Board of Trustees reported a communication which had been received from the Medico-Legal Society of New York, who desired their representative, Mr. Wm. Allen Brown, to present the offer of an address on Malpractice by Wm. J. Byrnes. Referred to the Judicial Council.

Dr. M. L. HARRIS, Chicago, stated that the inventor of a new instrument for determining the percentage of hemoglobin in the blood wished to turn it over to the Association for manufacture at the slightest cost, that it might be sold to the profession at a low price. Referred to the Judicial Council to report at present session.

Report of Reference Committee on Medical Education. A recommendation was made that the various State boards be advised to make a hospital internship of one year compulsory for those seeking a State Board license in 1919. 2. That medical colleges be asked to adopt and approve the requirements of the State boards. 3. That required preliminary training shall be collegiate and not high school. 4. That the article on need of clinical teachers be approved. 5. That the changes of rating in medical colleges made by the Council be approved. 6. That no rating higher than Class C be given to any medical college owned and operated by stockholders. 7. That the medical colleges be requested to adopt the pharmacopeia of 1910 and the metric system in their teaching.

Report of Reference Committee on Amendments, etc. Dr. Wm. A. Jayne, chairman, among other changes, suggested the creation of a new class of members—Affiliate Fellows. A communication was read from the Social Service Committee of the Philadelphia Conference of the M. E. Church, dated June 22nd:

"The Social Service Committee of the City of Philadelphia do hereby express our sympathy with and hearty commendation of the high ideals of public health and morals presented by the members of the American Medical Association in the churches of the city on Sunday, June 21, creating in the Christian conscience a responsibility for the health and physical condition of all humanity, and especially for those least able to protect themselves, is certainly a movement in the spirit of Christian brotherhood. We believe that such a gospel truly hastens the Kingdom and is a true ministry to mankind. Signed, (Rev.) John Watchorn, Secy."

American College of Surgery sought endorsement by the American Medical Association. Tabled.

Committee from Section in Surgery requested that abdominal surgery be restored from the Section in Obstetrics and Gynecology to the section in General Surgery. Referred.

Request for Section in Hydrotherapy was received and referred.

Addition to By-laws. Dr. J. S. Horsley offered an addition, as a part of the by-laws, under Chapter 11 the following: Section 15. *Manner of Preparing Programs of the Sections.* The Chairman and Secretary of the Section may fill not more than two thirds of the program of the section by special invitation. The rest of the program must be filled from articles submitted to the Chairman or Secretary of any section, at least three months before the date of meeting. The Chairman and Secretary shall select from the articles submitted those that appear most meritorious, and shall have full power to decide upon the value of any article submitted.

Expert Medical Testimony. Dr. Melville Black, Denver, presented for the Commission on Expert Medical Testimony of the Medical Society of the State of Pennsylvania, the need of legislation to cover the following points: 1. The formulation of a stricter definition of expert testimony; 2. The reasonable limitation of the number of experts to be called in any case; 3. The designation of such experts by the court upon nomination by the two parties; 4. The abolition of the hypothetical question; 5. The summoning by the trial judge of an expert of his own choice to serve as assessor, or as a witness to review the expert testimony already in, or as both; 6. The payment of expert witnesses out of the public treasury, at least in the first instance.

Meeting was adjourned to 2 p. m. on Thursday.

Afternoon Session.

WEDNESDAY, JUNE 24TH.

After the reading of the minutes and their adoption, the Committee on Credentials made a supplementary report.

The Board of Trustees referred a communication to the Judicial Council as to whether they could accept the patent right of an instrument and manufacture it for sale to the profession. The Judicial Council recommended that the Association be authorized to receive patents and manufacture the instruments so protected.

The various reference committees submitted reports.

The Reference Committee on Sections and Section Work recommended that the Section in Obstetrics, Gynecology, and Abdominal Surgery retain its title, and that the Section in Surgery be hereafter known as the Section in Surgery, General and Abdominal. The matter of filling the programs of the Sections, so as to give the younger members a chance, was referred back to the Committee, as they were not ready to recommend its adoption.

The **Judicial Council** presented a resolution that each County Medical Society be a publicity committee whose duties shall be to give to the daily press accurate information on all medical matters of interest to the public, that this should be freely given without the mentioning of names or from whence the information comes, and that this committee shall further act in an advisory capacity to all physicians of its society in questions relating to publications other than those in the medical press.

They decided that the invitation of Wm. J. Byrnes to deliver a lecture on Malpractice Suits was not a matter that could properly come before the House of Delegates.

Reference Committee on Health and Public Instruction reported for favorable action on the Palmer-Owen Child Labor bill.

Reference Committee on Sections and Section Work reported on the asked for Section in Hydrotherapy, that it be included under the Section in Therapeutics. They reported unfavorably as to a new Section in Gastrology and Enterology, and also on the division of sections into two groups—general and special. They recommended the creation of a committee of five to be charged with the investigation of section work to report at the next session.

The **Section in Surgery.** Dr. Fred Lund submitted a recommendation that Dr. Alexander Primrose, of Toronto, Canada, be elected an honorary member of the Association.

The **Section in Dermatology.** Dr. Wm. A. Pusey, Chicago, submitted the following resolution, which had been unanimously adopted by the Section on June 24th:

Whereas leprosy exists in many foci in this country and has been statistically shown to be on the increase, and

Whereas those afflicted with leprosy are being subjected to most inhuman treatment, and

Whereas many lepers are traveling in many States because of this inhuman treatment to which they are subjected, thereby constantly exposing the general public to the contagion, and

Whereas it is the duty of the Federal Government to control traffic between States, and

Whereas at the present time the care of lepers in the United States is a great economic burden upon the individual States, and is moreover of necessity inadequate from a medical and sanitary standpoint; therefore be it

Resolved, That the Association recommends the passage by Congress of a law providing for the comprehensive care and control of leprosy by the Federal Government. Referred.

The **Section in Laryngology, Otology, and Rhinology.** Dr. CHEVALIER JACKSON, Pittsburgh, submitted the following resolution:

WHEREAS many children are sacrificed by stricture of the esophagus caused by accidentally drinking caustic preparations; therefore be it

Resolved, that all cleansing preparations containing caustics, and sold by grocers and other merchants, be carefully labeled as to such contents, and that legislation looking to that end be requested. Referred.

The **Section in Surgery.** Dr. FRED LUND, Boston, recommended to the House of Delegates that all genitourinary articles be referred to that special section. Referred.

The **Section in Nervous and Mental Diseases.** Dr. E. E. SOUTHARD presented the following resolution:

Resolved, that it is the sense of the Section in Nervous and Mental Diseases, that the Council on Health and Public Instruction should be authorized, in accordance with the official rules governing such authorization, to consider and act upon the advisability of:

1. Including mental hygiene among the public health problems which said Council is investigating.

2. Taking steps to educate the public on all appropriate topics of mental hygiene, such as after care of the insane, the prophylaxis, through stimulation of the voluntary resort of psychopathic patients, and their temporary care in appropriate institutions, heredity, eugenics, syphilis, alcohol, occupational diseases, environmental causes, and other well established scientific data, said Council to use its Press Bureau, Speakers' Bureau, and Bureau of Literature to accomplish these ends.

3. Establishing a Subcommittee on Mental Hygiene, empowered to confer, and if desirable, cooperate with official and voluntary organizations, such as the National Committee on Mental Hygiene, State Committees on Mental Hygiene, both those so far organized and those to be organized in future, the Eugenics Record Office, the American Genetic Association, and the like. Referred.

The **Section in Preventive Medicine and Public Health.** Dr. MORGAN SMITH, Little Rock, presented the following resolutions:

WHEREAS the improvement and control of the milk supply of the country is one of the most important measures for the protection of the public health, and in order that this importance may be properly directed and the control intelligently exercised, it is necessary that milk standards be established and classes of milk defined; therefore be it

Resolved: 1. That the Section in Preventive Medicine and Hygiene of the American Medical Association urges the House of Delegates to approve of the establishment of uniform milk standards and the classification of milk, such as are embodied in the Report of the Commission on Milk Standards appointed by the New York Milk Committee and published in the Public Health Reports, August 22, 1913; and

2. That the Section on Preventive Medicine and Hygiene of the American Medical Association recommends that the House of Delegates urge the adoption of these standards and classifications by municipalities, so far as local conditions make that possible. Referred.

Resolved that the Council on Medical Education be requested to investigate the courses of instruction now leading to the degree of Doctor of Public Health and similar degrees and to outline minimum requirements for such courses. Referred.

Resolved that a committee be appointed to represent the American Medical Association in any conference that may be held or any action that may be taken looking toward the formulation and enactment of laws and regulations providing for the reporting of cases of disease and disability. Referred.

The **Section in Pharmacology and Therapeutics.** Dr. RAY L. WILBUR, San Francisco, presented the following resolution:

WHEREAS the pharmacopeia of the United States of America should be above all a book designed to protect the public health and prevent the exploitation of the sick and afflicted for profit; now, therefore, be it

Resolved, that the members of the Section in Pharmacology and Therapeutics of the American Medical Association request the House of Delegates to urge on the Revision Committee to make official in the pharmacopeia of the United States "corrosive mercuric chloride pastilles," so that physicians may not be compelled to prescribe the remedy under a proprietary name; and be it further

Resolved, that the Section endorse the form and description of corrosive mercuric chloride pastilles, as described by the German Pharmacopeia, namely of cylindrical shape, twice as long as thick, wrapped individually in paper bearing the name of the medicament, "Corrosive Mercuric Chloride Pastilles," and the word "Poison" in suitable and striking letters; and be it further

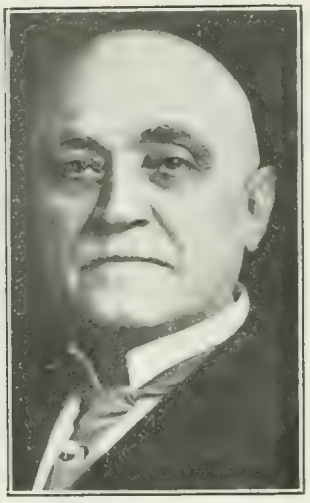
Resolved, that a copy of this resolution be forwarded to the Secretary of the American Medical Association, to the President, and to each of the officers of the United States Pharmacopeial Convention, and also to the Committee on Revision of the Pharmacopeia of the United States. Referred.

The **Committee on Legislation and Political Action.** Dr. [illegible], St. Louis, presented the following amendment to the Constitution and By-laws: That the initial meeting of the House of Delegates be held on the Saturday preceding the sessions of the American Medical Association.

Meeting [illegible] until Tuesday, June [illegible], 2 p. m.



CHARLES H. FRAZIER, M.D.,
Of Philadelphia, Chairman of Section in Surgery.



E. GUSTAV ZINKE, M.D.,
Of Cincinnati, Chairman of Section in Obstetrics, Gynecology, and Abdominal Surgery.

SECTION IN PRACTICE OF MEDICINE.

Will Sprue Become Endemic in the United States? Notes on Cases Invalided from the Tropics.—Dr. H. B. HIATT, of High Point, N. C., and Dr. WILLIAM ALLAN, of Charlotte, N. C., spoke of the frequency of the disease in the Orient and the greater possibility of a foothold being attained in the southern States, particularly in view of our newer relations with the East. Its chief habitat is central and southern China. Symptomatically sprue is chiefly a combination of stomatitis with gastrointestinal symptoms; flatulence, distension, large, loose, pasty stools, resultant loss of flesh and strength and secondary anemia, with tendency to relapse. Both fat and fatty acid are found in the stools, also meat fibres. The writers referred briefly to five cases, one of which had never been far away from home. The best results were obtained by a diet of skimmed milk and fruits; and monosaccharids, of which glucose was cited, are the most satisfactory among the sugars. Cold weather exercises a favorable influence. Of medicines, iron alone was given. There is no specific, therefore many drugs have been advocated by various observers. Finally, the value of alkalies and rest in bed was advocated. Various writers have referred to the similarity between sprue and pellagra, but the writers of the paper argue for their dissimilarity.

Dr. ROGER S. MORRIS, Clifton Springs, N. Y., asked if gastric analyses had been made.

Doctor HIATT stated that there was no constancy in the stomach findings, some having hyperacidity, others hypoacidity. He suggested that the morning diarrhea of the early cases is probably an expression of relaxation, accompanied by low blood pressure.

The Syndrome of Adrenal Insufficiency.—Dr. TOM A. WILLIAMS, of Washington, D. C., said the usual diagnosis in these cases is neurasthenia. He spoke of the necessity of eliminating organic factors of recognizable type when careful measures are employed. Those cases then manifesting marked asthenia with or without pigmentation, with very low blood pressure and without evidence of morbid entities on physical or laboratory examination, he regards as types of adrenal insufficiency. He cited three groups: 1. Those which improve or recover; 2, those on which no impress is made; 3, fatal cases. The fact that a certain proportion of patients recover when dried adrenal gland is employed in sufficient dose, he felt is indicative of the relationship between lowered glandular function and the symptom group narrated. He said it was essential to make both a psychic diagnosis and a differential diagnosis, this latter to separate adrenal insufficiency from secondary asthenic states due to various factors.

Dr. FRANK R. STARKEY, of Philadelphia,, expressed his belief that though these clinical states are spoken of as single gland abnormalities, they are essentially polyglandular, of which the most striking clinical condition is asthenia, adynamia. He doubted whether success would ever follow the use of a single gland substance given therapeutically. He stated, too, that gland substances should never be obtained from castrated animals, but from healthy animals which had not been spayed.

Dr. WALTER BLESSING, of Des Moines, Iowa, asked the physiological dose and cited a case under his own observation.

Doctor WILLIAMS agreed with Doctor Starkey that glandular extracts would probably be superior if taken from noncastrated animals. He had had some success with the single gland, but thought it possible that some of his failures might be ascribed to lack of proper glandular combination. He employed the ordinary commercial product, and while unable to state a definite dose in every case, felt that an attempt should be made, by increasing dosage, to meet the exigencies.

Neurasthenia and Tuberculosis (Concealed).—Dr GEORGE DOUGLAS HEAD, of Minneapolis, in an excellent paper narrated an array of symptoms commonly grouped under the term neurasthenia, and as such without known pathogenesis or pathology. He asked why such a diagnosis is made when it is so lacking in precision, without definite etiology, symptomatology, or pathology. His reasons for his views were: 1, Clinically, pure neurasthenics have tuberculosis which escapes detection; 2, no evidence of organic disease; 3, and though a definite diagnosis of tuberculosis may not be possible they may present questionable physical signs. 4. The nervous symptoms were a symptom group due to the toxins of the tubercle bacillus. In keeping with this he finds: 1. Positive reaction to a subcutaneous injection of tuberculin; 2, a history of exposure to infection; 3, doubtful lung signs; 4, positive x ray examination of chest. Clinical phenomena are often bizarre and extend over long periods of time. Physical conformation is that of phthisical type as a rule, frequently with visceroptosis.

Dr. NATHAN ROSEWATER, of Cleveland, referred to a paper of his on Concealed Starvation, a condition equally capable of causing such symptom groupings referred to by the writer of the paper. He believes that the so called neurasthenic becomes worn as the day wears on, due to his ready exhaustion. This is less true of the tuberculous.

Dr. F. M. POTTENGER, of Los Angeles, Cal., thanked the writer and said he questioned the existence of neurasthenia as a distinct entity and advised the use of tuberculin in the treatment of these cases.

Dr. CHARLES STOVER, of Amsterdam, N. Y., said that myasthenia gravis should be eliminated before accepting the findings of the writer. The muscle contractions are rapidly exhausted by the electric current, but contractility returns after a period of rest.

Dr. ELIZABETH MOSHER, of Brooklyn, N. Y., spoke of visceroptosis as a provocative factor in a long list of morbid phenomena. She also spoke of intestinal stasis in those cases and asked the writer what he did to overcome the visceroptotic element in his cases.

Dr. A. J. CAFFREY, of Milwaukee, mentioned the frequency of reaction to tuberculin as manifested by a large group of apparent neurasthenics seeking treatment in an outpatient department.

Dr. JOHN RITTER, of Chicago, expressed the view that forty per cent. of all patients presenting neurasthenic symptoms are tuberculous. We are too prone to wait for definite signs before pronouncing a case tuberculous. Frank tuberculosis might be regarded as a late stage as we look upon the tertiary manifestations of syphilis. He employed one half to one mm., of tuberculin intracutaneously, finding a larger percentage of reactions than by the subcutaneous route.

Dr. TOM A. WILLIAMS, of Washington, D. C., urged against too sweeping diagnoses. His hypoadrenal group for instance would include many similar cases, as might pellagra and other conditions. He said that when visceroptosis occurred as a degenerative state in a previously normal type, it is of less import than the congenital type.

Dr. WALTER B. SWIFT, of Boston, Mass., said not all neurasthenics have tuberculosis. He cited an apparently typical case of neurasthenia which died six months later of carcinoma of the stomach.

Dr. ALBERT BOBIN, of Wilmington, Del., disliked the word neurasthenia, believing it has dominated our profession. Bilious fever and malaria are also used in a loose sense. He deplored the rarity with which careful, routine examinations are made. He said the use of the thermometer is not general enough and believed that cases of exhaustion which develop fever and rapid pulse after effort of any kind, should be regarded as tuberculous.

Dr. H. G. PLUMMER, of Rochester, commented on the value of the author's paper.

Dr. J. P. MUNSON, of Charlotte, N. C., expressed his general concurrence with the author and those who had previously discussed the paper.

Dr. ROBERT N. WILLSON, of Philadelphia, Pa., mentioned tobacco in excess as a possible cause of neurasthenic phenomenon, and believed there are other toxic facors, among them autointoxication, which he had hoped Doctor Mosher would have included in speaking of intestinal stasis. He said there was no doubt that tuberculosis could cause neurasthenic symptoms, but it was not the sole cause. In his opinion neurasthenia is in large measure an hereditary condition.

Doctor HEAD remarked in conclusion that he had been misunderstood by some. He did not wish to be charged with the statement that all neurasthenics were tuberculous. He ventured about thirty per cent., perhaps more, would fail to react to tuberculin. As many with displaced viscera do not present morbid phenomena, he did not ascribe to it any great part and contented himself by treating the basic condition. He said it was of interest to note that many of the cases cited by Dr. Weir Mitchell in his book, "Fat and Blood," had tuberculosis, and the frequency of temperature in all of Mitchell's cases is a striking support of the writer's thesis.

The Use of Atophan and Radium Emanations in the Treatment of Gout and the Arthritides.—Dr. ARTHUR F. CHACE and Dr. M. S. FINE, of New York, showed the influence of atophan in increasing the output of uric acid in the blood, beginning two or three hours after the exhibition of the drug, continuing during its administration, but ceasing in two days when the drug is stopped. Other forms of arthritis do not manifest uric acid concentration in the blood. In general their experience with radium emanations was disappointing, and when the uric acid content of the blood is increased following their use, they believe it due to leucolysis and not the result of an increase of the true endogenous moiety.

Dr. CHAS. STOCKTON, of Buffalo, agreed in the main, but had seen unpleasant results sometimes follow the use of atophan. He believed, however, that gout is more than a mere increase of uric acid in the blood and asked the writers' concept.

Dr. S. SOLIS-COHEN, of Philadelphia, Pa., testified to the value of both atophan and novatophan, but like Dr. Stockton, did not think uric acid the whole story; nor do clinical results follow a parallel course with the uric acid curve. Relief of pain and fall of temperature do not mean recovery. These occurred in a case of arthritis of infectious origin, but without other improvement till salicylic acid was given. It is Dr. Solis-Cohen's plan to give atophan in one dram doses daily for one week in a month, less, therefore, than the authors. He spoke of his experience with radium emanations and drinking water.

In closing, Doctor Chace said that novatophan had been less satisfactory than atophan in its influence on uric acid. Unless a patient had a uric acid concentration of .004 mmg. per 100 c. c. of blood or more, he did not regard the case as one of gout. He referred to the high uric acid content in uremia and terminal nephritis. As to radium emanations he believed them more adapted to subacute than to acute or chronic cases.

Satisfactory Results from Intrarectal Administration of Sodium Salicylate in Acute Rheumatic Fever.—Dr. LOUIS G. HUYN, of Cincinnati, quoted a previous paper of his own and the satisfactory results also attained by Doctor Erlanger. He referred to salicylic acid as etiotropic and bactericidal. Why then should it fail? He believed this was explained by the inability of the stomach to tolerate it in sufficient dose. Doctor Forchheimer said he believed the rectal method the best for the giving of the salicylates. The author stated as possible advantages: 1. The ease of administration. 2. Large doses can be given this way. 3. They are without unpleasant effects. 4. Easily absorbed. 5. More prompt in effects. 6. Effects can be readily removed by enemas if untoward symptoms should occur. He gives it as follows: 1. Cleansing enema; 2. Saline enema containing eight to ten grams sodium salicylate to a man, six grams to a woman. Should local discomfort occur an enema of starch water and opium can be given. The largest dose he has given was 360 grains or twenty-four grams.



JOHN J. ANDERSON, M.D.
... Washington, D.C. ...
... of Section on P... and Therapeutics.



ARTHUR L. CHUTE, M.D.
... Boston, ... of Section ...

Tinnitus and sweating are the only unpleasant symptoms he has noted. That it is absorbed promptly is shown by the ferric chloride test; the red color in the urine with this test is shown fifteen to thirty minutes after enema is given and continues for twenty-four to forty-eight hours. He said it should be continued for some time.

Dr. E. W. MITCHELL, of Cincinnati, said large doses are necessary to effect the desired result, hence the intrarectal method. He has used 300 grains in twenty-four hours.

Dr. J. L. MILLER, of Chicago, questioned whether the rectum absorbs as well as the stomach, but in the former case the dose is massive, though he recalled the fact that at one time it was the custom to use very large doses by mouth. He doubts, too, the alleged specific action of salicylates. They relieve pain better than heat or alkalies, but relapse is the rule. In looking up a large number of hospital records, he found very little difference in stay in hospital between cases treated by alkalies and heat or by salicylates. In the experimental streptococcus arthritides the salicylates have no influence.

Dr. M. UPJOHN, of Richmond, Va., said smaller doses of salicylates are necessary if alkalies are first given. He gives alkalies first till urine and sweat are neutral.

Dr. J. M. RECTOR, of Colorado, who had also used the rectal method with great success, modified the technic somewhat by following the enema with an injection of air to force it well up into the bowel.

Dr. JAMES TYSON, of Philadelphia, Pa., said he had reported on the same method some years ago, but felt the newer forms of the salicylic group were more valuable in most instances.

Dr. NATHAN ROSEWATER, of Cleveland, said if preliminary cleansing ... employed ... salicylates by mouth is required.

Dr. W. A. THOMPSON, of Charlotte, W. Va., also commented on the treatment.

In closing Dr. Huyn said, all experimental evidence to the contrary, his clinical results have been entirely satisfactory.

SECTION IN SURGERY.

The Cerebrospinal Fluid as a Problem in Intracranial Surgery.— ... phia, placed emphasis upon the importance of cerebrospinal ...



MAZYCK P. RAVENEL,
Of Madison, Wis., Chairman of Section in Preventive Medicine and Public Health.



LEONARD W. ELY, M.D.,
Of San Francisco, Chairman of Section in Orthopedic Surgery.

of certain conditions and cited meningitis and hydrocephalus as two diseases particularly in which it is a most important factor. In meningitis there are two pathological factors: an infection and increased tension. Whatever the infection, the result is an increased pressure or tension. The progress of the disease has been arrested by lumbar puncture when an infection has not been suspected. The increased pressure is a determining factor in the prognosis.

In cases of hydrocephalus, necropsy has never shown any etiological factor that would assist in the treatment. In brain tumor the symptoms are due to increased accumulation of the cerebrospinal fluid rather than to increased pressure produced by the tumor, no matter what the nature of the tumor or its location. Puncture into the ventricles and lumbar puncture relieves this tension, but it rapidly reappears. Palliative treatment deals with this reaccumulation of the fluid. The test puncture is through the corpus callosum. The value of this puncture is that the fluid reaches the longitudinal sinus. The lymphatics play a minor part in absorption, which is principally venous. The increased tension is not due to obstruction of the ventricle, but to failure of absorption. Normal pressure of the fluid is that of 100 m. m. of water or six m. m. Hg., the choroid plexus excreting the fluid. The choroid plexus hence must be looked upon as a gland. In the treatment it might be presumed that ligation of the carotids would do in cases of increased choroid plexus activity. But this has not proved so. The one agent that has accomplished the most is thyroid extract, administered intravenously.

A Contribution to the Surgery of Brain Tumors.—Dr. HERMAN KÜTTNER, of Breslau, Germany, stated that often it is impossible to make a diagnosis between brain tumor and simple hydrocephalus. Mortality in his clinic is very high after operation. To relieve symptoms, especially choked disc, he trephined as early as possible. He advocated decomposition, but deemed puncture of the corpus callosum of value. Decompression is particularly advised in hydrocephalus.

Dr. WILLIAM G. SPILLER, of Philadelphia, urged that decompression is not a trivial operation. As a rule bad results do not occur, though serious consequences have occurred in a few cases. He had seen a degree of dementia result. Cerebral hernia should be disregarded even if it is disfiguring. The danger of such a hernia forming a fungus and breaking down should be borne in mind. Decompression is usually done to save the vision; it is also done for other pressure symptoms. It will do no good if optic atrophy has occurred, and it is uselessly done in choked disc, because optic atrophy will probably follow. Choked disc is not always caused by brain tumor—malaria and meningitis may each produce a neuritis. X ray is a most valuable means of diagnosis, the inner table of the skull showing the markings of the convolutions, which is more apt to occur with hydrocephalus than brain tumor. As to puncture of the corpus callosum it is possible to remove a portion of it, leaving an opening for more perfect drainage.

Dr. HARVEY CUSHING, of Boston, said the situation of the tumor was of importance rather than the character of it. In operating for brain tumor the mere feat of removing the tumor is often considered of more importance than the condition the patient is left in.

Osteoplastic Closure of the Trifacial Canals—An Experimental and Clinical Study Illustrated by Lantern Slides.—Dr. ALLEN B. KANAVEL, of Chicago, described several experiments upon dogs, of osteoplastic closure of the trifacial canals and the application of the principle in cases of trifacial neuralgia. His experiments were directed to determine if the bone canals could be closed, and so prevent the nerve reaching the surface and functioning—to be used in cases where intracranial methods have been refused and alcoholic injections have failed to give relief. He mentioned three methods of closing the canals: 1, avulsion of the nerve, curettage of the canal and osteoplastic closure of canal by a section from adjacent tissue; 2, closure of canal by transplanting tissue from adjacent parts of the body; 3, by transplanting bone from other parts of the body. To avulse the nerve the best results were obtained by cutting down upon it, grasping it and twisting it very slowly from five to ten minutes. The results were in the first method fairly good, but not entirely satisfactory; in the second method, the nerve grew through in most cases; in the third, the results were good if infection did not occur, though it usually happened. The nerve grows down the canal and ends blindly if closure is effective. The operation is not indicated if removal of the ganglion or if Doctor Frazier's and Dr. Spiller's extra cranial operations are indicated, or if alcoholic injection gives relief for some time. It is indicated in the debilitated; alcoholic injections failing, and in cases of poor surgical risk. He suggested the procedure purely as an experimental study.

Dr. S. J. MIXTER, of Boston, considered the method worthy of trial, and said by plugging the canals the nerve can be shut off and so prevent the recurrence of pain.

Treatment of Unlocalized Intracranial Injuries by Drainage Through a Subtemporal Approach.—Dr. VILRAY P. BLAIR, of St. Louis, said that when injuries recur in the region of the base of the brain localizing symptoms are usually absent. Next to the sensorium the pupillary reflex is most often disturbed. In those cases coming to autopsy there is no bony depression accounting for death but there is evidence of intracranial extravasation of blood with pulpification of the brain substance of the under surfaces of the frontal and the parietal lobes. Death is due to secondary circulatory changes rather than to the injury. It is called encephalitis but it is not an infection. The cerebrospinal fluid is clear.

Subtemporal opening is best because the operation is more quickly and easily performed, a larger area of brain can be explored, clots can be easily withdrawn and drained. Decompression allowed expansion of the brain. If the middle meningeal artery is the cause of the clot, it can be readily controlled. The time of operation would seem to be important. Best results are obtained within two hours after injury. The prognosis is better than in non-operative cases. Technic of the operation is simply a muscle splitting—the dura often being opened within six minutes of the first incision.

Dr. OTTO H. SCHULTZE, of New York, said the symptoms of concussion were due to multiple minute hemorrhages throughout the brain substance. These minute hemorrhages often give the same symptoms as a gross hemorrhage or an injury to the surface of the brain, and these conditions must differentiate before operating.

A Study of Three Hundred Cases of Acute Suppurative Appendicitis with Special Reference to Pelvic Complications.—Dr. ARCHIBALD MACLAREN, of St. Paul, desired to impress the advantages of rectal and pelvic drainage in appendicular residular abscesses. He classified abscesses according to the amount of pus present. If there was more than four ounces, it was a secondary abscess or general peritonitis. This division also assisted in the prognosis. It was more dangerous to operate on a large abscess than a small one. Rectal drainage in general peritonitis, small abscesses, and unruptured appendices is a life saving procedure. It has reduced the mortality by over fifty per

cent. It is especially urged in pelvic complications. He urged a rectal examination in all abdominal cases. Six days after operation if pus accumulates in the cul de sac—night pains and other signs of sepsis occur. As adhesions increased, the intraabdominal pressure rapidly approached zero. Rectal section is urged even with pus streaming out of an abdominal incision. He declared it was untrue that in children the rectum is too small for drainage. In bad cases he advocated rectal section and rubber tube winged drain—a later laparotomy with removal of the gangrenous appendix. In young girls he also practiced a rectal drainage—but in adult women he preferred vaginal. Successful treatment depended upon the time of the operation. The earlier the better. Rectal drainage is to be done if drainage is necessary. The opening was made with sharp scissors—dilating rather than cutting the tissue.

Has the Last Word Been Spoken Concerning Appendicitis?—Dr. J. E. Moore, of Minneapolis, seemed to think it has not and will not be until the mortality rate is reduced to zero. In the past few years there have been too few papers read upon the subject. Little has been added to our methods of diagnosis—local pain, vomiting, and muscular rigidity being the cardinal symptoms—and not to be mistaken. There were exceptional cases when the most skilled can be led astray. In children pneumonia and intussusception were apt to be mistaken for appendicitis. If the cardinal symptoms were all absent but if muscular rigidity was present—appendicitis is to be considered. Psoas contraction is sometimes present. The time to decide whether it is a case of catarrhal, perforating, or gangrenous appendicitis was after removal of the appendix. Mortality without operation is twenty per cent., with operation less than five per cent. Interval operation, he advocated as a routine measure, especially in child bearing women. In the pregnant the operation was more than twice as dangerous and should be done at the earliest moment to prevent abortion. In suppurating cases he used rubber covered gauze drain. He denied the advantages of the Fowler position.

Dr. A. J. Ochsner advocated inhibition of peristalsis, gastric lavage, no food in cases that do not offer best results from operation, or when skilful surgeons or hospital facilities can not be obtained. He believed in the Fowler position.

Dr. J. M. T. Finney, of Baltimore, thought the mortality in appendicitis was preventable—death is an evidence of a mistake, and pus of a blunder on the part of somebody not always the physician or surgeon.

Dr. Lincoln Davis, of Boston, said better results in appendicitis were due to better postoperative treatment. Rectal and vaginal sections are the best means of reaching residual appendicular abscesses .

SECTION IN OBSTETRICS, GYNECOLOGY, AND ABDOMINAL SURGERY.

A Few Important But Unsolved Problems in Obstetrics, Gynecology, and Abdominal Surgery.—The points emphasized by Dr. J. Gustav Zinke, of Cincinnati, the chairman, were various; intestinal stasis and the many pathological conditions arising from defective body drainage. From the standpoint of treatment, paraffin before meals is especially valuable, together with a well regulated diet and massage. In the operative treatment Lane methods were recommended. The kinetic theory of shock, Crile's anoci association theory was not fully accepted by all, while some of the criticisms and objections were justifiable, but there was a reduction of mortality. The use of the x ray in hemorrhages of the pelvic organs was compared with surgery. The pendulum is not evenly balanced but swings too far to one side or the other, as in the radium treatment for malignant disease. In this respect the criticism is too severe. Surgery is first and best, but radium in some instances is best. In inoperable cancer of uterus, frequent use of the cautery associated with radium treatment is beneficial. As to the treatment of the pregnant woman with contracted pelvis, when only moderately contracted the method, both here and in Germany, is more frequently to induce labor prematurely, while in France high forceps are too frequently resorted to. Version is indicated only in a very limited number of cases. Embryotomy on the living should be most exceptional. The treatment of placenta prævia is still an open question. While the life of the mother should be the first consideration, the life of the unborn should be more carefully considered. Cæsarean section is probably more frequently indicated than practised, especially when the child is viable. There are still great extremes in the treatment of eclampsia. The medical and surgical methods are equally advocated. The surgical treatment for eclampsia has a high mortality, and the chairman favored medical treatment, veratrum viride, sweats, baths, milk diet, etc. The preventive measures are of paramount importance.



BURT R. SHURLY, M.D.,
Of Detroit, Chairman of Section in Laryngology, Otology, and Rhinology.



FRANK C. TODD,
Of Minneapolis, Chairman of Section in Ophthalmology.

The Treatment of Albuminuria of Pregnancy.—Dr. E. J. Ill stated that a perusal of the literature showed great diversity of opinion as to the treatment. Those recommending active interference at one time will recommend expectant treatment at another. The writer holds that albuminuria of the primipara is a more serious illness and demands greater consideration than the same condition in the multipara. In the albuminuria of the primipara three cardinal conditions must be considered: The character of the albuminuria; the presence of the uremic symptoms; the time to which the pregnancy has advanced. The rights of the unborn child should be carefully considered and wherever interference is deemed advisable, this should be borne in mind. Proper diet, even starvation treatment, may be needed in some instances, while rapid delivery, provided the soft parts are in proper condition, free retraction of the cervix being an important consideration, or even Cæsarean section, should be practised. Dr. Ill reported a series of cases treated by a medical friend on the expectant plan, after the method of the Rotundo Hospital and, on the other hand, a series of cases by Cæsarean section in his own service. His conclusion was that careful consideration is necessary in the treatment of every particular case, and that he who will select his cases according to the indication will have the most satisfactory results.

The Treatment of the Toxemias of Pregnancy.—Dr. A. J. Rongy stated that while the true etiology of toxemia of pregnancy is not well understood, the symptoms incident to pregnancy are the result of poisons generated from the products of conception, including the varying degrees of vomiting and eclampsia. No reliance should be placed on any one manifestation as albuminuria, etc., but on the toxic symptoms in general, as headache, vertigo, disturbed vision, epigastric pains, etc., with increased blood pressure. The keynote is to watch all of the lesions and establish the treatment during the early stages, avoiding the too radical and the too conservative. The placental serum treatment was still in the experimental stage, the consensus of opinion was the reduction of the blood pressure with large doses of veratrum viride and by



WILLIAM W. GRAVES, M.D., Of St. Louis, Chairman of Section in Nervous and Mental Diseases.



RICHARD L. SUTTON, M.D., Of Kansas City, Mo., Chairman of Section in Dermatology

elimination through the various channels and Cæsarean section for the few well selected cases.

The Treatment of Placenta prævia.—Doctor DAVIS stated that placenta prævia is one of the most dangerous conditions for both mother and child and is encountered once in 80 to 1000 in private practice and once in 250 in hospital practice. Its dangers are hemorrhage and infection and it closely resembles ectopic gestation, of which it is, properly speaking, a variety. The great danger to the mother is due to the fact that hemorrhage occurs without pain and the condition is too often disregarded until too late. Pregnant women should always be warned by the physician or nurse of the great danger of hemorrhage without pain. The gravity of the condition is such that hospital treatment is needed. If the mother is near term and in a hospital, prompt delivery by abdominal Cæsarean section will give the best results.

If the mother has had repeated hemorrhages, and the child is premature, or dying, or dead, the body of the child should be used as a plug to prevent bleeding, until the uterus can be emptied. The fetal membranes should be ruptured and in most instances version by Braxton-Hicks method should be practiced.

In selected cases where the child is fully viable, the membranes may be perforated and a hydrostatic bag introduced within the cavity of the fetal membranes and dilation thus affected. In a few instances, with rupture of the membranes, the head may descend and forceps be applied. The uterine contractions may be stimulated with strychnine and digitalin. Vaginal tampon and the use of pituitrin are contraindicated. Dr. Davis reported eighteen cases varying in severity, treated by abdominal Cæsarean section, with the recovery of all the mothers and those children which were in good condition and near full development at the time of delivery—forty-two per cent.

Hysterotomy.—Dr. JOHN B. DEAVER said that the safety of hysterotomy has been abundantly proved by its long use for the classical indications as well as by a series here reported of forty hysterotomies for miscellaneous conditions without mortality. It is contended that the time has come to extend the sphere of its influence not only as a safe method of rapidly emptying the uterus, but as a diagnostic procedure. It is the surest means of dealing with placenta prævia and neglected cases of toxemia of pregnancy. In uterine hemorrhage of uncertain origin, hysterotomy is the readiest method of determining the lesion and deciding the question as to hysterectomy. Preliminary hysterotomy has given great satisfaction in dealing with intrauterine polyp, submucous fibroid, hyperplastic endometritis, early carcinoma of the fundus, hydatiform mole or epithelioma. In these conditions it reveals the pathology more certainly than curettage and obviates the two stage operation. Contraindicated in infected uteri and in inexpert hands.

SECTION IN PHARMACOLOGY AND THERAPEUTICS.

TUESDAY, JUNE 23D

The Abuse of Vaccine Therapy.—Dr. JOHN F. ANDERSON, of Washington, D. C., the chairman, pointed out in his address the limited worth of biological vaccines. There is grave danger in the indiscriminate use of vaccines and serums, especially when used before being properly tested. He showed that serious and even fatal pathological results had resulted from their use. Some were still in the experimental stage.

Studies on the Absorption of Drugs.—Dr. ROBERT A. HATCHER and Dr. CARY EGGLESTON, of New York, dwelt on the evidence that different drugs, so far as absorption is concerned, differ according to the rapidity of absorption under various conditions. It was pointed out that each drug was a law unto itself in respect to the ratio of absorption from the several channels of administration. With reference to strychnine, the ratio between its absorption by mouth and after intravenous injection, was relatively slow for, as a matter of fact, intravenous absorption was looked upon as much more rapid. Emetics as a class produced a greater and relatively more rapid reaction when taken by the mouth than when administered intravenously.

The Therapeutics of Pericarditis.—Dr. RAY L. WILBUR, of San Francisco, laid great stress on the matter of treatment of pericarditis according to its various stages. In the first stage, before effusion has developed, he considered local measures more effectual than internal medication. Pain is best relieved by counter irritation over the heart with mustard, iodine, or blistering collodion. The ice bag is most useful in slowing the heart. In the aged, however, heat may be more effectual; it is usually more agreeable. Morphine must be used guardedly, as it may cause vomiting. If pain is very severe, give opium by rectal suppository. For severe pain the salicylates often are useful. Digitalis is given for cardiac weakness. In the second stage, when effusion is present, he advised aspiration after waiting two weeks. The technic is as follows: A straight needle five inches long is used in the fifth interspace one inch inside and to the left of cardiac dullness. Removal of small amount of fluid may stimulate the remainder to absorption. When external adhesions occur, surgery must be thought of.

Abuse of Salt Solution.—Dr. LAWRENCE LITCHFIELD, of Pittsburgh, spoke against the abuse and harmfulness of salt solutions, showing how their indiscriminate use is harmful in cases exhibiting shock, in hypertension in the blood stream with advanced cardiac collapse. He observed that frequently the use of salt solution may greatly lessen the chances of the patient's cardiac equilibrium being reestablished. He advocated the use of a glucose solution and showed that there was no danger of glycosuria occurring after its use. He also advocated the use of isotonic dextrose solution administered intravenously, and sounded a word of warning against the routine Fisher and Murphy treatment.

Therapy of Cardiovascular Disturbances.—Dr. L. H. NEWBURGH, of Boston, showed that in certain diseases in which cardiac stimulants were necessary, after strychnine or caffeine, there was in no case an increased blood pressure. In some cases one tenth of a grain of strychnine was administered as often as every three hours without raising the blood pressure. He also noted that in fatal cases of lobar pneumonia high blood pressure is exhibited universally.

SECTION IN PATHOLOGY AND PHYSIOLOGY.

TUESDAY, JUNE 23D.

Experimental Chronic Gastric Ulcer.—Dr. J. C. FRIEDMAN and Dr. W. W. HAMBURGER induced the formation of ulcers by injecting silver nitrate into the mucosa of the stomach of various animals. Streptococci have also been used for this purpose. The reasons for the persistence of these ulcers are not definitely understood. X ray work has recently shown us that if the mucous membrane lining the stomach or intestine is injured there arise nervous contractions of the outlet of the stomach which may cause the latter to retain the food for a longer period than normal and secrete an excessive amount of gastric juice which is accompanied by a hyperacidity. These spasms of the stom-

ach walls might be the cause of the delay, in the healing of ulcerations, which might arise from any cause. Any septic condition in some focus of the body might induce a spasmodic contraction of the stomach wall, and thus give rise to chronic ulcers.

Duodenal Obstruction.—Dr. JOHN WILLIAM DRAPER, of New York, said that he had induced duodenal obstruction in dogs. The pathological changes manifested themselves in a congestion of the stomach and colon. The liver function in these animals was impaired as indicated by the camphor glucoronic test of Tollens. The death after duodenal obstruction is due to a toxemia as indicated by the above test and not to the water loss as held by some. To obviate the intoxication animals were fed with emulsified tissues. The results obtained by the author were striking. The normal controls of dogs lived, after duodenal obstruction, eighty-eight hours, while those which were fed with emulsified tissues of liver, spleen, kidney, pancreas and muscle tissue, lived one hundred and four hours. While another series similarly obstructed but fed with an emulsion of cells which lined the mucous membrane of the small intestine of another dog, lived one hundred and sixty-eight hours—almost double the number of hours of the normal controlled dogs. Practically the toxemia could be obviated by using emulsified tissue in colonic irrigation.

Röntgenological Studies of the Function of the Ileocolic Valve—Dr. JAMES T. CASE, of Battle Creek, Mich., stated: The ileocolic junction which divides the small from the large intestine has a double function. The muscle which exists at this point prevents too rapid passage of unabsorbed food materials from the small intestine into the colon. There is thus normally a delay of the food materials in the lower end of the small intestine for a period equivalent to or longer than the time the food normally remains in the stomach. The ileocecal valve, which is an elliptical one-way valve, offers no resistance to the passage of food from the small intestine into the large intestine, but effectually prevents a reflux of material from the colon back into the small intestine. The colon normally serves as a reservoir. The small intestine, especially the lower end of it, is an absorbing organ. When the ileocecal valve is incompetent, there is a reflux of material from the colon back into the small intestine, where absorption is much easier, with resulting undue prolongation of the time required for the small intestine to empty itself. The highly active, absorbing surface of the small bowel, which is now the seat of stasis, favors the condition called alimentary toxemia. This could be obviated by an artificial production of a competent valve by invagination of the colon.

Quinine and Urea Hydrochloride Injection in Goitre. Dr. LEIGH F. WATSON, of Oklahoma City, Okla., observed that he had secured good results in the treatment of goitre by injecting into the enlarged thyroid gland a sterilized twenty to forty per cent. solution of quinine and urea hydrochloride. Thirty drops was the dose used. Fifteen cases have been thus treated, with marked improvement in each case. The injection is painless and has no unpleasant after effects. Several injections are usually necessary; they are given two to six weeks apart; the length of time between injections, depending on the condition of the patient. Each patient has shown improvement after the first injection; the patient is less nervous, sleeps better ,and gains in weight. The quinine and urea hydrochloride injection has been used in almost all types of goitre, and in each class, case reports show marked improvement in symptoms, and a decrease in the size of the tumor. From the number of cases treated and the results obtained, it is reasonable to believe that the quinine and urea hydrochloride injection will be a distinct aid in the treatment of goitre.

SECTION IN PREVENTIVE MEDICINE

The Education of Health Officers.—Dr. M. P. RAVENEL emphasized the need of specially trained men to fill the positions of health officers. The ideal man is one who has had a thorough training and who receives enough salary to permit him to devote his whole time to such work. At present, in most places, the compensation is small and few men can afford to give up their practices to accept the position of health officer. Neither public sentiment nor professional opinion has demanded selection of men who have received special training, therefore we find very few universities or colleges who have any uniform courses leading to such training.

Medical schools should impress in the minds of their students the idea of preventive medicine, and more young practitioners should prepare themselves for the positions which are offered by the local health boards.

The community must join with the profession in urging the appointment of some competent man, devoting his whole time to the health of his community, a man of general as well as special experience.



WILLIAM C. FISHER, M.D., Of New York, Demonstrator at Section in Stomatology.

The first requisite is a good general education, including a knowledge of veterinary medicine, animal diseases communicable to man, geology, hygiene, general, special, and applied, medical inspection, bacteriology, vital statistics, public health administration, and sociology. The health officer should be a graduate of medicine and should be familiar with the various contagious diseases. It was needful to have fully trained men appointed without political influence.

It was also desirable that the colleges and universities should have uniform courses leading to the degree of Doctor of Public Health.

Poverty in Relation to Tuberculosis.—Dr. S. A. KNOPF, of New York, said: Children of the poorly nourished are really physiologically poverty stricken. This has been proved by statistics. It is also true that the last born of large families are predisposed; they have less vital resistance and less favorable sociological environments; less food than in small families. Bad housing conditions have been shown to be responsible for about eight per cent. of the entire number of tuberculous who apply to the clinics of New York City. Tuberculosis is primarily a disease of congestion, and as such flourishes mostly in our large cities. In prisons and reformatories the conditions existing predispose to pulmonary tuberculosis.

Poverty is a great factor in the development of the disease as shown by investigation in Hamburg. There it was shown that the maximum of cases came from families who had an earning capacity of about three hundred and fifty dollars a year or less. The idea that alcohol predisposes may be better understood when we remember that the popular fallacy is to consider it as a remedy. Thus by taking large quantities the patient is usually reduced to a state of poverty which acts as the true predisposing element.

The care of the tuberculous patient should extend from the sanatorium to the home. Observation of the hygienic conditions should be made from the time of admission and only be discontinued after he returns home and it is noted that he is living in the proper sanitary manner.

Corrective measures should be instituted in all institutions so that the inmates may not menace public health when they are set at liberty.

Employers should aid in the fight of tuberculosis by establishing colonies for the recuperation of their affected employees as well as supervise a routine medical examination of all those who may be suspects.

A Study in Poverty.—Dr. J. N. HURTY, of Indianapolis, in his study of paupers, asserted that a normal adult will never sink into poverty. Disease is an evidence of physical impoverishment and thus lesser extent of mental. Syphilis is a great factor of poverty. Eugenics is the only cure for feeblemindedness and has not been adopted as yet by the profession or the public.

Doctors in Relation to Poverty.—[illegible] M. D., said: The report of a British Commission shows

sixty-five per cent. of poverty is due to sickness, most of this is preventable, thus making poverty a truly medical problem. Pauperism is an inherited, communicable, congenital defect. Poverty is also a medical problem because most children are good specimens if they receive a good training, physical and mental. To this end more straightforward medical men should enter politics to counteract the evil specimens who sometimes gain admission to politics. We owe it to the community as a part of our civic spirit to care for the poor children and see that they grow up under the proper conditions.

The masses may be reached and protected by a system of insurance similar to that adopted abroad. It was suggested that the younger physicians should take charge of some families and make routine examinations and take care of them by a system of yearly contract. This may be done without injury to physician or patient.

Report of the Committee on Poverty.—Dr. W. A. Evans, of Chicago, chairman, said, in his summary: The Insurance Protective Act was inaugurated in Germany years ago. Later England followed after much discussion and adopted the same plan. America is about to face the same issue. We, as physicians, are vitally interested as well as the laymen. It is time we should consider a National Insurance Act as well as the rates for contract service.

Report of Committee on Cerebrospinal Meningitis.—Dr. R. Q. Lillard, of Nashville, is chairman. The committee recommended the following: 1. Prompt and early report of all cases. 2. Special records of all cases. 3. Placard and quarantine of the home. 4. Isolation hospital for free serum treatment. 5. Isolation of patients in homes. 6. Dispensaries for treatment of cases exposed or suspected. 7. A supply of serum to be on hand in the public health laboratories. 8. Board of health officers to treat all cases. 9. Discouragement of all public gatherings during epidemics. 10. Laboratory for prompt examinations. 11. General quarantine not necessary as it gives a false security. 12. Antiseptic nasal and oral sprays. 13. Thorough disinfection. 14. Private funerals. 15. Circulars for disseminating knowledge to the public relative to the disease and its dangers.

SECTION IN DISEASES OF CHILDREN.

The Wetnurse in Hospital Practice.—Dr. Frank Spooner Churchill, of Chicago, said that a comparative study of two groups of infants of unequal age and weight, the older and heavier group fed exclusively on cow's milk, the lighter and younger group fed on part human and part cow's milk, showed that the mortality in both was the same. A study of two groups of the same age and weight fed as above showed a mortality lower by eight per cent. in the group fed partly on breastmilk. Infants seriously, but not hopelessly ill, whose diet consisted of at least one half breastmilk over a critical period, showed a mortality of three per cent. Infants somewhat less seriously sick, whose diet consisted of less than one half breastmilk over a similar period, showed a mortality of fifty per cent.

Some Practical Breastmilk Problems.—Dr. A. W. Myers, of Milwaukee, stated that the number of cases of breastfed infants that are not successfully fed is very great, and the diet of nursing mothers is usually at fault. The effects of different foods on the milk of cows are well known, yet the changes in human milk brought about by diet is not thoroughly appreciated. Many children who are not comfortable, have abdominal distress in spite of normal stools and continuous gain in weight. He then cited cases in which examination of the milk showed nothing abnormal. When fruit and vegetables were removed from the diet improvement in the infant's condition immediately took place and no more discomfort was seen. Aromatic bodies contained in fruits, spices, and highly flavored vegetables, which are not destroyed by boiling, cause changes in the milk which give rise to indigestion in the nursing infants, and it is advisable to discontinue the use of these foods in any nursing mother's dietary whose infants are suffering from digestive disturbances.

The Feeding of Skimmed Breastmilk.—Dr. Frank C. Neff, of Kansas City, stated that a fat reduced breastmilk is as rational as a fat reduced cow's milk. He mentioned as the indications for the use of skimmed breastmilk: 1. Pyloric spasm and stenosis; 2, persistent vomiting; 3, infantile eczema which occurs in breastfed and often overfed infants; 4, premature infants with weak digestion; 5, infants with intestinal ingestion (loose stools) who fail to gain in weight. He cited cases in which skimmed breastmilk was used with great success. The temporary use of such milk is desirable until the digestive disturbances have been overcome.

Doctor Douglas, of Detroit, said that for many years he had opposed the use of fruits for nursing mothers. It is not the highly flavored fruits alone, but the sugars they contain that cause the distress and indigestion in the breastfed infant whose mother partakes of them.

Doctor Morse, of Boston, said that he believed that it was the exception and not the rule when fruit caused the trouble. The nervous mother is far a more important cause of the indigestion of the nursing infant.

(To be continued.)

The New Officers are: President elect, Dr. William L. Rodman, of Philadelphia; first vice-president, Dr. D. S. Fairchild, of Iowa; second vice-president, Dr. Wisner R. Townsend, of New York; third vice-president, Dr. Alice Hamilton, of Chicago; fourth vice-president, Dr. William Edgar Darnall, of Atlantic City; secretary, Dr. Alexander R. Craig, of Chicago, reelected; treasurer, Dr. William Allen Pusey, of Chicago.

Three thousand three hundred and eighty-three members registered at this meeting. The place chosen for the next meeting is San Francisco

The Commercial Exhibit.—This exhibit was larger and more complete than usual, which may have been the reason for the confusion that reigned until well into Tuesday afternoon. Samples of foods, drugs, and ferments were distributed lavishly, but to a clientele which appreciates such courtesies and which listened attentively to the demonstrations at the various booths. Mr. Will C. Braun was the superintendent of exhibits and Dr. Edward Guion, local chairman.

Among the exhibitors were: W. D. Allison Company, Indianapolis; A. S. Aloe Company, St. Louis; Ambulatory Pneumatic Splint Manufacturing Company, Chicago; Apollinaris Agency Company, New York; Arlington Chemical Company, Yonkers, N. Y.; Bausch & Lomb Optical Company, Rochester, N. Y.; Frank S. Betz Company, Hammond, Ind.; P. Blakiston's Son & Co., Philadelphia; Borden's Condensed Milk Company, New York; George W. Brady & Co., Chicago.; Burroughs Wellcome & Co., New York; Wilmot Castle Company, Rochester, N. Y.; Deimel Linen-Mesh System Company, New York; Electro Surgical Instrument Company, Rochester, N. Y.; Eastman Kodak Company, Rochester, N. Y.; Fairchild Brothers & Foster, New York; Forbes Dry Plate Company, Rochester, N. Y.; Franco-American Ferment Company, New York; Horlick's Malted Milk Company, Racine, Wis.; Hynson Westcott & Co., Baltimore, Md.; Indexo Company; Indiana Springs Company, Kramer, Ind.; Jaeckh Manufacturing Company, Cincinnati; Kny-Scheerer Company, New York; Charles Lentz & Sons, Philadelphia; Life Savings Device Company, Chicago; McIntosh Battery and Optical Company, Chicago; Mellins Food Company, Boston; William Meyer Company, Chicago; Miller Rubber Company, Akron, Ohio; Morris & Schraeder, New York; C. V. Mosby Company, St. Louis, Mo.; H. K. Mulford Company, Philadelphia; George P. Pilling & Son Company, Philadelphia; Radium Chemical Company, Pittsburgh, Pa.; Reinschild Chemical Company, New York; Scheidel-Western X-Ray Coil Company, Chicago; Schering & Glatz, New York; Schieffelin & Co., New York; Smith, Kline & French Company, Philadelphia; Snook-Röntgen Manufacturing Company, Philadelphia; E. R. Squibb & Son, New York; Dr. Katherine L. Storm, Philadelphia; Taylor Instrument Company, Rochester, N. Y.; Van Orden Corset Company, New York; Victor Electric Company, Chicago; E. K. Wampole & Co., Philadelphia; Welch Grape Juice Company, Westfield, N. Y.; White Sulphur Springs; Year Book Publishing Company, Chicago; Zemmer Company, Pittsburgh.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

May [illegible]

Study of Maize Poisoning.—B. Gosio cites the work of Alsberg and Black and adds his observations on the production of toxic bodies in corn by the growth of moulds. He arrives at the following conclusions: Through the recovery of a definite chemical compound from spoiled corn, this food can be proved to have the power to induce a specific chronic intoxication. This property arises from the growth of certain parasites which, in addition to the production of the usual changes, cause the development of special poisons in the maize. These poisons belong to the chemical class of phenols, and are very closely related to the phenols that the author isolated from maize in which Penicillium glaucum was grown. Such poisons are of an anaphylactic character, a point which Alsberg and Black touch upon but lightly. Indirect study of them outside of the human body is not full proof that they are actually the causative factors of the wide variety of symptoms called pellagra. Even if they were factors, this would still not settle the etiology of pellagra, for it might well be that different causes were at work.

Action of the Labyrinth.—O. Goebel's painstaking dissections of fresh specimens of the human labyrinth lead him to offer a new theory of the mechanism of its action in the perception of sound. The osseous plate of the partition wall is easily movable on account of the extensive surrounding lymph spaces. At the apex of the cochlea, the osseous plate is more readily mobile than at the base, and its return to normal after displacement is very much slower here than below. Briefly, the perception of sound is held by the author to be due to the displacement of the osseous and membranous partition wall toward the scala vestibuli which leads to the contact of the hair cell projections with the membrana tectoria. The adjustments which exist whereby different sound waves cause the effective displacement of different portions of the partition, or lamina spiralis, are referred by the author to a nice interrelation between the mobility of the osseous and membranous portions of the lamina, to which is added an effective damping action of the contained endolymph. He does not believe that the whole lamina, and the membrana tectoria, fall into oscillations of similar wave length to that of the sound waves causing the stimuli, as previously held. He supports his views with a detailed description of the anatomy, and of his idea of the physiology of the lamina.

Abderhalden Reaction in Pulmonary Tuberculosis.—Max Wolff and Kurt Frank find that this reaction is so variable in the case of tuberculous tissue or tubercle bacilli, when used as test objects, as to be wholly without either diagnostic or prognostic value. Many cases of proved tuberculosis, both early and advanced, gave negative reactions, and, on the other hand, many perfectly normal persons gave positive reactions to either tuberculous lung or to tubercle bacilli.

Experimental Rhachitis.—Jos. Koch believes that the peculiar rhachitic changes which are found in the advanced stages of the disease are the end products of an incomplete and greatly disordered process of regeneration, which follows an infection of the region where bone and cartilage join, and which also extend into the medulla of the bone. The infection runs its course during the period of the growth of the animal. He believes that the acute stage of the disease is due to a hematogenous infection with the streptococcus longus, for it occurs as a direct result of the intravenous injection of this organism. The chronic stage is the secondary result of preexisting infection. While Koch believes that rhachitis is primarily due to an infection by this organism, he also recognizes the important role played by the domestication of animals, their confinement in unhygienic surroundings, and their want of healthful exercise. But he considers all of these factors as merely contributing to the chances of infection due to greater exposure and lowered resistance. Whether or not other organisms than the one mentioned are also capable of causing similar changes in the development of bone, has not been definitely determined. It seems significant in the light of Koch's findings that rhachitis in children so frequently follows shortly after a severe attack of one of the infectious diseases.

Diphtheria Prophylactic TA.—E. von Behring and Richard Hagemann have sought to provide an effective means of securing prophylactic immunization against diphtheria. The injection of antitoxin produces an artificial immunity which lasts but a very brief time, not sufficient to protect a person in the face of an epidemic. By suitable admixture of toxin and antitoxin, it should be possible to induce a primary artificial immunity which would be followed by an immunity induced by the reaction to the toxin injected. That this can be done in animals is readily proved, as is shown in the present paper, and this active immunity is far more lasting than is the artificial passive immunity. The admixture of toxin and antitoxin has been named TA to indicate its nature. The authors believe that it should prove of value in the more effective immunization of man.

Von Behring's New Diphtheria Prophylactic.—Richard Hagemann tested different preparations of TA on human beings, using the intradermal method of injection. By this means alone is it possible to gauge the dose, the control being the size of the local reaction. Hagemann emphasizes that the degree of reaction is not a trustworthy index of the degree of antitoxin formation, particularly in cases suffering from tuberculous infection, in which cases there is a strong tendency to marked reaction. From observations on the blood of nineteen patients given this mixture, Hagemann concludes that presence of antitoxin in the combination actually seems materially to favor the production of antitoxin by the recipient.

Physiology and Pathology of Caisson Disease.—A. Bornstein observed that the performance of muscular work during the process of slow decompression [illegible]

the disease. Such exercise materially hastens the removal of the nitrogen from the blood and lungs.

Hyperglycemic Obesity.—Nicolaus Róth summarizes his investigations by saying that in some cases of adiposity, the tendency to deposit fat rests upon a diabetic foundation. This diabetic basis may remain undiscovered owing to reduced permeability of the kidneys to sugar. To recognize this diabetic tendency, administration of 100 grams of dextrose to produce alimentary glycosuria is often a failure. For this purpose, determination of the blood sugar by the method of Bang is the most satisfactory. In the treatment of this diabetic adiposity, the indication is for a reduction of the carbohydrate intake. Other means of reducing the fat usually fail. He believes that through the inability of the kidneys to excrete sugar in these cases and through incomplete glycolysis, the retained sugar is in large part synthesized into fat.

Multiple Diverticula of the Large Intestine.—In Hans Kohn's opinion this condition is one which is too seldom recognized clinically. All of the cases so far reported were found either at operation or during autopsy. The symptoms are readily confused with other more common conditions, but if the proctoscope and x rays are employed, it may be possible to discover the presence of these diverticula, which are most frequent in the region of the sigmoid and which are usually situated on the mesenteric border of the gut. Their genesis is a matter of doubt, but it seems that venous stasis, coupled with increased and irregular intraabdominal pressure, is the commonest factor. Symptoms, from simple irregularity of the bowels to general septic peritonitis, may result from these diverticula.

Treatment of Chronic Gout with Acitrinum compositum.—Lampé has used this remedy in thirty cases with the most favorable results. It increases the output of uric acid and nitrogen by the kidneys and, at the same time, by reason of its content of colchicin, acts as an anodyne. The drug is a combination of colchicin with acitrin, which, in turn, is an ester of ethylphenylcinchonic acid.

On Phenoval.—Edmund Falk finds this new synthetic of great value in relieving the pains of menstruation and other gynecological affections. When pain is very severe, or when it is caused by an anatomical lesion, phenoval may completely fail. In simple insomnia it is of great value. Salomon also finds it a good analgesic in headache and minor pain. In his experience its prolonged use is not associated with habit, and he has seen no unfavorable side actions. It is chemically alphabromisovaleryl paraphenetidin.

WIENER KLINISCHE WOCHENSCHRIFT.

Pathogenesis of Flickering Arrhythmia.—C. J. Rothberger and H. Winterberg give the following results: 1. The differential electrocardiagram of the flickering auricle consists of extremely frequent oscillations, numbering at first 3,000 a minute, gradually diminishing in frequency. 2. There is an intimate connection between the frequency of the oscillations and the nature of the flickering movement; the former is greatest when the beats are fine, least when they are coarse.. 3. Flickering with coarse beats is identical with the so called fluttering of the human heart. Flickering and fluttering are different steps in one and the same process and are characterized by different degrees of heterogenetic, auricular tachysystole. 4. Fluttering is not influenced by weak stimuli of the accelerator nerves. It is increased by stronger stimuli and the number of oscillations may be considerably augmented. The right accelerator nerves are commonly more active than the left. The number of beats is increased by both. The effect upon the auricle consists of a true acceleration of its contractions. 5. Flickering and fluttering of the auricle are in no way prolonged by stimulation of the accelerator nerves, but probably shortened. 6. The vagi have an inhibiting effect upon the number of beats. Strong stimulations of the vagus change the beats from coarse to fine and, at the same time, increase their frequency. 7. The final cause of flickering is a great shortening of the period of rest. 8. The increase in frequency of the oscillations, the transformation of fluttering into flickering, and the prolongation of flickering through stimulation of the vagus likewise depend on the shortening of the period of rest. 9. The number of oscillations in the differential electrocardiogram agrees with the number of muscular contractions and measures the frequency of the flickering movement; a flickering auricle may give 3,000 to 3,500 contractions a minute. The often perfect uniformity of the oscillations speaks against the importance of multiple stimuli in the pathogenesis of flickering. 10. The arrhythmia accompanying flickering and fluttering is the consequence of weak, simultaneous, but too numerous stimuli, which cause disturbances of conductivity of varying degrees.

Albumin in the Sputum in Pneumonia and Pulmonary Tuberculosis.—O. Melikjanz says that in croupous pneumonia the quantity of albumin in one c. c. of sputum does not exceed one per cent., even when several lobes are involved. As the condition of the lung improves, the quantity of albumin becomes less and disappears entirely before long, at the latest on the thirtieth day of the disease. The later the albumin appears in the sputum and the later it disappears, the graver is the prognosis. The quantity of albumin is fairly proportional to the severity of the pulmonary disease. The specific gravity is independent of the degree and nature of the disease. Great quantities of albumin in the sputum, and a reaction maintained for a long time, are indicative of pulmonary tuberculosis.

PARIS MÉDICAL

Intermittent Diabetes.—F. Rathery points out that diabetes may be either absolutely intermittent or relatively intermittent, being continuously present, but much less marked, at certain periods. The periods between intermittences may be long or short, and in regular intermittent diabetes the cause of the intermittences is always the same, while in irregular intermittent diabetes no constant cause is apparent. Intermittences of long periodicity may

occur in cases of established diabetes, in relation to changes of diet, physical exercise, anxiety, intense mental activity, or an intercurrent infection. In apparently healthy subjects, on the other hand, glycosuria may appear at long intervals upon ingestion of an excess of sugar. Irregular intermittences may occur either in diabetics or nondiabetics. The author has observed a number of diabetics in whom, under constant diet and physical and mental conditions, glycosuria was present on some days but on others disappeared. At times glycosuria in diabetics leaves off suddenly and reappears later, perhaps with acidosis, without apparent cause. All cases of regular intermittent glycosuria may be said to have diabetes mellitus. Cases with irregular intermittences are also suspicious, and any recurring glycosuria may be considered symptomatic of diabetes.

Treatment of Gonorrheal Cystitis.—Dopter and Pauron report brilliant results in a severe case of gonorrheal cystitis with the use of Cruveilhier's sensitized antigonococcus vaccine. The condition had been completely refractory to drugs and other measures. The patient was emaciated, anemic, and confined to bed, and 300 grams of pus were passed daily, sharp pain accompanying each micturition. The pus showed many gonococci. Swelling of one knee had just appeared. On the day after the first vaccine injection, consisting of one quarter of a culture, pain and frequency of urination were already less and blood was no longer found in the urine. After the third injection, gonococci disappeared from the urinary sediment. Seven injections in all were given in a period of three weeks, the patient's general condition rapidly improving, the urine returning to normal, and the pain disappearing. The patient was discharged in six weeks, in excellent health.

Heliotherapy of Surgical Tuberculosis.—G. A. Guye states that increased area of the tuberculous lesion is a usual accompaniment of local heliotherapy. A tuberculous knee increases by one centimetre upon seven hours' exposure to sunlight. Tuberculous lymph nodes and other abscesses rise near the skin surface under the influence of the sun's rays, and localized sweating is also a characteristic effect, unaccompanied by any change in the color of the skin unless the latter is itself already infiltrated and inflamed, when the customary purplish hue changes to a bright red. Open lesions such as superficial caries of flat bones, with sinuses, show a pronounced serous or seropurulent transudation, together with rubefaction and swelling of their borders. Subjectively, a pleasant circumscribed sensation of warmth, and even an actual analgesic effect, are experienced; if the insolation is excessive, pain and throbbing may be felt. The intensity of the focal reaction depends not only upon the power of the sun's rays but also on the patient's general and local condition. In the more severe and advanced cases, exposure to the sun of parts other than the disease focus is sufficient to cause a beneficial reaction, whereas if the focus itself is directly exposed, excessive and even dangerous local and general reaction might result. The effects of heliotherapy include complete relief of pain, improvement or entire return of mobility in ankylosed joints, disappearance of exudates, and evacuation of abscesses. As the local condition improves the reaction to sunlight decreases, in spite of increasing length of exposures.

PRESSE MÉDICALE.

May 23, 1914.

Monosymptomatic Hepatic Insufficiency.—P. Le Damany discusses cases of hepatic disorder which prove confusing in attempts at diagnosis. He divides them into four groups: 1. Hemorrhagic, in which epistaxis is the better known manifestation, though purpura is probably more frequent; 2, nervous, in which characteristic features are headache, delirium, and convulsions; 3, edematous, in which the edema may be slight or grave; 4, cachectic, in which there is emaciation and absence of ascites of liver disease. Hepatic disease in the cases presenting headache, delirium, or convulsions, was detected through the urine, which showed deficient excretion of urea. Seizures, apparently epileptic, may thus arise from hepatic insufficiency. Edema of the lower limbs is, according to Le Damany's experience, a common condition, especially in alcoholics; he terms it "precirrhotic edema." Tuberculosis, syphilis, and neoplasm of the liver at times lead to edema, though alcohol is the usual cause. In some cases edema was followed by convulsions, delirium, and apparent recovery from an ordinary cirrhosis followed by purpura. The diagnosis rests on quantitative estimation of urea, of urobilin, on alimentary glycosuria, intermittent elimination of methylene blue, and exclusion of other possible causes.

Cryoscopy of the Gastric Contents.—Léon Meunier found that, after a test meal consisting of bread, the freezing point of the gastric contents is at first very low, but rises considerably during the succeeding hour and a half. After ingestion of meat, on the contrary, the freezing point is at first very high, then gradually falls. The author concludes that, whatever material is ingested, the freezing point tends gradually to a certain level, which is 0.35. Meunier advises that drugs should be always adjusted to the proper freezing point, in order that they shall leave the stomach as quickly as possible. The following dilutions of various drugs are cryoscopically correct: Sodium bicarbonate, 0.9 per cent.; dried sodium citrate, two per cent.; sodium phosphate, 1.1 per cent.; potassium bromide, two per cent.; sodium chloride, 0.55 per cent.; peptone, four per cent.; cane sugar, six per cent.; official hydrochloric acid, 0.935 per cent.; official phosphoric acid, 2.68 per cent.; potassium iodide, 1.5 per cent.; glucose, 3.2 per cent.; sodium salicylate, 1.55 per cent., and dried sodium sulphate, one per cent. Where a powerful agent, such as an alkaloid, is necessarily given in very dilute solution, the freezing point of the solution can be lowered to the level required for its most rapid discharge into the intestine by adding sodium chloride or bicarbonate. Thus, to a one per cent. solution of cocaine hydrochloride, 0.30 per cent. of sodium chloride should be added. Where remedies are

thus prescribed, the least possible gastric disturbance will be occasioned.

BRITISH MEDICAL JOURNAL.

June 6, 1914.

Prophylactic Use of Sensitized Vaccines in Puerperal Sepsis.—Sydney T. Champtaloup finds that the common organisms present in the genital passages before labor are the streptococcus, staphylococcus, gonococcus, and the colon bacillus. Many of these same organisms have been isolated from time to time from the uterus in puerperal sepsis, the commonest being the streptococcus. Observing the beneficial and curative effects of sensitized killed vaccines made from streptococci isolated in sepsis, Champtaloup used a laboratory stock vaccine of a mixture of several strains of streptococcus as a prophylactic against puerperal sepsis in a hospital epidemic. His results were excellent and he suggests continued practice of this means of prophylaxis. In a case of sepsis, however, one should use a vaccine prepared from the organisms obtained by careful intrauterine swab cultures and these may be sensitized either against a standard polyvalent antiserum, or, where this is not available, against the serum of the patient herself. Doses of 100 up to 1,000 million organisms should be given at intervals of forty-eight hours and administration should be started as early as possible.

Direct Intragastric Method of Treating Certain Ulcers.—J. Lynn Thomas, operating in a case of ulcer of the posterior wall of the fundus, scraped radially from the centre of the ulcer with Volckmann's spoon all the unhealthy tissue as far as the under surface of the mucous membrane forming its edge. Thermocauterization of the exposed fresh base of the ulcer was done to stop hemorrhage completely and to sterilize; next mobilization of the mucous membrane all round the edge of the ulcer by means of a long blunt pointed scissors curved on the flat and with a delicate end. The edges of the healthy mucous membrane were brought together by means of continuous or interruptured sutures. The gastrotomy wound was closed with separate continuous suture for the mucous, muscular, and serous layers. The abdominal wall was then closed. Thomas has since used this method in other cases with good results. He believes that it will take the place of excision of middle portions of the stomach now so frequently practiced: it is not practicable for ulcer located near the pylorus.

Urinary Diastase Test and Loewi's Reaction in Pancreatic Lesions.—Laurence Humphry reports two obscure cases of pancreatic disease in which the urine showed a marked increase of diastase, in which Loewi's test, or the dropping of epinephrine into the eye, gave a positive reaction, i. e., dilatation of the pupil in less than an hour. These two tests, taken in conjunction with other suggestive symptoms, are of decided value in proving the presence of a pancreatic lesion.

Acidosis Terminating Chronic Myocardial Disease—Carey Coombs thus summarizes his observations: "Two cases of chronic myocardial disease are described in which the terminal phase was marked by clinical evidences of acid intoxication, acetone smell in the breath, air hunger, dyspnea, thirst, and cerebral symptoms. This acidosis was apparently not of the type associated with diabetes and other well known disorders, in that the beta-hydroxy acids were not present in excess in the urine. Neither alkalis nor oxygen inhalations had any effect on the course of this intoxication."

Electrargol in Smallpox and Plague.—Robert Denman has been able to reduce the mortality of the former disease from about sixty-nine per cent. to about eleven per cent. in the confluent form and from about eighty-nine per cent. to about twenty-five per cent. in the hemorrhagic type by the intravenous injection of electrargol. The earlier the treatment is begun the more favorable are the results. In bubonic plague the mortality fell from eighty-three per cent. to sixty per cent. as an effect of the same drug, but nothing was found to have any effect on the fatality of the abubonic and pneumonic forms.

LANCET.

June 6, 1914.

Acute Pancreatitis.—Arthur E. Barker presents the records of seven cases of this disease and tries to form from them a clinical picture to aid in its diagnosis. Three of the patients described similar attacks at intervals before the one here recorded. Four had had some stomach trouble or biliousness for some time before the attack. None of the patients gave any indication in their past history to suggest trouble with the biliary passages, nor was the gallbladder found diseased at operation. Except in one case, the onset was strikingly sudden, with severe epigastric pain as the first and most prominent symptom. This pain was exceedingly intense in most of the patients. The temperature was relatively low in all cases, sometimes being subnormal when shock was marked. The pulse was usually rapid and of poor tension. Vomiting was usual at the onset, but less marked later, the material usually being bilious with mucus. No tumor was found in any patient without the aid of an anesthetic. Turbid peritoneal fluid was found on opening the abdomen in three of the cases. There was marked injection of the intestines and they were dilated in four of the patients operated upon, but they were not paralyzed. The discharge coming from the region of the pancreas showed evidence of hemorrhage in three of the cases. The destructive process had penetrated the omental sac in only three. Of the seven cases discussed, six were operated in, and five patients were saved by the operation. One was too far advanced for operation, and the other died on the morning after an attempt was made to check the condition surgically.

Neosalvarsan in Active Pulmonary Tuberculosis.—P. Horton-Smith Hartley observed that the administration of neosalvarsan to a tuberculous and syphilitic patient caused a marked beneficial effect on the temperature range. Following this up, he administered the drug intravenously to a considerable number of patients in the acute stage of pulmonary tuberculosis. "The effect, as a rule,

is not immediate, but shows itself after an interval of two or three days. The temperature then falls, possibly to normal, where it may remain. In other cases defervescence is not complete and a second injection is required before it becomes normal. In other cases a third injection may be required. With the fall in temperature an improvement in the patient's general condition occurs which is sometimes very striking, and, with this there is a lessening of the cough and a diminution in the amount of sputum." The rales become drier, but there is otherwise no marked alteration. He does not regard neosalvarsan as a specific in tuberculosis, but suggests that it has the power of favorably influencing certain cases.

Sprue Treated with Vaccines and Emetine.—Leonard Rogers gives an account of his recent experience with two very severe and chronic cases of sprue, both of which were cured by the subcutaneous injection of emetine hydrochloride and the administration of vaccines made from streptococci cultivated from the mouth in each instance. While in both cases the vaccine seemed to have a very marked effect there is little doubt also that emetine played an important role. The success attending the use of the autogenous vaccines, which were prepared from the nearly pure cultures of streptococci obtained from the mouth, suggests the possibility that these organisms may be the cause of the disease in some cases at least. The use of the emetine seemed to be without ill effects or untoward symptoms, although as much as one grain was given at a dose.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Recommendations as to Sanitation Made to the Transvaal Chamber of Mines.—Surgeon General W. C. Gorgas gives a detailed report of his investigations of the high death rate, especially from pneumonia, among native workers in the Rand mines, and of the measures necessary to reduce the death rates, and to improve the general sanitary condition of the mines. In this work he was assisted by Major R. E. Noble and Dr. S. T. Darling of the Isthmian Canal Commission.

Direct Transfusion of Blood.—V. D. Lespinasse finds that direct transfusion of blood in hemorrhagic disease of the newborn stops the bleeding, restores lost blood, aids in overcoming infection, and that it has cured where all other methods have failed. Transfusion should be used early, and so long as there is a spark of life evident, it is never too late to transfuse. In his series of cases no death occurred from hemorrhage. Two patients died from syphilis, one five days, and the other nine days, after transfusion.

Compound Fractures of the Bones of the Extremities.—W. L. Estes sets down the following postulates: 1. In civil practice a compound fracture is always not only a solution of the continuity of the bone, but also a lacerated wound of the soft tissues in continuity with the periosteum and skin. 2. Violence necessary to produce a compound fracture of the bone of an extremity must be very great; hence the traumatism is extensive. Commonly the bone is comminuted and the laceration of the soft tissues very severe. 3. Compound fractures are practically always infected wounds. 4. The management of these injuries must include the treatment of a fractured bone and that of a more or less extensive infected lacerated wound of the soft tissues of the same area. In a series of fifty-one cases, direct fixation produced much quicker recoveries and far better results than the former conservative methods. Not one of thirty-five patients, to whom direct fixation was applied, died. All made good recoveries. In thirteen cases, in which the fragments were not thus fixed, two patients died of sepsis. Three hopeless cases are not considered in this reckoning. The matter of drainage is all important. Röntgen pictures were taken after the first permanent dressing, after the fixation plates had been removed, when the union seemed complete, and after the patient had returned to his occupation.

Treatment of Puerperal Sepsis.—J. C. Hirst says that the preventive treatment may be summed up in two words: surgical cleanliness. The routine use of vaginal or uterine douches, as a preventive of infection, is not to be recommended. The first step in the curative treatment is the local disinfection of the genital canal, commonly but erroneously spoken of, as curettage—an operation more abused than any other single one in obstetrics. It is indicated in nearly every case, and, properly done, is productive of much good; improperly done, it may be homicidal. It should be preceded and followed by an intrauterine douche of 1 in 4,000 mercuric chloride solution. The uterine cavity must be thoroughly emptied, and for this purpose, placental forceps are much more effective than the finger. Should the temperature not subside, or, having subsided, rise again, there is no need nor justification for a second evacuation of the cavity. Intrauterine douching (once daily) alone is advisable, and the best solution for use is one of tincture of iodine, two drams, ninety-five per cent. alcohol, eight ounces, and sterile water sufficient to make two quarts. If a sharp rise of temperature should follow the disinfection, no further local treatment should be countenanced. An easily digested diet, largely liquid, should be given in quantities as great as the patient can assimilate. Alcohol should be given to the point of tolerance; from eight to ten ounces of whiskey a day not being an unusual allowance. A patient with a pulse of under 110 does not ordinarily require stimulation; if it passes this limit, digitalin and strychnine are the most reliable drugs to use. Artificial leucocytosis, theoretically beneficial, can be produced in one of several ways, as by hypodermic injection of two drams of two per cent. nuclein solution twice daily, or by the formation of a fixation abscess. Hypodermoclysis and enteroclysis, on the principle of increasing the body fluids and washing the blood, are worth a trial, but are not too much to be depended on. Enteroclysis seems to do as much good as the former, and is much more convenient. The use of serums and bacterins is at present much discussed. When the

serum was first marketed, it was hailed as a specific cure; too much was expected of it, and naturally the results were disappointing. When it is given early and in sufficient doses, beneficial and sometimes brilliant results can be expected. When it is given late, the results are disappointing. The use of bacterins has not proved as satisfactory as that of serum.

MEDICAL RECORD.

[illegible]

Palpation under the Fluorescent Screen.—J. T. Case believes that for complete safety one should palpate with a spoon or some similar device, and he has constructed a modification of the Holzknecht distinctor, which is often preferable to the Holzknecht spoon. Those who have had the satisfaction to palpate the bismuth filled stomach or bowel under the fluorescent screen can fully appreciate visualized abdominal palpation under fluoroscopic guidance; but adequate protection must be insured before such palpation can be practised. Unless the greatest caution is observed in x ray work, great suffering and even loss of life may result.

Should Sanitary Control of Prostitution Be Abandoned?—J. Rosenstirn holds that a recession of such control means an equal recession of protection from venereal disease. The spirit of progress points not to an abandonment, but to ceaseless vigilance and constant improvement in the systems of sanitary control, employment of the most advanced, complete, and reliable means of examination, and a humanely generous and reasonably sympathetic treatment of the women concerned. This must be accompanied by the establishment of a system of general child protection, early educational methods, including sex hygiene, and social betterment in handling the great problem of prostitution, instead of the prevailing course of criminal prosecution. In order that such a change may be accomplished, saner views as to legislation and sex immorality must enter the minds of lawgivers, and proper efforts should be made to stem the flood of hysterical vice campaigns, with their subsequent disinterments of barbarous medieval systems of prosecuting of prostitutes. It would be difficult to devise a more efficient plan for the general dissemination of venereal diseases than the persecution, which renders it impossible for any health department to exercise a wholesome check of infection by the only rational remedy, a thorough and modern sanitary control of prostitution.

Management of Cardiorenal Disease.—C. E. Nammack says that the cases should be treated as heart cases rather than kidney cases, and along the lines appropriate for compensated valvular disease. The exact toxemia, which induces the condition, is as yet obscure, but a disordered gastrointestinal tract and liver, or possibly some obscure perversion of metabolism, may be the source of the poison. A deranged bowel function fills the liver with toxic albuminoids and alkaloids, the liver cells are unable to cope with this tide, and intestinal toxins filter through into the circulation beyond; where the kidney cells cannot deal with them efficiently, owing to their incomplete elaboration by the hepatic cells. If this view of the vicious circle established is accepted as a working basis, causal treatment of cardiorenal disease should concern itself first with the prevention of intestinal putrefaction. While the production of complete intestinal antisepsis may be a chimera, certain drugs may be useful. Cholagogue drugs increase the flow of bile, and bile is the best intestinal antiseptic. Nonpoisonous metallic salts like zinc sulphocarbolate and bismuth preparations may act chemically. The diet selected must fulfil three conditions: It must be sufficient to maintain nutritive equilibrium, it must be nonirritating to the kidneys, and it must not throw too much work on the digestive and circulatory organs. Despite certain drawbacks, the sensible administration of milk is a necessity in every case. However discordant the views of laboratory workers regarding the effect of salt in the diet, the clinical fact remains that withdrawal of salt will diminish edema resulting from renal disturbances which involve inadequate excretion of sodium chloride. Drugs should be used sparingly and reserved for emergencies. Hydrotherapeutic measures are much safer, and more efficient for influencing the heart's action and the blood pressure. In selecting a climate for chronic nephritis, preference should be given to one in which the daily temperature fluctuations are small, the altitude low, and the atmosphere dry.

Vaccine Treatment of Chronic Rheumatism.—H. Greeley regards all arthritic inflammation as microbic, and ninety per cent. of them as due to the streptococcus. He considers acute inflammatory rheumatism, chronic articular rheumatism, and arthritis deformans but different manifestations of one cause, modified by individual susceptibility, both constitutional and local, and duration of disease. He reports successful treatment of chronic rheumatism by means of autogenous vaccines. The preferable source for these is the pharynx, and of fifty-three prepared by him for such treatment during the past year, only five were from the blood and fifteen from the urine.

Letters to the Editors.

WASSERMANN RENDERED POSITIVE BY LUETIN.

PARSONS, KANSAS, *June 12, 1914.*

To the Editors:

I am sending you a short report of a rather interesting thing, and since the literature does not report an instance of this kind, I trust it will be of value if given space in the columns of the NEW YORK MEDICAL JOURNAL.

M. B., male, aged thirty-two years, was referred to me for treatment, April 3d. The patient presented symptoms of general paresis and gave a history of having had a venereal sore nine years ago. The Wassermann was negative; a provocative Wassermann, one week later, was negative. He was then given 0.07 c. c. of luetin in the usual manner and developed a beautiful vesicle. One week after the luetin, the Wassermann was decidedly positive.

J. G. MISSILDINE, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Radium Therapeutics. By N. S. Finzi, M.B. (Lond.), M.R.C.S., L.R.C.P., L.S.A., Chief Assistant in the X Ray Department St. Bartholomew's Hospital. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1913. Pp. 112. (Price, $2.)

The author has published some instructive articles on radium experiments made either alone or in conjunction with Horsley, who was known as a student of radiology. A monograph on radium written by him will therefore be welcomed by physicians interested in the therapeutics of radium. Let us follow his book through the several chapters to see what the author has accomplished. After a brief, almost too brief a description of the physical properties of the metal, Finzi discusses its internal administration. It is obvious that for various reasons the radium salts cannot be given internally. An exception are the waters of the Bad Kreuznach in Germany. But, we agree with Finzi that practically all the properties of radium, which are medically useful, can be obtained from the emanation.

Another and seemingly better method of getting radium into the blood is by inhalation. Finzi found that when the emanation is inhaled, it is excreted much more rapidly than when taken by mouth. But no matter in which way it is administered, excretion is always chiefly through the lungs. Many inhalatoriums and baths have sprung up in consequence of this action of the emanation and manifold cures reported even in reputable medical journals abroad, which alas! will not stand the test of time. We perfectly agree with the author on this point and are glad to quote the following from Finzi's book (p. 24): "Medical men and others employing the emanation in therapeutics, have unfortunately been less careful than those employing the rays of radium not to overstate their cases, and as a result, cures have been claimed for a variety of diseases in such manner as would ordinarily grace the advertisements of a patent medicine."

The next chapter on the histological, physiological, and pathological action of radium radiations is well written, and it seems to us that in this chapter lies the main value of the book. The variety of diseases mentioned as having been treated with radium is entirely too great to be discussed here with even moderate satisfaction to the reader. Although some good points are given in the therapeutic part of Finzi's book, the author narrates too many affections as treated by him without making reference to the work of others and occasionally citing only on one case cured, as in hypertrichosis.

The question what to do in malignant growths is still an open one. As the disease, when untreated, is so universally fatal, it is impossible at present to recommend any patient to forego the chances of surgical treatment, which is an old and tried method, and gives a fair proportion of successful results. But Finzi does insist that it should be combined with radium treatment, in the forms of growth which react readily to this treatment. All in all, the author has fulfilled what he promised in the preface, viz., to give a brief and clear account of the action and uses of radium and its rays. He has also distinguished between ascertained facts and results which have not been definitely proved, and we are glad to recommend the book to the profession.

Die Malaria nach den neuesten Forschungen. Von Prof. Dr. Angelo Celli, Direktor des hygienischen Institutes der Universität Rom. Zweite deutsche Auflage nach der vierten neubearbeiteten italienischen. Uebersetzt von Anna Frantzel Celli. Mit 4 zum Teil farbigen Tafeln und 121 Textabbildungen. Berlin und Wien: Urban & Schwarzenberg, 1913. Pp. viii-204. (Through Rebman Company, New York.)

In Professor Celli's monograph, an admirable example of modern Italian science and scholarship, we have presented in this second German edition the entire subject of malaria in all its widely varied biological, pathological, and economic aspects. The life history of the plasmodium, the anatomy and parasitology of its host, Anopheles, and the latest and best laboratory methods are fully described in the first part devoted to etiology. Epidemiology, the geographical distribution of malaria, methods of infection, causes of predisposition and immunity, the relations of malarial disease to agriculture, mining, and railway construction, and the influence of meteorological conditions are considered in the second part. The concluding sections deal with practical methods of prophylaxis such as destruction of the malarial parasite and mosquito, isolation of the sick, disinfection, administration of quinine, drainage, and the protection of dwellings. The volume is illustrated with numerous half tone cuts, charts, and well executed maps, and an exhaustively complete bibliography is appended including the classic period of Latin literature. The student of malarial disease and the public health officer will find much instruction and helpful suggestion in this latest edition of an authoritative work.

Transactions of the American Surgical Association. Volume the Thirty-first. Edited by Archibald MacLaren, M.D., Recorder of the Association. Printed for the Association. Philadelphia: William J. Dornan, 1913. Pp. xlv-623.

This volume of transactions contains original articles of considerable interest. Dr. John B. Murphy's experiences in arthroplasty for ankylosed joints are very encouraging for his new method of treatment by the interposition of a muscular flap. The results are well shown by x ray plates and by photographs. Five cases of suture of the heart with two recoveries are described in detail by Dr. Francis T. Stewart. The surgery of the pulmonary artery is condensed into a single paper by Dr. Willy Meyer. This is particularly interesting and represents some original work by this author in the field of lung surgery with the help of differential pressure.

Interclinical Notes.

A fine example of quasimedical information appears in A Modern Opium Eater, by 6606 (a convict number), in the *American Magazine* for June. Every *gobe-mouches* of a reformer will swallow eagerly the misstatements in this story which pretends to be a narration of facts. On the assumption, however, that the tale is a true one, the conclusion of the writer that opium produces only criminal thoughts is absolutely false. It is contradicted by the well known histories of De Quincey, Coleridge, Wilkie Collins, and many other men of charming character. In connection herewith, we may cite the opinion of an unprejudiced expert, Dr. W. C. Ashworth, of Greenboro, N. C., who, in the *Medical Council* for June, writes as follows: "And in considering the effect of the continued use of opiates upon this part of man (the soul), I must vehemently protest against the statements that are made in almost every textbook that the 'opium eater is an inveterate liar, etc.; that his moral nature is so destroyed that he is *amoral*, etc.' In looking carefully over the characters of the numerous habitués that I have known, I must positively state that there were a number of them that were really *high* men. I mean by this, men far above the average in morality, whom you could trust in any position, to whom you could lend money and get it back, with whom you could trust your wife although she was somewhat gay, and get her back untouched; men who did their duty in every position in life. It is probable that every habitué will lie about his habit; and if it is true that the average habitué will lie more than the average man, it is probably due to this fact: That it is hard for a person to lie habitually on any one subject without the practice spreading to other subjects. The worst harm that the drug does to the habitual user is the hold it gets upon him. Without outside help he cannot give it up; he is the slave of a powerful monster. . . . The opiophagist is drawn from the best class of humanity; the vast majority are educated men and women who have known culture and refinement. In my experience, they are intellectually far above the average.

'Is it true, O Christ in Heaven, that the highest suffer most?
That the strongest wander farthest, most hopelessly are lost?
That the mark of rank in nature is capacity for pain?
That the anguish of the singer makes the sweetness of the strain?'"

Meetings of Local Medical Societies.

Monday, *June 29th.*—Poughkeepsie Academy of Medicine.
Tuesday, *June 30th.*—Medical Society of the County of Ulster, N. Y.
Wednesday, *July 1st.*—Psychiatrical Society of New York; Society of Alumni of St. John's Hospital, Brooklyn.
Thursday, *July 2d.*—Geneva Medical Society.
Friday, *July 3d.*—Corning Medical Association.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending June 17, 1914:

Brown, R. W., Acting Assistant Surgeon. Granted five days' leave of absence from June 22, 1914. **Carter,** H. R., Senior Surgeon. Granted seven days' leave of absence from June 13, 1914, under paragraph 193, Service Regulations. **Earle,** Baylis H., Passed Assistant Surgeon. Granted one month and fifteen days' leave of absence, beginning May 25, 1914. **Foster,** M. H., Surgeon. Granted one month's leave of absence from July 15, 1914. **Francis,** Edward, Surgeon. Directed to proceed to the Hygienic Laboratory, and thence to the Rockefeller Institute for Experimental Medicines, New York, in connection with methods of technique employed in anaerobic cultural work. **Goldberger,** Joseph, Surgeon. Directed to proceed to Richmond, Va., for the investigation of a suspected case of typhus fever; also directed to inspect insane asylums and other institutions in Illinois, Pennsylvania, and New Jersey in relation to dietaries in the causation of pellagra. **Grubbs,** S. B., Surgeon. Directed to deliver a series of lectures on sanitation at the Summer School of the South at the University of Tennessee at Knoxville, June 23 to July 10, 1914. **Kerr,** J. W., Assistant Surgeon General. Detailed to represent the service at the eighth annual meeting of the American Association of Medical Milk Commissions at Rochester, N. Y., June 18 to 20, 1914, and the meeting of the American Medical Association at Atlantic City, N. J., June 22 to 25, 1914; also to represent the Service in the House of Delegates. **Magruder,** G. M., Surgeon. Granted nine days' leave of absence from June 22, 1914. **Miller,** K. E., Assistant Surgeon. Granted seven days' leave of absence, beginning June 13, 1914, under paragraph 195 of the Service Regulations. **Purdy,** W. C., Plankton Expert. Directed to report to Passed Assistant Surgeon W. H. Frost, at Cincinnati, for duty in the investigation of the pollution of streams. **Robertson,** H. McG., Passed Assistant Surgeon. Granted three days' leave of absence, beginning June 5, 1915, under paragraph 195 of the Service Regulations. **Rucker,** W. C., Assistant Surgeon General. Detailed to attend the annual meeting of the American Medical Association at Atlantic City, N. J., June 22 to 25, 1914. **Stiles,** C. W., Professor. Directed to attend the meeting of the North Carolina Medical Society to be held in Raleigh, N. C., June 16 to 18, 1914, to participate in the symposium on tropical diseases. **Thompson,** L. R., Assistant Surgeon. Granted five days' leave of absence, beginning June 13, 1914. **Trask,** J. W., Assistant Surgeon General. Detailed to attend the annual meeting of the American Medical Association at Atlantic City, N. J., June 22 to 25, 1914, and represent the Service in the Section in Preventive Medicine and Public Health. **Wayson,** N. E., Assistant Surgeon. Granted nine days' leave of absence on account of sickness from May 25, 1914. **Wertenbaker,** C. P., Surgeon. Relieved from duty at Providence, R. I., and directed to proceed to Stapleton, N. Y., and report to the medical officer in charge for duty and assignment to quarters. **Wynne,** R. E., Acting Assistant Surgeon. Directed to proceed to Bedford, Indiana, and other places in connection with investigations of rural sanitation.

Births, Marriages, and Deaths.

Married.

Archele—King.—In Philadelphia, on Wednesday, June 17th, Dr. Otto W. Archele and Miss Ada B. King. **Beardslee—Fitch.**—In Bridgeport, Conn., on Thursday, June 11th, Captain George Beardslee and Dr. Alice Lyon Fitch. **Daly—O'Brien.**—In Lowell, Mass., on Wednesday, June 10th, Dr. James A. Daly, of Lynn, and Miss Mary A. O'Brien. **LaFontaine—Beaudry.**—In Holyoke, Mass., on Tuesday, June 9th, Dr. Gustave LaFontaine, of Manchester, N. H., and Miss Elegantine Beaudry. **Newburger—Friede.**—In Philadelphia, on Thursday, June 11th, Dr. G. M. Newburger and Mrs. Corinne Friede. **Owen—Bruce.**—In West Winfield, N. Y., on Wednesday, June 10th, Dr. Fred T. Owen, of Utica, N. Y., and Miss Grace Bruce. **Paine—Yoe.**—In Salem, Mass., on Wednesday, June 10th, Dr. Harlan L. Paine, of Gardner, Mass., and Miss Amy McLean Yoe. **Reuss—Rauch.**—In St. Louis, Mo., on Tuesday, June 9th, Dr. A. LeRoy Reuss, of Belleville, Mo., and Miss Freda Rauch. **Shuffleton—Henschel.**—In Northport, L. I., on Wednesday, June 24th, Dr. Joseph Henry Shuffleton, of King's Park, N. Y., and Miss Elsie Nelson Henschel. **Stillman—Ley.**—In Elizabeth, N. J., on Tuesday, June 9th, Dr. Ralph Griffith Stillman, of New York, and Miss Olive Gertrude Ley.

Died.

Berlin.—In New York, on Sunday, June 14th, Dr. Frederick F. R. Berlin, aged fifty-five years. **Bradley.**—In Lancaster, Mass., on Friday, June 12th, Dr. George Perley Bradley, aged sixty-five years. **Butterworth.**—In South Bend, Ind., on Friday, June 12th, Dr. Charles M. Butterworth. **Carnes.**—In Peoria, Ill., on Sunday, June 7th, Dr. H. Carnes. **Coonan.**—In Baltimore, Md., on Saturday, June 6th, Dr. John M. Coonan. **Cranz.**—In Oklahoma City, Okla., on Saturday, June 6th, Dr. Darius E. Cranz, aged sixty years. **Dillon.**—In New York, on Tuesday, May 5th, Dr. John Forrest Dillon, aged eighty-two years. **Fairall.**—In Deer River, Minn., on Tuesday, June 9th, Dr. Herbert Snowden Fairall, aged thirty-six years. **Flemming.**—In Philadelphia, on Sunday, June 14th, Dr. D. William Flemming. **Foulke.**—In New Hope, Pa., on Thursday, June 11th, Dr. Richard C. Foulke, aged seventy-one years. **Kinney.**—In Olds, Iowa, on Wednesday, June 10th, Dr. Fred J. Kinney, aged twenty-seven years. **Kyle.**—In Ithaca, N. Y., on Tuesday, June 9th, Dr. Edmond H. Kyle, aged sixty-five years. **McGrath.**—In Northampton, Mass., on Friday, June 12th, Dr. William Russell McGrath, aged twenty-three years. **Marx.**—In New York, on Tuesday, June 16th, Dr. Simon Marx, aged forty-nine years. **Millikin.**—In Hamilton, Ohio, on Friday, June 5th, Dr. Dan Millikin. **Moore.**—In Indianapolis, Ind., on Monday, June 15th, Dr. Samuel H. Moore, aged seventy-one years. **Nelson.**—In Minneapolis, Minn., on Friday, June 12th, Dr. Martin A. Nelson, aged fifty-four years. **Newman.**—In Brooklyn, N. Y., on Tuesday, June 16th, Dr. Frank R. Newman. **Newman.**—In Brooklyn, N. Y., on Saturday, June 13th, Dr. George W. Newman, aged seventy-two years. **Neyman.**—In Milwaukee, Wis., on Sunday, June 7th, Dr. Edgar H. Neyman. **Oswald.**—In Lakewood, Ohio, on Wednesday, June 10th, Dr. Benjamin Franklin Oswald, aged forty-eight years. **Palmer.**—In Canon City, Colo., on Monday, June 8th, Dr. Thomas Palmer. **Ramsay.**—In New Haven, Conn., on Friday, June 12th, Dr. Otto Gustav Ramsay, aged forty-five years. **Ross.**—In Altoona, Pa., on Friday, June 12th, Dr. William S. Ross, aged sixty years. **Shellfish.**—In Detroit, Mich., on Monday, June 8th, Dr. Joseph Shellfish, aged forty years. **Thieman.**—In Louisville, Ky., on Tuesday, June 9th, Dr. John H. Thieman, Jr., aged thirty-six years. **Tullis.**—In Camden, N. J., on Thursday, June 11th, Dr. Eli R. Tullis, aged seventy-seven years. **Vedder.**—In Caldwell, N. J., on Saturday, June 13th, Dr. Maus R. Vedder, aged eighty years. **Woodson.**—In Oakman, Ala., on Thursday, June 11th, Dr. Landon A. Woodson, aged seventy-eight years. **Young.**—In Chicago, Ill., on Sunday, June 7th, Dr. C. H. Young, aged sixty years.

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